



ATLAS.ti 8 Mac User Manual

ATLAS.ti 8 Mac - User Manual
UPDATED FOR PROGRAM VERSION 8.3
Please ensure your installation is fully updated at all times (ATLAS.ti > CHECK FOR UPDATES).

Copyright ©2018 by ATLAS.ti Scientific Software Development GmbH, Berlin. All rights reserved.
Document version: 688.20181011.

Author: Dr. Susanne Friese (QuaRC)
Production: hypertexxt.com/Dr. Thomas G. Ringmayr

Copying or duplicating this document or any part thereof is a violation of applicable law. No part of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including, but not limited to, photocopying, without written permission from ATLAS.ti GmbH.

Trademarks: ATLAS.ti is a registered trademark of ATLAS.ti Scientific Software Development GmbH. Adobe Acrobat is a trademark of Adobe Systems Incorporated; Microsoft, Windows, Excel, and other Microsoft products referenced herein are either trademarks of Microsoft Corporation in the United States and/or in other countries. Google Earth is a trademark of Google, Inc. All other product names and any registered and unregistered tradem

Contents

About This Manual.....	8
Basics.....	8
Conventions In this Manual.....	8
Useful Resources to help you Get Started.....	8
Introduction.....	9
What is ATLAS.ti.....	9
The VISE Principle.....	9
Areas of Application.....	9
Teamwork.....	10
The Knowledge Workbench.....	10
Creative Analysis.....	10
Some Basic Terms.....	11
General Steps when Working with ATLAS.ti.....	11
Main Concepts and Features.....	12
Overview.....	12
Documents.....	13
Document Groups (Data Attributes).....	13
Quotations.....	13
Memos.....	15
Groups.....	15
Networks.....	15
Project Search.....	17
Analysis.....	17
Export.....	18
Team Tools.....	18
Installing And Updating ATLAS.ti Mac.....	19
Installing ATLAS.ti Mac.....	19
Installing Updates.....	19
Troubleshooting.....	19
Main Steps In Working With ATLAS.ti.....	19
Overview.....	19
The Process.....	20
The Interface.....	21
Overview.....	21
Project Explorer.....	22
Overview.....	22
Project Explorer Actions.....	24
Creating A New Project.....	24
Importing Projects From ATLAS.ti 7 Windows.....	25
Importing Projects From ATLAS.ti 8 Windows.....	25
Importing ATLAS.ti Mobile Projects (iPad & Android).....	25
Project Management.....	26
Exporting Projects From Mac To Windows.....	26
Project Transfer & Backup.....	26
Project Duplication.....	26
Password Protection.....	26
Creating User Accounts.....	27
Where Is Your Project Stored?.....	27
Changing the Default Location for ATLAS.ti Project Data.....	27
Adding Documents To A Project.....	30

Supported File Formats.....	30
Importing Documents.....	32
Linking Multimedia Documents To A Project (Audio / Video).....	32
Adding Video Snapshots.....	32
Adding Geo Documents To A Project.....	33
Importing Transcripts With Time Stamps.....	33
Duplicating Documents.....	36
Setting Up A Team Project.....	37
General Procedure.....	37
Overview Of the Main Steps.....	37
1. Project Administrator.....	38
2. All Team Members.....	41
3. Project Administrator.....	41
4. Team Membership.....	47
Useful Resources.....	47
Working With Documents.....	47
Loading Documents.....	47
Multiple Document View.....	48
The Document Manager.....	49
Overview.....	49
Opening The Document Manager.....	49
Main Window.....	49
Previewing Document Content.....	50
Adding and Removing Project Documents.....	50
Grouped By Option.....	50
Side Panel.....	50
Filtering Documents By Document Groups.....	51
Creating New Document Groups.....	51
Document Inspector.....	51
Exploring Your Data.....	52
The Word Cruncher.....	52
Project-Wide Search.....	54
Working With Quotations.....	55
Creating Quotations.....	55
Renaming Quotations And Writing Comments.....	56
Modifying The Length Of Quotations.....	57
Reviewing Quotations.....	57
Coding Data.....	58
Overview.....	58
Add Coding.....	58
Coding via Drag-And-Drop.....	59
Quick Coding.....	60
In-Vivo Coding.....	60
Unlinking Codes.....	61
Writing Code Comments.....	61
Merging Codes.....	61
Replacing A Code.....	62
The Quotation Manager.....	62
Overview.....	62
Opening the Quotation Manager.....	63
Main Window.....	63
Previewing Quotation Content.....	63
The Grouped By Option.....	64
Deleting Quotations.....	64
Side Panel.....	64
Filtering Quotations By Codes.....	64
Quotation Inspector.....	65
The Code Manager.....	65
Overview.....	65

Opening the Code Manager.....	66
Main Window.....	66
Adding Code Color.....	66
Reviewing Coded Quotations.....	67
Adding and Deleting Codes.....	67
The Grouped By Option.....	68
Side Panel.....	68
Filtering Codes By Code Groups.....	69
Creating New Code Groups.....	69
Code Inspector.....	69
Code List Import & Export.....	70
Importing A List of Codes.....	70
Exporting The List Of Codes.....	71
Code Tree And Code Forest.....	71
Building A Code Hierarchy.....	74
Auto-Coding.....	75
Regular Expressions (GREP).....	76
Focus Group Coding.....	77
Guidelines For Preparing Focus Group Data.....	78
Coding Focus Group Data.....	79
Working With Memos.....	81
Overview.....	81
Difference Between Memos And Codes.....	82
How Memos And Comments Differ.....	82
Creating A New Memo.....	82
Loading Memos.....	82
The Memo Manager.....	83
Overview.....	83
Opening The Memo Manager.....	83
Main Window.....	84
Adding and Deleting Memos.....	84
The Grouped By Option.....	84
Side Panel.....	84
Filtering Memos By Memo Groups.....	84
Creating New Memo Groups.....	85
Memo Inspector.....	85
Working With Survey Data.....	85
Overview.....	85
How Survey Data Is Treated In ATLAS.ti.....	86
Preparing An Excel™ Table For Import.....	86
How To Import Survey Data.....	87
Analyzing Survey Data.....	88
Working With Multimedia Data.....	88
Linking Multimedia Data to A Project.....	88
Display Of Multimedia Documents.....	89
Multimedia Toolbar.....	90
Navigation Using The Arrow Keys.....	90
Creating Multimedia Quotations In the Margin Area.....	91
Creating Multimedia Quotations While Listening / Watching.....	91
Adjusting the Size of Multimedia Quotations.....	91
Display Of Multimedia Quotations.....	91
Coding Multimedia Documents.....	92
Describing Multimedia Quotations To Improve Output.....	92
Working With Geo Documents.....	93
Geo Data As Primary Documents.....	93

Finding A Location.....	94
Creating Geo Quotations.....	95
Coding Geo Quotations.....	95
Display of Geo Quotations.....	95
Activating Geo Quotations.....	96
Moving A Geo quotation.....	96
Creating A Snapshot.....	96
Browsing Geo Locations in Google Maps.....	96
Importing Twitter Data.....	97
Inspecting Imported Twitter Data.....	98
Working with Groups.....	100
Overview.....	100
Purpose of Creating and Working with Groups.....	100
Common Procedures.....	101
Creating Groups In the Side Panel.....	101
Filtering By Group In A Manager.....	101
Removing An Item From A Group.....	101
The Group Manager.....	102
Filtering The List of Groups.....	103
Working With Smart Groups.....	104
Working with Hyperlinks.....	106
Overview.....	106
What Codes Cannot Do.....	107
Graphical Hyperlink Maps.....	107
Creating Hyperlinks.....	108
Modifying Hyperlink Relations.....	109
Traversing Hyperlinks.....	111
Finding Redundant Codings.....	111
Inter-coder Agreement (ICA).....	112
Introduction - Please Read!.....	112
Why Call It Inter-coder Agreement Rather Than Inter-coder Reliability?.....	113
Why Reliability Matters.....	113
Reliability And Validity.....	114
Requirements For Coding.....	114
Measuring Inter-coder Agreement.....	116
Methods For Testing ICA.....	117
Decision Rules.....	119
How To Calculate Inter-coder Agreement.....	120
Exporting Results.....	123
Tools For Basic And Advanced Analysis.....	124
Overview.....	124
Available Operators For Creating Queries.....	125
Boolean Operators.....	125
Semantic Operators.....	125
Proximity Operators.....	126
Simple Quotation Retrieval.....	128
Quotation Retrieval in the Code Manager.....	128
Quotation Retrieval In The Quotation Manager.....	129
Simple Boolean Queries In The Quotation Manager.....	130
Complex Quotation Retrieval (Query Tool).....	131
Building A Query In The Quotation Manager.....	131
Creating Queries in Managers.....	138
How To start.....	138
Document Queries.....	139
Code Queries.....	140
Memo Queries.....	141
Working With Smart Codes.....	142

Overview.....	142
Creating Smart Codes.....	143
Code Co-Occurrence Tools.....	147
Code Co-Occurrence Table.....	149
The C-Coefficient.....	150
Code Document Table.....	152
Working With Global Filters.....	155
Overview.....	155
Creating A Global Filter.....	155
Setting Global Filters.....	155
Display of Global Filters.....	156
Global Filters In Combination With The Code-Cooccurrence Table.....	157
Global Filters In Combination With The Code-Document Table.....	158
Activating / Deactivating Global Filters.....	159
Removing A Global Filter.....	159
Working With Networks.....	159
Overview.....	159
Link vs. Relation.....	160
The Role of Relations.....	160
The Network Editor.....	161
Network Characteristics.....	161
Node Types.....	161
Creating A New Network.....	162
Defining New Code-Code Relations.....	165
The Code-Code Link Manager.....	165
The Network Manager.....	166
Network Actions.....	166
Analytic Functions In Networks.....	169
Data And Project Export.....	171
Overview.....	171
Exporting Documents.....	171
Export As Report (Word/PDF).....	171
Export As Table (Excel).....	175
Exporting The Project In XML Format.....	175
Export Documents With Codes.....	177
Export Networks.....	177
Export Project.....	177
SPSS Export.....	178
Cases & Variables.....	178
SPSS Syntax File.....	178
Scaled vs. Dichotomous Codes.....	179
Naming Convention For Scaled Codes.....	180
How SPSS Export Handles Groups.....	180
Creating SPSS Output.....	180
Margin Area.....	182
Display Of Entities In The Margin Area.....	182
Margin Drag-And-Drop.....	182
Appendix.....	184
Zooming.....	184
Useful Resources.....	184
Get In Touch.....	186
Service Packs & Patches – Live Update.....	186

About This Manual

Basics

This User Guide is written for users with no prior experience of working with ATLAS.ti, but also for Windows users new to the Mac version.

Please note that the Windows and the Mac versions are not 100% identical. This is partly owed to the specifics of their native platforms, and partly intended as a vehicle for continuous mutual improvement. We recommend that you consult the "[Feature Matrix](#)" for a direct comparison.

In developing ATLAS.ti Mac, our foremost aim was to create a native Mac software for qualitative data analysis in which "native Mac users" feel at home.

ATLAS.ti 8 requires mac OS 10.10 or higher.

This document is largely of a technical nature. You should not expect any detailed discussion of methodological aspects of qualitative research other than cursory statements from this manual. To those seeking in-depth instruction on methodological aspects, the ATLAS.ti Training Center offers a full complement of dedicated ATLAS.ti training events worldwide, both through online courses and face-to-face seminars. Visit the Training Center at <http://training.atlasti.com>.

Conventions In this Manual

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.

Important

This paragraph contains important information, something you should be aware of.

Instruction

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

Additional Reading

This paragraph offers info on additional resources on- and offline.

Useful Resources to help you Get Started

- **System requirements and installation instructions** can be found [here](#).
- Download **Whats' New in ATLAS.ti 8 Windows** [here](#).
- **Getting Started – the ATLAS.ti Mac Quick Tour**. [Download here](#).
- **Video tutorials** in English and Spanish can be found on our [YouTube channel](#).
- Free introductory **online webinars** [here](#).

Margin notes:

Margin notes contain important observations of a general nature.

Introduction

What is ATLAS.ti

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 entities accumulated during the process of eliciting meaning and structure from the analyzed data.

The *entity-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.

Serendipity

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

The term "serendipity" can be equated with an intuitive approach to data. A typical operation that relies on the serendipity effect is *browsing*. This information-seeking method is a genuinely 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 entity Managers, the HU 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>.

The fundamental design entity 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

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.

Team project management is described as part of the full manual. You do however also find smaller How-To-Manuals just on team work. Click [here](#) to download.

The Knowledge Workbench

Creative Analysis

The image of our software as a "knowledge workbench" is more than just a lively analogy. Analytical work involves tangible elements: research material requires piecework, assembly, reworking, complex layouts, and some special "tooling." A well-stocked workbench provides you with the necessary instruments to thoroughly analyze and evaluate, search and query your data, to capture, visualize and share your findings.

Your typical project deals with sifting through large sets of diverse documents, notes, and multi-media files, and examining and comparing such sources regarding a specific line of inquiry.

While the technical side of selecting, and organizing useful portions of your data might seem manageable when dealing with just a handful of source documents, it can tend to become overwhelming as the number of sources mount.

Enter a specialized software package like ATLAS.ti: It lets you extract, categorize, and interlink data segments from a large variety and volume of source documents. Based on your analysis, the software supports you in discovering patterns and testing hypotheses. With numerous output options and collaboration tools, your analysis is easily accessible to yourself and others.

Some Basic Terms

To understand how ATLAS.ti handles data, visualize your entire project as an intelligent "container" that keeps track of all your data. This container is your ATLAS.ti **project**.

The project keeps track of the paths to your source data and stores the codes, code groups, networks, etc. that you develop during your work. Your **source data** files are copied and stored in a repository. The standard option is for ATLAS.ti to manage the documents for you in its internal database. If you work with larger audio or video files, they can be linked "externally" to your project to preserve disk space. All files that you assign to the project (except those externally linked) are **copied**, i.e., a duplicate is made for ATLAS.ti's exclusive use. Your original files remain intact and untouched in their original location.

Your source data can consist of **text documents** (such as interviews, articles, reports); **images** (photos, screen shots, diagrams), **audio recordings** (interviews, broadcasts, music), **video clips** (audiovisual material), **PDF files** (papers, brochures, reports), and even **geo data** (locative data using Open Street Map).

Once your various documents are added or linked to an ATLAS.ti project, your real work can begin. Most commonly, early project stages involve **coding** different data sources.

Coding is the basic activity you engage in when using ATLAS.ti and is the basis of everything else you will do. In practical terms, coding refers to the process of assigning categories, concepts, or "codes" to segments of information that are of interest to your research entities. We have modeled this function to correspond with the time-honored practice of **marking** (underlining or highlighting) and **annotating** text passages in a book or other documents.

In its central conceptual underpinnings, ATLAS.ti has drawn deliberately from what might be called the "paper and pencil paradigm." The user interface is designed accordingly, and many of its processes are based on—and thus can be better understood by—this analogy.

Because of this highly intuitive design principle, you will quickly come to appreciate the **margin area** as one of your most central and preferred work space—even though ATLAS.ti almost always offers a variety of ways to accomplish any given task.

General Steps when Working with ATLAS.ti

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

- 1. Create a project, an "idea container," meant to enclose your data, all your findings, codes, memos, and structures under a single name. See "Creating A New Project"
- 2. Next, add documents, text, graphic, audio and video files, or Geo documents to your ATLAS.ti project. See "Adding Documents To A Project", and organize your documents into groups. See "Working with Groups."
- 3. 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 (see "Exploring Your Data", "Working With Quotations", "Coding Data" and "Working With Memos") that contain your thinking about the data. Build a coding system. See "Building A Code Hierarchy."

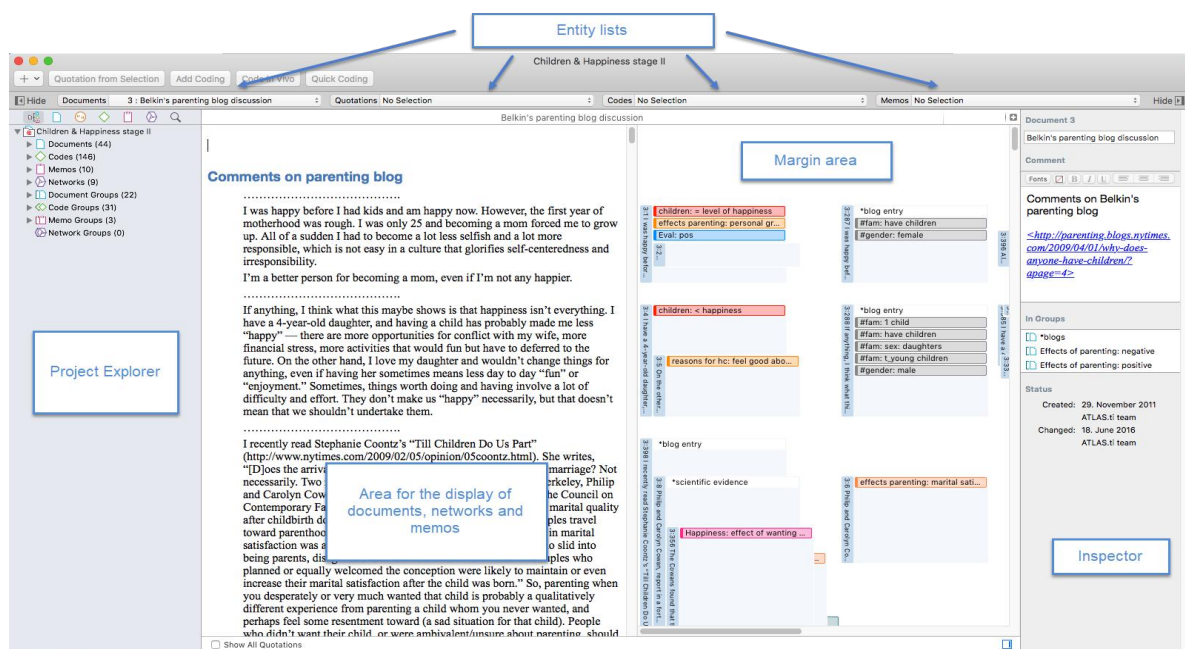


Figure 1: ATLAS.ti Mac Interface

- Compare data segments based on the codes you have assigned; possibly add more data files to the project. See for example "Simple Quotation Retrieval", and "Code Queries"
- Query the data based on your research questions utilizing the different tools ATLAS.ti provides. Coded data segments can be retrieved in various ways: "See "Complex Quotation Retrieval (Query Tool)". The Code Co-occurrence Table and the Code-Document Table give you a quantitative overview of quotation frequency by documents and code-code relations (see "Code Co-Occurrence Tools", and "Code Document Table").
- 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. See "Working With Networks."
- 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. See "Data And Project Export."

■ For additional reading about working with ATLAS.ti, see [The ATLAS.ti Research Blog](#) and [The ATLAS.ti conference proceedings](#).

Main Concepts and Features

Overview

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 groups, networks (=the main visualization tool), and analytical/data querying tools. All of these come together in the overall "project container," the ATLAS.ti project bundle file. Acquaint yourself with this general "container" concept and its implications. Once you understand the concept, you understand almost everything that is necessary to work with ATLAS.ti.

Everything that is relevant to a particular project (e. g., a research topic) is part of your ATLAS.ti project and resides in the digital domain. For instance, the data you are analyzing, the quotations, the codes, the conceptual linkages (groups, networks), and comments and memos, are all part of it. One obvious advantage of this container concept is that as user you only have to deal with and think of one entity. Activating the ATLAS.ti project is the straightforward selection of a single file; all associated material is then activated automatically.

■ See also the following video: [ATLAS.ti Mac Overview](#)

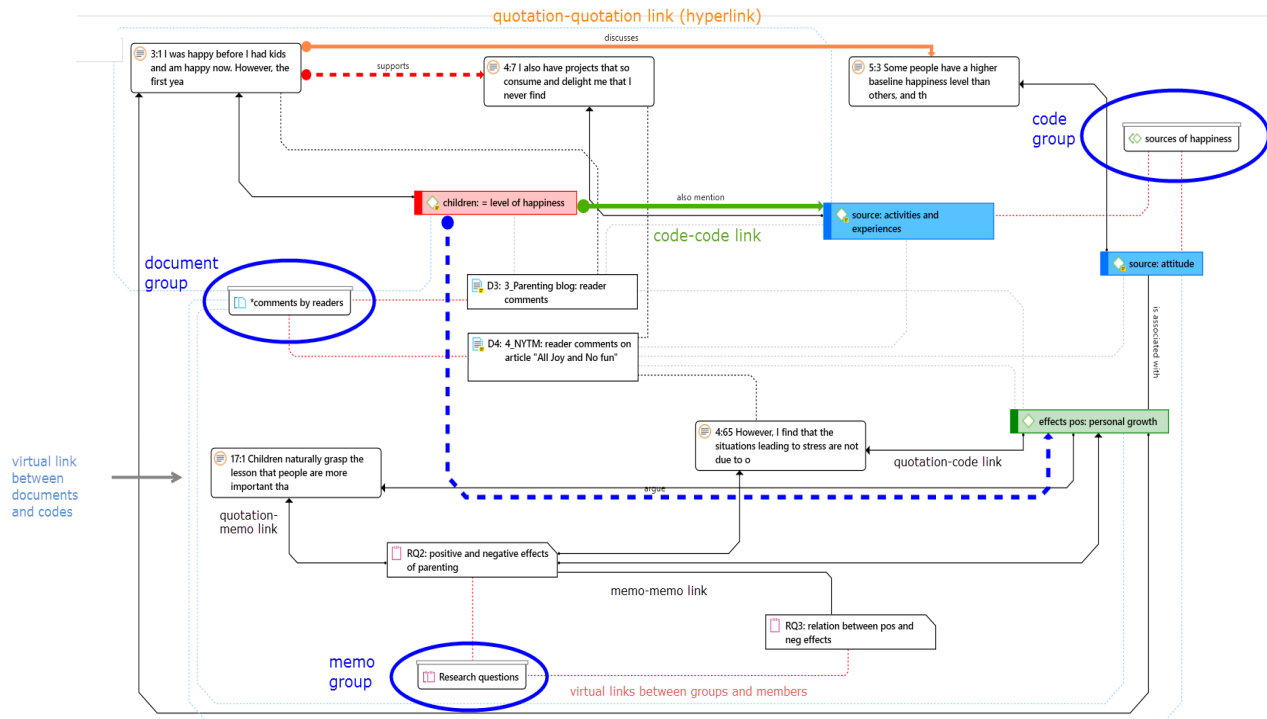


Figure 2: Possible linkages between ATLAS.ti entities

The most basic level of an ATLAS.ti project consists of the documents you are analyzing, followed closely by the "quotations" (= selections from these document). On the next level, codes refer to quotations. And comments and memos - you meet them everywhere. Your ATLAS.ti project 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.

All entity types that make up the ATLAS.ti project are explained below.

Documents

Documents represent the data you have added to an ATLAS.ti project. These can be text, image, audio, video or geographic materials that you wish to interpret. When you add documents to an ATLAS.ti project, ATLAS.ti creates copies of these documents. Thus, your original documents do not become part of the project.

Document Groups (Data Attributes)

Documents can be grouped by any criteria that you need for your analysis. For instance, you might want to group them by gender: male and female, by age groups, education, family status, geographical region, document type, time aspects, etc. Such groups can later be 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 rural areas."

You can also use document groups as a filter, for example to reduce other types of output, such as a frequency count for codes across a particular group of documents.

This is explained in more detail in the section "Working with Groups" and "Working With Global Filters."

Quotations

A quotation is a segment/portion of a document that is deemed interesting or important by the user. Think of it as something you would mark, circle, or underline in a printed document.

In textual documents, a quotation is an arbitrary sequence of characters ranging in length from a single character to a word, a sentence, or a paragraph, even up to the entire data file. In an image, it can be any portion of the image; in an audio or video clip a segment of a certain length, etc.; more on that below.

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

Usually, quotations are created manually by the researcher. However, if repetitive words or phrases are contained in the text, the Auto-Coding tool can be used to automatically segment these quotations and assign a code to them (see "Error: Reference source not found").

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 data for which a meaningful classification has not yet been found. Each quotation name can be renamed. Thus an approach could also be to rename a quote instead of attaching a code label that only describes a data segment and cannot be applied anywhere else because it is too specific. Attaching code labels at this level of analysis can result in a very long and difficult to manage code list. [Additional Reading.](#)

Quotations as Layers

Quotations can be thought of as 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 that describe its position in the document. The actual content of the data you analyze is therefore not altered by the creation, deletion, or modification of quotations.

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

Types of Quotations

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

TEXT QUOTATIONS

A textual quotation consists of 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.

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 document. From its data structure, it is identical to textual quotations, since their main attributes are also the document number 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.

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: (start=1537 end=1745 page=1) means that this quotation is from page 1, starting at character 1537 and ending at character 1745. The reference for coded images indicates the position of the quotation within the PDF file in the following way: x=29 y=601 width=381 height=153.

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 format:

```
start=04:04.50 duration=00:01.61 (hh:mm:ss:ms)
```

GEO QUOTATIONS

When creating a Geo quotation, you see the ATLAS.ti icon on an Open Street 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 the name of the document. In addition the geographic reference of the marked location is provided.

■ See "Working With Geo Documents."

More detail on how to work with quotation can be found in the section "Working With Quotations"

Coding entities

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.

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"). You can think of coding as similar to tagging.

Keep code names brief and succinct. Use their 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.

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 Data".

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. From simple string matching to sophisticated pattern match (GREGP) and keyword in context searches, all is available in the Auto Coding Tool. If so desired, the process can be controlled by manual confirmation of each action.

■ The process is described in the section "Auto-Coding".

Memos

Memos capture your thoughts regarding the text and are an important device for creating theory. 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. As compared to comments, memos can be linked to quotations, codes or other memos. A comment is always directly linked to the entity it refers to. In ATLAS.ti Mac, it is also possible to write a comment for each memo in addition to the memo content itself.

■ See "Working With Memos".

Groups

Groups are a way to form clusters of documents, codes, and memos for easier handling (see "Working with Groups." Document groups can be regarded as attributes or variables. Groups can be combined using logical operators. These are called Smart Groups (see "Working With Smart Groups").

Networks

Networks are a bit more sophisticated than groups. They allow you to conceptualize the structure by connecting sets of similar elements together in a visual diagram. With the aid of networks you can express relationships between codes, quotations, and memos. Document groups and even networks can also be "nodes" in a network. See "Working With Networks."

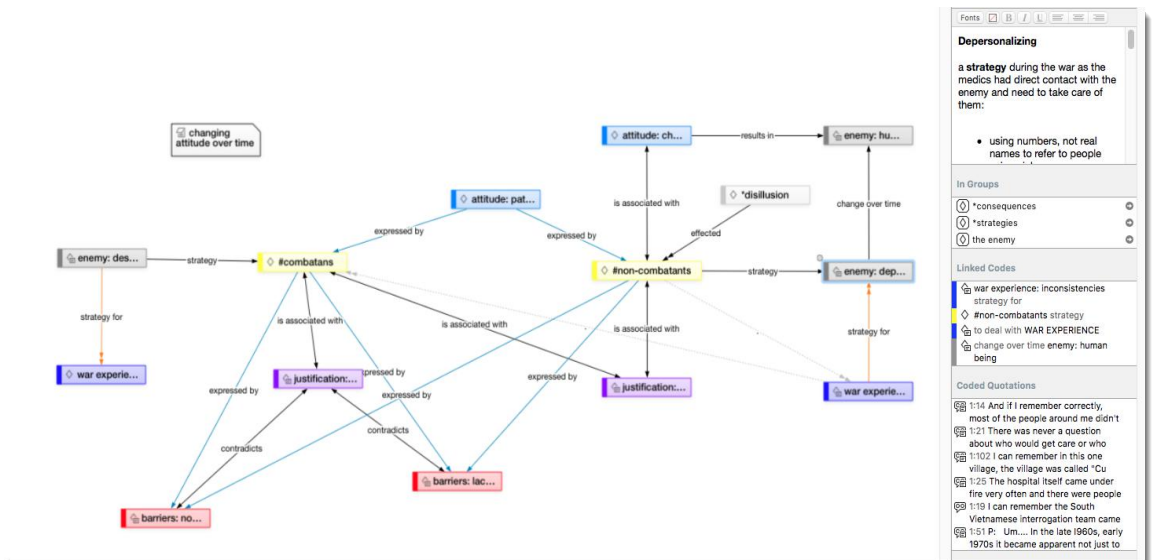


Figure 3: Example of a network with Inspector

NODES, LINKS AND RELATIONS

A node is any entity that is displayed in a network. 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 MANAGER

The network Manager contains a list of all saved networks previously constructed by the user. It can be used to create new networks, 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 entities in networks 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.

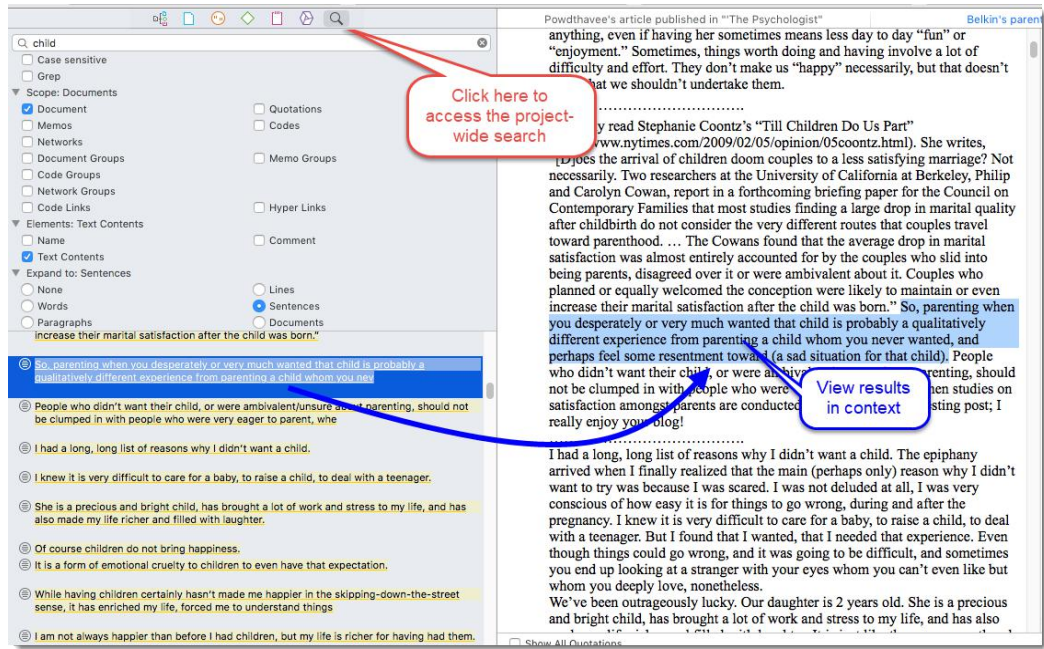


Figure 4: Project-wide search

Project Search

Use the project wide search to search for words, sentences, expressions in your entire project. The search can be restricted to any of the entities like documents, codes, quotations, memo, comments, groups, etc. The reports show the search term with surrounding context. In addition it is possible to access each hit within the context of the project. You can access the project-wide search in the navigator by clicking on the search icon (see Figure 4).

Analysis

ATLAS.ti contains multiple powerful, dedicated analytic tool to help to make sense of your data once it is coded.

Building queries

For more complex search requests, a large number of query options are available in all managers. You can build queries based on entity attributes like "text content," "has comments," "has memos" or "has hyperlinks," or based on code queries using Boolean, semantic, and proximity operators. All of these can also be combined.

Smart Codes

A Smart Code differs from a standard code in the following way: A standard code is directly linked with the quotations to which it is associated, while a Smart Code is a stored query, thus provides an answer to a question (in the best case) that typically consists of several combined codes. For further information.

See "Working With Smart Codes ."

Smart Groups

Smart groups are a combination of groups. For instance if want to compare answers of female respondents from rural areas with female respondents from urban areas, you would create two smart groups that you either use directly in a Code-Document Table, or as filter in a code query. Smart code groups can be used if you frequently need a combination of certain codes. See ""

Cross-Tabulation of Codes (Code Co-occurrence)

The Co-occurrence Explorer and Table show where you have applied codes in an overlapping manner. Rather than determining the codes yourself, you can ask ATLAS.ti which codes overlap. The output can be viewed in form of a tree view or a table. The table provides a frequency count of the number of cooccurrences and a coefficient measuring the strength of the

relation. Since a coefficient is only appropriate for some type of data, its display can be activated or deactivated. It is also possible to directly access the data of each cooccurrence.

■ See "Code Co-Occurrence Tools."

Code Document Table

The Code Document Table displays absolute and relative frequencies of codes or code groups by documents or document group. You can also chose to display word counts of quotations rather than absolute quotation frequency. The table can be exported as Excel table.

■ See "Code Document Table".

Export

Each manager features an **EXPORT** button. You can select between creating a table in Excel format or a report in Word / Open Office, or PDF format. In addition, the quantitative results of the Code Cooccurrence Table, the Code Document Table, and the Word Cruncher can be exported to Excel.

■ See "Data And Project Export" for more information.

Team Tools

Team work is a normal scenario in data analysis, and ATLAS.ti is uniquely suited for collaborative work. A number of special tools and features support efficient work in a team.

■ For further information see "Setting Up A Team Project" and "Inter-coder Agreement (ICA)".

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 log-in. User Management options can be found under the Tools menu.

■ See "Creating User Accounts for more information.

Project Merger

This tool merges different projects. You find this function under the Project menu.

■ See "The Merge Tool reunites projects that were originally divided for analytical or economical reasons. It brings together the contributions of different members of a research team. In the following a few general principles about merging are explained:".

Inter-coder Agreement

ATLAS.ti allows for a qualitative and quantitative comparison of the codings of various coders. If you are interested in calculating a coefficient, ATLAS.ti offers the following: percent agreement, Holsti, Krippendorff'S binary alpha, and Krippendorff's cu and Cu-alpha. See "Inter-coder Agreement (ICA)".

Please note that *synchronous* work is no supported. Each team member works in his or her own project file and these files need to be merged from time to time.

Installing And Updating ATLAS.ti Mac

Installing ATLAS.ti Mac

Please note, version 8.1 and higher requires mac OS 10.10 or higher.

- After downloading ATLAS.ti Mac, look for the file 'ATLAS.ti Mac.dmg' using Finder. It is likely in your download folder.
 - Double-click the file. You will see the red icon for the ATLAS.ti app.
 - Drag the red program icon into the application folder. Start ATLAS.ti from there.
- If you drag the program icon from the application folder to your desktop, this will create a short-cut.

■ [Video tutorial: Installing ATLAS.ti Mac.](#)

Installing Updates

- From the main menu select: **ATLAS.TI / CHECK FOR UPDATES**. Follow the instructions you see on-screen.

■ [Video tutorial: Downloading Updates](#)

Troubleshooting

Updating does not work for you? A likely reason is that the ATLAS.ti app is not in the Applications folder.

- Go to Finder and search for ATLAS.ti
- Once you find it, double-click on it. You will see the red icon for the ATLAS.ti app.
- Drag the red program icon into the Applications folder.
- Open ATLAS.ti from the Applications folder.
- Now, try again to update.

We strongly recommend keeping ATLAS.ti updated to the latest service pack at all times. Check for updates regularly to avoid problems and to obtain the latest available tools and functions.

Main Steps In Working With ATLAS.ti

Overview

■ [Video tutorial: ATLAS.ti Mac: An Overview](#)

Figure 5 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 function.

Some steps must be taken in sequence. For instance, logic dictates that you cannot query anything or look for cooccurrences if your data has not yet been coded. But other than that there are no strict rules. networks, 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.

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.

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 work space 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.

General Steps When Working With ATLAS.ti

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

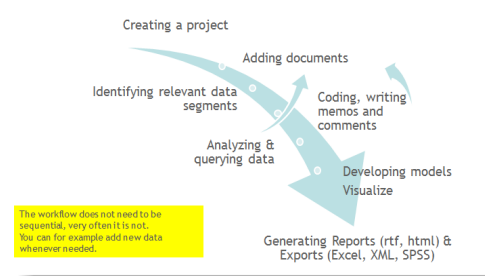


Figure 5: Main work flow

- Create a project (think of it as your "idea container"), meant to enclose your data, all your findings, codes, memos, and structures under a single name.
- Next, add documents, text, graphic, audio and video files, to your ATLAS.ti project.
- Organize documents, codes, and memos using "groups" (see "Working with Groups")
- 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. The Word Cruncher and auto coding tool can help you to find interesting sections in text documents. We call this the data level working phase.

- Compare data segments based on the codes you have assigned; possibly add more data files to the project.
- Query the data based on your research questions utilizing the different tools ATLAS.ti provides. The key words to look for are: Simple Retrieval, Code Cooccurrence, Codes Documents Table, Smart Codes, and Building Queries. See "Tools For Basic And Advanced Analysis."
- 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 "Working With Networks."
- 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.

The Interface

Overview

Below you see the main features of the ATLAS.ti Mac interface:

■ Video Tutorial: [ATLAS.ti Mac: Interface](#)

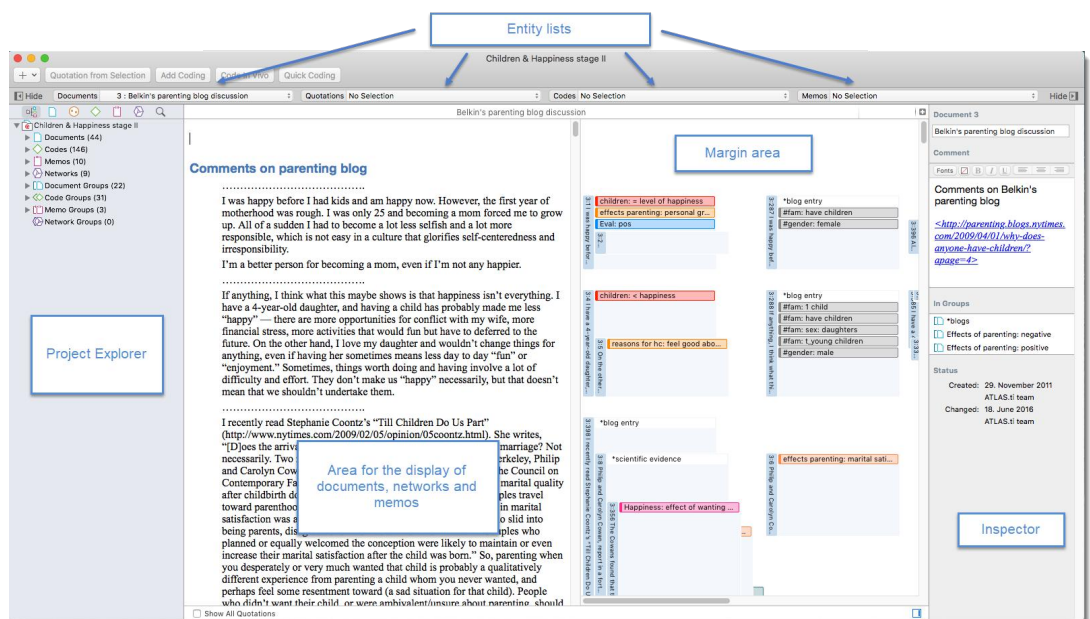


Figure 6: The ATLAS.ti Mac user interface

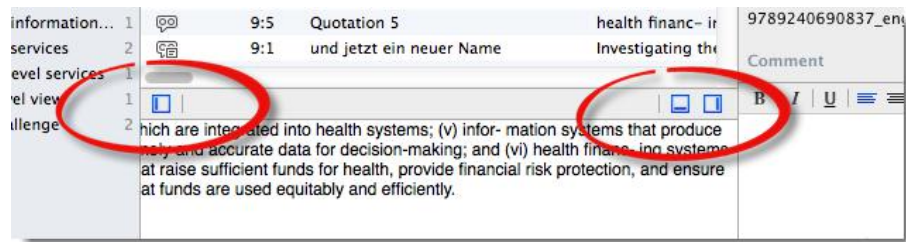


Figure 7: Hide or show optional panes

The different types of entities are represented by these symbols:

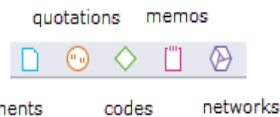


Figure 8: Entity representation



Personalize Your Screen

A number of panes that you see in the default interface view can be hidden (e. g., the navigator or the inspector). If hiding is possible, you see a little icon or a text "Hide" / "Show" that you can click.

Finding Your Way Around The Software

If you are not sure where to find a function, just search for it under **HELP**. For instance you want to know where the Relation Manager is. Typing in the first letters of a search term, shows a list of hits.

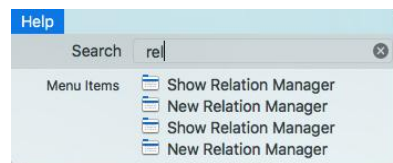


Figure 9: Finding menu options

When selecting an entry that seems to be the one that you are looking for, it will show you where you can find it. Click on the selected hit in the list, and ATLAS.ti Mac will open up the function for you.

Project Explorer

Overview

The ATLAS.ti Project Explorer provides a tree view of all entities in your project and their links. More specific views are provided by the Code Forest and Code Tree, see "Code Tree And Code Forest".

The main purpose of the Project Explorer is to serve as a hierarchical content table, which may be used to navigate between the different parts of your project. Unlike the "pure" entity Managers that display only one type of entity, the Project Explorer allows an integrated and structured display of all heterogeneous entities that make up an ATLAS.ti project. These are: documents, quotations, codes including smart codes, memos, groups including smart groups, 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 document. As documents can also be members of document groups, their quotations appear there as well.

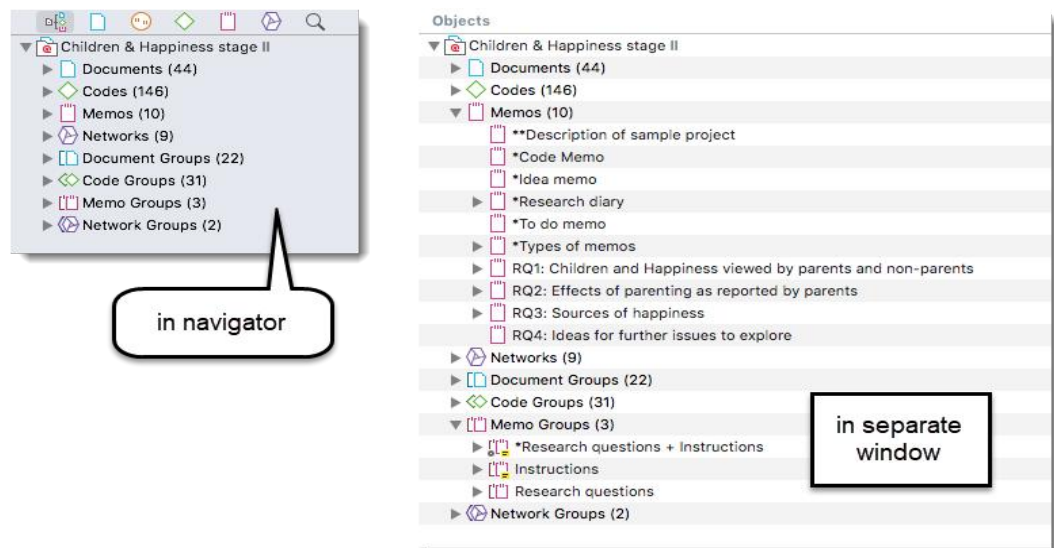


Figure 10: Project Explorer in navigator and as separate tool

The Project Explorer is displayed by default in the navigation area on the left-hand side of the screen, and can be launched in a separate window from the main menu by selecting **TOOLS / PROJECT EXPLORER**:

You can expand and collapse the branches of the Project Explorer tree. If a branch can be expanded, an arrow is displayed to the left of the entity. Expanded branches are indicated by a down arrow. You can expand or collapse a branch with a mouse click on the arrows. Below a partly expanded branch for a memo is shown.

Expanding the **Documents** branch displays the documents; 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. See "Working With Networks" for further detail.

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 sub branches if they are linked to other codes. The order in the branch and sub branches is determined by the kind of relation you have used. If a directed, i. e. a transitive relation like the <is a> 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).

When using symmetric relations, the codes appear in at least two places since the direction/causal relation cannot be determined. See "Why Symmetric And Asymmetric Relations Cannot Be Used In A Hierarchical Code System" on page 72 for further information.

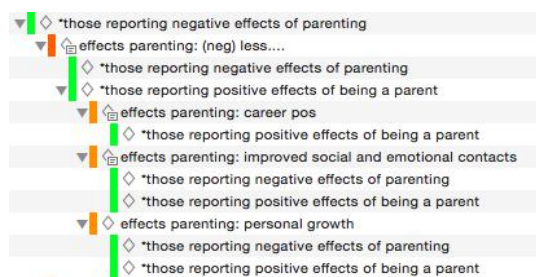


Figure 11: Code Branch: some codes linked via symmetric relations

Memos linked to codes are displayed under the code branch as well.

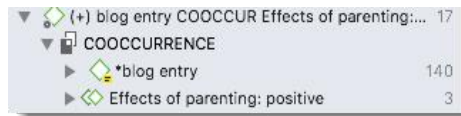


Figure 12: Expanded branch of a smart code in the Project Explorer

Expanding **Smart Codes** allows access to the various parts of a query. Below you can see the expanded branch for the Smart Code "(+) blog entry COOCCUR Effects of parenting: positive" (see figure Figure 12). See "Working With Smart Codes " for further detail.

Expanding the **Memos** branch displays all memos and then the memos associated with other memos. On the next level, all associated codes or quotations are shown.

When expanding the **Group** branches, on the first level all existing groups are shown. On the next level, all members are displayed. Below the members, all entities that are usually associated with the type of entity can be expanded (i. e., as described above: quotations underneath documents, codes connected to other codes, and so on).

In case you have created **Smart Groups**, the operators of the query are also shown. When expanding the branch of a group that is part of the query, the corresponding group members are shown.

Expanding the **Network Views** branch shows the existing networks on the first level, and all entities contained in the Network Views on the next level. On the levels below, all other linked entities are displayed.

All codes displayed in the Project Explorer can be used for drag & drop coding. Documents, codes, and memos can be dragged onto a group name in the Group Managers and are assigned to the group.



Project Explorer Actions

Double-click Actions

- When double-clicking on a main branch, the corresponding manager opens.
- When double-clicking on a document, it is loaded
- 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.

Context menus of entities

Each entity in the Project Explorer has a secondary menu. These menus can be accessed in the usual manner with a right mouse click. This selects the entity, if not already selected, and opens the secondary menu, which offers a few selected entity-specific operations.

Displaying and Editing Comments

To edit an entity's comment,

- Select an entity and edit the comment that is displayed in the inspector.

Creating A New Project

- [Video tutorial: Creating a new project](#)

When you open ATLAS.ti Mac for the first time, you are presented with two options: Create a new project, or import an existing one from other ATLAS.ti applications.

Select **CREATE A NEW ATLAS.TI PROJECT** and enter a project name:

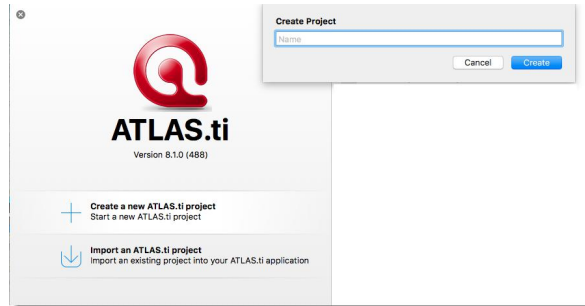


Figure 13: Creating a new project

- Another option is to select: **PROJECT / NEW** from the main menu.

Importing Projects From ATLAS.ti 7 Windows

- Update your ATLAS.ti 7 Windows to version 7.5.18 or higher.
- Export your project(s) via **PROJECT / EXPORT / MAC TRANSFER BUNDLE**.
- Move the Transfer Bundle file to your Mac or to a location where it can be accessed from your Mac.
- On the Mac, simply double-click on the exported file, or select **PROJECT / IMPORT PROJECT...**
- Export your project(s) selecting **FILE / EXPORT**. Create a project bundle file.
- Move the Project Bundle file to your Mac or to a location where it can be accessed from your Mac.
- On the Mac, simply double-click on the exported file, or select **PROJECT / IMPORT PROJECT...**
- Video tutorial:** [ATLAS.ti Mac-Transfer Project From ATLAS.ti 7 Win](#)

Importing Projects From ATLAS.ti 8 Windows

- Both on the exporting and on the importing computer, update ATLAS.ti to the latest available service pack.
- Export your project(s) selecting **FILE / EXPORT**. Create a project bundle file.
- Move the Project Bundle file to your Mac or to a location where it can be accessed from your Mac.
- On the Mac, simply double-click on the exported file, or select **PROJECT / IMPORT PROJECT...**
- Video tutorial:** [ATLAS.ti 8 Windows-Exporting the Project](#)

Importing ATLAS.ti Mobile Projects (iPad & Android)

- In your ATLAS.ti iPad or Android app, select a project and tap the **EXPORT** button.
- On your Mac, select **PROJECT / IMPORT PROJECT**.

Project Management

Exporting Projects From Mac To Windows

- Select **PROJECT / EXPORT PROJECT**. Save the file to your hard disk, an external or a cloud drive.
- Open ATLAS.ti 8 for Windows and Select the option **IMPORT PROJECT BUNDLE**. If ATLAS.ti 8 is already open, select **FILE / NEW / IMPORT PROJECT BUNDLE**.

Project Transfer & Backup

In order to transfer a project to a different computer, you have to export it. You also need to export a project when you want to merge it with another project. The exported project also serves a backup.

The same procedure applies, when you want to transfer a project to ATLAS.ti 8 for Windows.

- Select **PROJECT / EXPORT PROJECT**. Save the file to your hard disk, an external or a cloud drive.
- You can open the project by double-clicking on the file (assuming that ATLAS.ti Mac is installed on this computer), or select **PROJECT / IMPORT PROJECT** from the main menu.

Project Duplication

- Select **PROJECT / OPEN**.
- Select a project and right click on the project name. Select the option: **DUPLICATE**.

The project that you want to duplicate must be closed.

Password Protection

Under the Project menu, you find an option to set a password for your project, or to delete it.

- To set a password, select **PROJECT / CHANGE PASSWORD**.

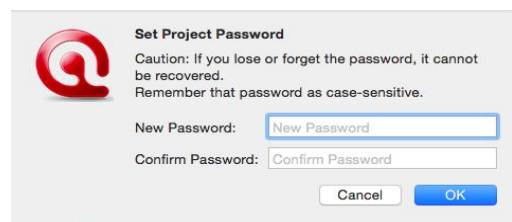


Figure 14: Set project password dialogue

As stated in the dialogue, a password cannot be recovered – also not by our technical team! (If it could, your project could also be hacked by someone else.) Thus, you must make sure not to forget the password. Store it in a secure place.

- To remove a password from your project, select **PROJECT / DELETE PASSWORD**.

Creating User Accounts

When you first opened ATLAS.ti, you were asked to add a user name. This name will be used to stamp all project entries.

- If you want to check under which name you are working, select the main menu option **TOOLS / USER MANAGEMENT / CHANGE USER**.
- If you want to create a new user account, select **SHOW USER MANAGEMENT**. Next, click on the **PLUS** button to add a new user.
- To log in with the new user name, select **TOOLS / USER MANAGEMENT / CHANGE USER**.

Where Is Your Project Stored?

ATLAS.ti saves all project data within its own ATLAS.ti environment. You can find all ATLAS.ti data under:

`~/Library/Application Support/ATLAS.ti.`

If for some reason, you cannot store data at the default location, you can move the library to a different location or you can create one or more new libraries (see below).

The ATLAS.ti library is a system folder and not meant for user access. Files in this folder cannot be used outside ATLAS.ti.

Changing the Default Location for ATLAS.ti Project Data

The default location for ATLAS.ti project files is on your Macintosh HD. As it is not possible for all users to store data at this location, either because there are institutional restrictions, or the drive is already full and there is not sufficient space, you can create a user-defined location where all of your ATLAS.ti data is stored.

Project libraries cannot be shared. Each user works within her or his own ATLAS.ti environment.

In ATLAS.ti 8, each user works within her or his own ATLAS.ti environment. You have the possibility to define where this ATLAS.ti environment is located. This location can be within another folder on the hard disk, any other drive on your computer, a server, or an external drive. It is not possible to use a cloud sharing service like Dropbox because this might jeopardize the integrity of your ATLAS.ti projects!

It is possible to work with multiple libraries. Potentially, you could create a new empty library every time you start a new project. This however requires careful data management on your part, as you need to keep track on your own where all of these different libraries are located.

We strongly recommend that you create project backups on a regular basis by exporting your projects (see "Project Transfer & Backup").

How To Change The Default Location

- Select **ATLAS.ti / SWITCH LIBRARY**.

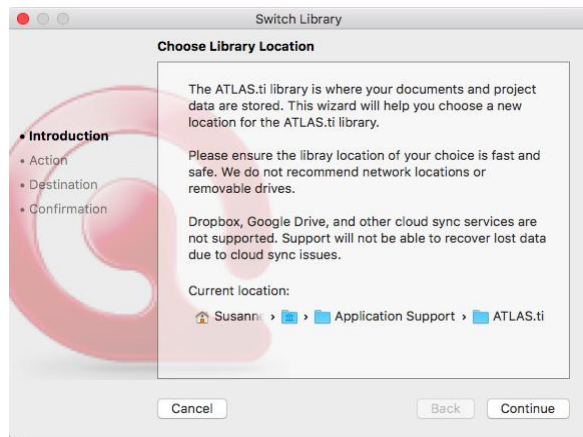


Figure 15: Starting the Switch Library procedure

The next choice you need to make is whether you want to open an existing library, move the library to a different location, or create a new empty library.

Open an existing library: Choose this option if you work with multiple libraries and you want to gain access to an already existing library at a different location.

Move the library to a different location: Choose this option if you want or need to move your current library to a different location, e.g. because you do no longer want to work on the C drive. It is possible to keep a copy of the library at the old location.

Note that the ATLAS.ti 8 library contains all of your documents *plus* your project files. This is different from version 7, where only the project documents were stored in the library and the user saved the project file (HU) independently. In version 8, ATLAS.ti handles and manages **all** of your project related data in the library.

Create a new empty library: This option allows you to create a new library at a location of your choice. If you already have projects, none of these will be moved over into the new library. To fill this library, you either create new projects from scratch, or you import project bundle files that you previously exported from other libraries.

After you have made your choice, click **CONTINUE**.

- If you selected to **move the library**, select the location where you want this library to be. You can keep a copy of the actual state of the library at the current location. Just keep in mind that this copy is not updated if you continue your work using the library at the new location.

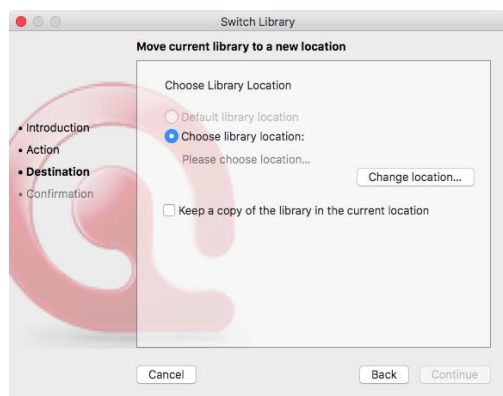


Figure 16: Move current library to a new location

- The option **open an existing library** is useful if you previously have created a library at a different location and want to access the projects contained in this library, or if you want to change back to the default library. The option "Default library location" is only active, if you currently use a user-defined library.

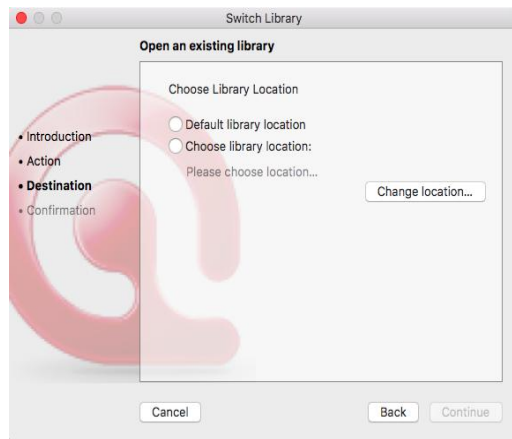


Figure 17: Open an existing library

- If you selected to **create a new empty library**, select where this new library is to be created. After confirming the new location, your opening screen will be empty and you can begin to fill it with new projects.

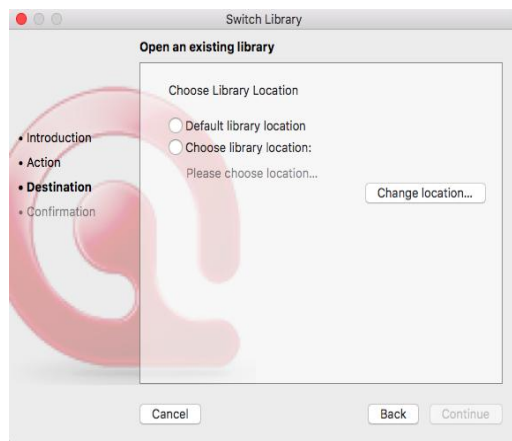


Figure 18: Open an existing library

A word from the HelpDesk: We know that your project data is very valuable to you and that you do not want to lose it. Therefore, please select a sensible location for the ATLAS.ti library. For example, do not store it on the desktop. You probably have a folder within your document system for the project you are currently working on where you store all project related data. If you cannot or do not want to use the ATLAS.ti default location, we recommend that you create a sub folder for your ATLAS.ti related work within your project folder, and within this sub folder, a folder for your library. Make sure that your project folder is included in the automated back up routine of your computer.

Adding Documents To A Project

Supported File Formats

Textual Documents

The following file formats are supported:

MS Word	.doc; .docx; .rtf
Open Office	.odt
HyperText Markup Language	.htm; .html
Plain text	.txt

Transcripts with time stamps

If you have a transcript with time marks linked to an audio or a video file, you can add the two documents to your ATLAS.ti project and view the transcript synchronized with the associated audio or video file. You can also add new time stamps and edit existing ones. When text editing is implemented you can also prepare your own transcripts in ATLAS.ti. Transcripts can be text, rtf or doc(x) files. The format for the time stamps need to be as follows: [00:00:00] = hours:minutes:seconds.

PDF files (Text And Graphic)

PDF files are perfect if you need the original layout. When PDF was invented, its goal was to preserve the same layout for onscreen display and in print.

If the PDF file has annotations, they are displayed in ATLAS.ti. However, they cannot be edited.

When preparing PDF files, you need to pay attention that you prepare a text PDF file and not a graphic PDF. If you do the latter, then ATLAS.ti treats it as a graphic file and you cannot search it or retrieve text.

When scanning a text from paper, you need to use character recognition software (OCR, frequently provided with your scanner) in order to create a text PDF file. Another option is to apply character recognition in your PDF reader/writer software.

When you retrieve text from a coded PDF segment the output will be in rich text. Thus, you may loose the original layout. This is due to the nature of PDF as mentioned above. It is a layout format and not really meant for text processing.

Graphical Documents

Supported graphic file formats are: bmp, gif, jpeg, jpg, png, tif and tiff.

HEIF images that have been generated on new iOS-11- devices are automatically converted into the suitable format by ATLAS.ti during import.

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 can use the zoom function available via the mouse wheel or the zoom button when displaying the image using ATLAS.ti.

Audio / Video Documents

Supported audio file formats are: aac, m4a, mp3, mp4.

Supported video file formats are; avi, m4v, mov, mp4.

For audio files, our recommendation is to use *.mp3 files with AAC audio, and for video files *.mp4 file with AAC audio and H.264 video. These can be played both in the Windows and in the Mac version. More information [available here](#).

As video files can be quite sizable, we recommend to link video files to an ATLAS.ti projects rather than to import the via the Add Documents option (see "Linking Multimedia Documents To A Project (Audio / Video)").

HEVC films that have been generated on new iOS-11- devices are automatically converted into the suitable format by ATLAS.ti during import.

Geo Documents

When you want to work with geo data, you only need to add a new Geo Document to your ATLAS.ti project (see "Working With Geo Documents"). This opens an Open Street world map. When you enter an address into the Search field, you can navigate to a specific region or location on the map.

Survey Data

The survey import option allows you to import data via an Excel spreadsheet (.xls and .xlsx files)

. Its main purpose is to support the analysis of open-ended questions. In addition to the answers to open-ended questions, data attributes can also be imported. These will be turned into document groups in ATLAS.ti. The survey import option can also be used for other case-based data that can easily be prepared as Excel table. For further detail on how to prepare survey data, see "Error: Reference source not foundWorking With Survey Data".

Reference Manager Data

This option is currently only available in the Windows version and will be added to the Mac version with a future update

In order to support a literature review, you can import collected articles from reference managers. The requirement is that you can export the data as Endnote XML fie. Most reference manages offer this option in addition to RIS or RDF.

Evernote

This option is currently only available in the Windows version and will be added to the Mac version with a future update

If you collect and store you data using Evernote, You can directly import files and folders from Evernote.

■ See "[Bring out the best in Evernote with ATLAS.ti 8 Windows.](#)"

Twitter

You can collect data from Twitter searching for keywords, hashtags, users, etc. ATLAS.ti can collect tweets that are not older than one week. In order to use this option, you need to sign in with your own twitter account. See "Importing Twitter Data".

Size Restrictions

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

Theoretically, size restrictions do not play a major role due to the way ATLAS.ti handles documents. 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 entities 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.

A word about "Big Data:" Please keep in mind that the purpose of ATLAS.ti is to support **qualitative data analysis**. Big data is a buzz word nowadays, and "big data" often comes as text or images, hence could be considered qualitative. ATLAS.ti, however, is not suited for true big data analysis which is not the same as qualitative data analysis. As point of orientation, coding can be supported using the auto coding feature. However, you still need to read and correct the coding and most coding in ATLAS.ti is done while the researcher reads the data and creates or selects and applies a code that fits. A project is too large if you have so much data that you no longer can handle this part of the work and have to rely on a machine to do all the coding for you. If this is the case, ATLAS.ti is not the right tool for the job.

Importing Documents

The standard procedure is that documents are imported. This means a copy of the document is created, converted into an ATLAS.ti compatible format and stored in an internal library

For audio and video files you have the option to link them to your project. This avoids file duplication and saves hard disk space, as especially video files can be quite sizable.

To import text, PDF or image documents to your project, select **DOCUMENT / IMPORT DOCUMENTS....**

An alternative to using the main menu option to add documents is to click the + button on the top left hand side of your screen.

You can also drag & drop documents or folders from the Finder into the Document Manager or the navigator for documents.

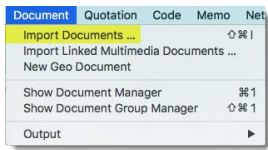


Figure 19: Adding documents to a project

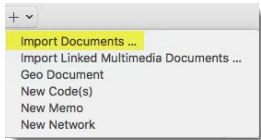


Figure 20: An alternative to the main menu option

Linking Multimedia Documents To A Project (Audio / Video)

Audio and video files can be linked to a project as file sizes can be quite large. When you link a file to a project, it is not copied and imported into the project. It remains at its source location and ATLAS.ti opens it from there when needed.

This means that the file should remain at this location. You should not rename or move it to a different folder. If this happens, the file can no longer be displayed in the project. If there is the need to move or rename the file, you need to let ATLAS.ti know (see below).

To link audio or video documents to your project, select **DOCUMENT / IMPORT LINKED MULTIMEDIA DOCUMENTS**

When you open the Document Manager, you will see the location of the file in the column "Origin".

Modifying The Location Of A Linked Document

If a linked file was renamed or moved, you need to let ATLAS.ti know about the new file name or location.

Open the Document Manager and right-click on the document. Select the option Use **DIFFERENT FILE** and select the renamed file, or point ATLAS.ti to the new location.

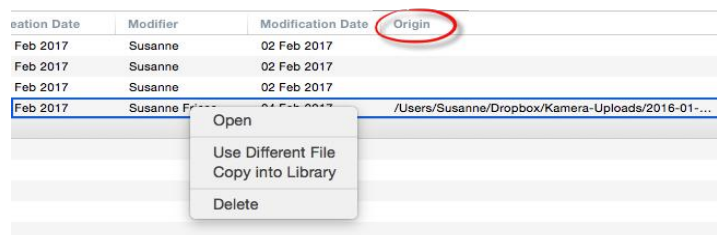


Figure 21: Redirecting ATLAS.ti to the renamed or relocated linked file

Importing A Linked File Into The Library

Another option that is available to you is to import a linked file at a later point in time (see Figure 21 above). If you do so, the file is copied and moved into the folder where ATLAS.ti stores all project related files and it will also be included in the bundled file when you export your project. Keep in mind that this might increase the file size of your project export file considerably.

Adding Video Snapshots

If you want to analyze a particular situation in your video data in more detail, you can create a snapshot from it. The snapshot will be added as new document to your project. This is how it works:

Load a video document and move to the desired position in the video.

Next click on the button **CREATE SNAPSHOT DOCUMENT**.

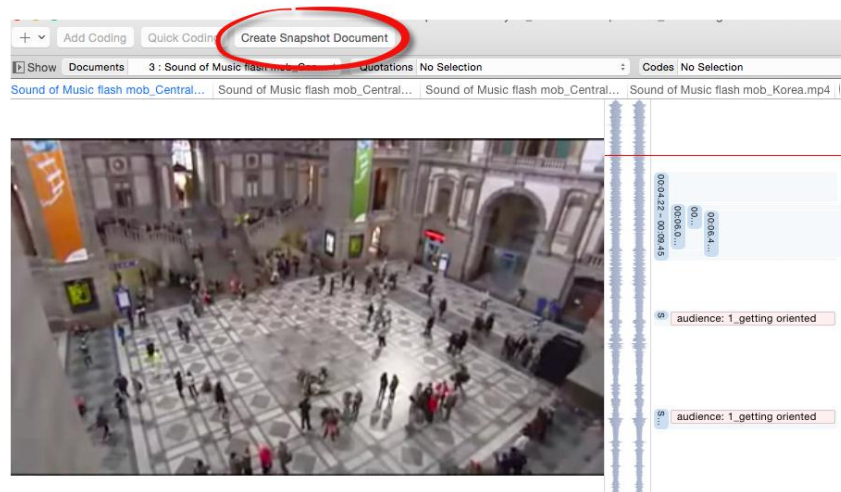


Figure 22: Creating snapshots from videos

A new image file is created and added as new document to your project. You will immediately find it in the list of documents. The document name shows the time position at which the snapshot was taken.

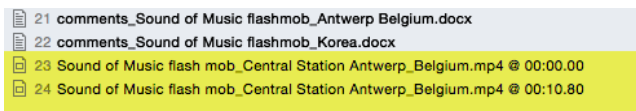


Figure 23: Snapshots in the document list

For more information on how to work with video data, see “Working With Multimedia Data “.

Video Tutorial: [Snapshot Video Documents](#)

Adding Geo Documents To A Project

For information on how to work with Geo documents, see “Working With Geo Documents.”

Importing Transcripts With Time Stamps

If you want to import a transcripts that should be linked to an audio or video file, it needs to be a text documents with time stamps that indicate the positions in the audio or video file. This will allow you to play or see the part of an audio or video file that matches the time in the transcript. If you click somewhere in the transcript, you jump to the linked position in the audio or video file. Or vice versa, if you select a position in the audio or video file, you see where it is in your transcript.

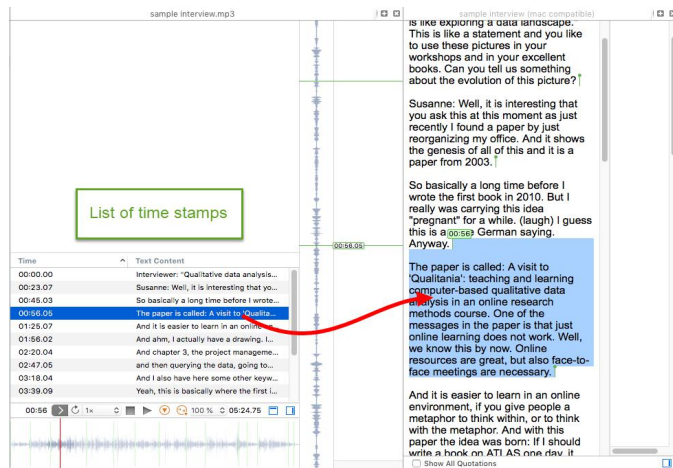


Figure 24: A transcript synchronized with its associated audio file

When preparing a transcript, the time stamps need to have the following format: **[00:00:00]. [Hours:minutes:seconds]**

The process of preparing a transcript that is associated with a multimedia file is as follows:

- you add a multimedia file first
- you import the transcript that belongs to it using the 'Import Transcript' option.
- The multimedia file and its transcript can be accessed via a special branch in the Project Explorer called “*Transcripts*”. If you access the documents from there, the multimedia file with the transcript will be opened side-by-side and you will see a list of time stamps.
- If you want to work with the documents independently, you can open them like any other document from the 'Documents' branch.

Here are the step-by-step instructions:

- Add a multimedia file to your project (audio or video). You can import it or link it to your project.
- Load the multimedia document and select from main menu the option **IMPORT TRANSCRIPT**, or click on the Transcript button in the tool bar and select 'Import Transcript' from there.
- Select the transcript and click **OPEN**.
- To see the multimedia file with the associated transcript, open the transcript branch and select the multimedia file with a double-click.

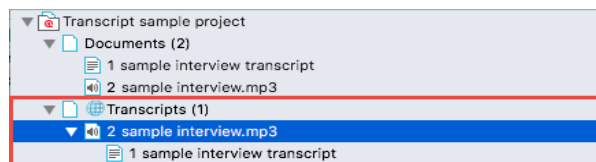


Figure 25: Transcript branch in the project explorer

The multimedia file is displayed on the left-hand side and the transcript on the right-hand side. The list of timestamps can be accessed in the multimedia document.

If you click on a timestamp, the associated section in the transcript is highlighted and the time of the selected timestamp is shown in the document and in the margin area.

In the margin area timestamps are represented by green horizontal lines; in the transcript they are displayed by small green vertical lines.

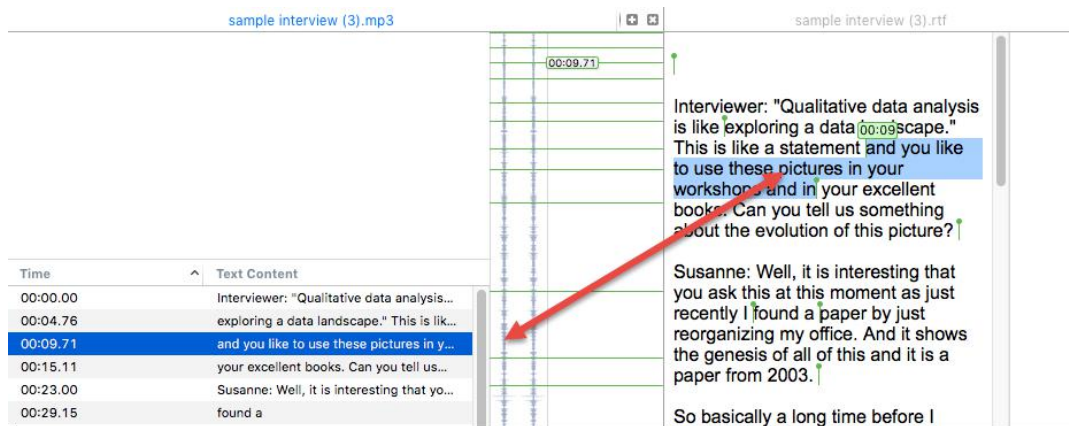


Figure 26: Display of timestamps in the multimedia file and the transcript

To play the document and view the transcript in sync, click on the button **SYNCHRONIZE SCROLLING** and play the multimedia file.



Figure 27: Options for working with transcripts

Editing Timestamps

To either modify the position of existing time stamps or to add new ones, click **EDIT TRANSCRIPT**. You will see an addition button in the tool bar: **ADD TIMESTAMP**.

MOVING A TIMESTAMP

To move the position of an existing timestamp, grab the timestamp shown as green line with your mouse (you see a little white hand) and move it to a different position.

ADDING A TIMESTAMP

To add a new timestamp, put your cursor at the position in the transcript where you want to add one and click **Add TIMESTAMP**. Alternatively, you can also move the playhead to a position where you want to add a timestamp and click the button **Add TIMESTAMP**.

You may for instance want to do this if:

- you have a transcript without timestamps, or
- you want a better synchronization and need more timestamps (see figure below).

DELETING A TIMESTAMP

To delete a timestamp, select it in the list of timestamps in the multimedia file, right-click and select **DELETE**, or click the backspace key.

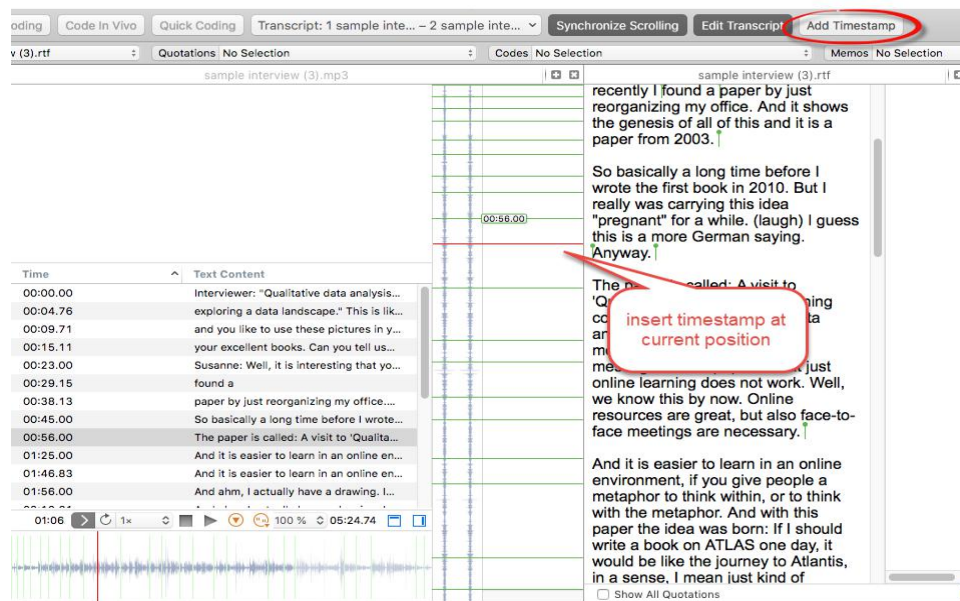


Figure 28: Adding more timestamps

Deleting An Association

Open the transcript branch, right-click on the multimedia file, select **DELETE**.

This does not remove the document from the project. The multimedia file and transcript are still available in the Documents branch. However, you cannot re-associate the two documents. If you import the same transcript again, it will be added as new document.

If you remove a document from a project that is part of a multimedia- transcript pair, then the entry in the transcript branch is also removed.

Duplicating Documents

If you need a document for different purposes, e.g. you want to view it from different angles and want to code different aspects but do not want to have it all in one document. All work that you have done so far in the document, like the document comment you have written, all quotations and their comments, all hyperlinks, all linked codes and memos will be duplicated as well.

In the future, when text editing is available, this option will allow you to split coded documents.

Open the Document Manager. Select one or more documents, right click and select **DUPLICATE** from the contextual menu.

The duplicated document(s) will be added at the end of the list of documents. They have the same name as the original document(s) plus a consecutive number in parentheses.

In terms of project size, the file(s) in the library are not duplicated. The duplicated document uses the same source file as the original document.

Setting Up A Team Project

General Procedure

If you work in a mixed Windows-Mac team, please check our [website](#) for the instructions that fit your situation.

Each team member needs to works on his or her copy of the project locally in a designated ATLAS.ti folder.

The kind of team work supported is shared coding and analyzing. This means if you have large amounts of data, you can spread the coding work across different team members. Each team member codes parts of the data and the work of all coders is put together via merging the various sub projects.

Overview Of the Main Steps

1. The project administrator sets up the projects. Let's call the project administrator "Mary" and the project "Master Project."
2. Mary adds documents to the project and possibly a list of codes.
3. She saves the project and exports it. This means creating a project bundle file (see Figure 29).
4. All team members import the project bundle file and begin their work.
5. To combine the work of all team members, each team member creates a project bundle file and sends it to Mary.
6. Mary merges all sub projects and creates a new Master file.
7. Mary exports the new Master file and distributes it to all team members (see Figure 30).
8. The team members continue their work.

This cycle continues. If new documents need to be added to the project, this needs to be done by Mary. A good time for this is after merging and before creating the new Master file.

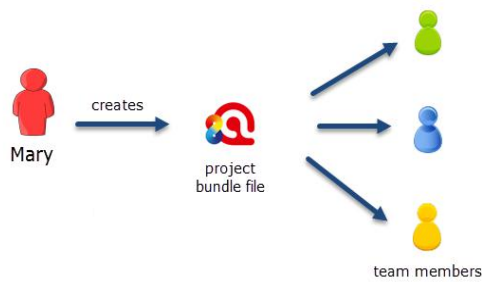


Figure 29: Steps 1 and 2: Creating and distributing the Master project



Figure 30: Steps 3 and 4: Combining the work of all team members and distributing it again

The instructions that now follow are organized by the various tasks involved when working as a team. There are operating instructions for team members and for the project administrator.

1. Project Administrator

Creating A Project

To create a new project, select **PROJECT / New** from the main menu. Click on the option: **CREATE NEW PROJECT**. Enter a project name like "Master_(project name)_date" and click **CREATE**.

Adding Documents & Creating Document Groups

The standard procedure is that documents are imported. This means a copy of the document is created, converted into an ATLAS.ti compatible format and stored in an internal library

For audio and video files you have the option to link them to your project. This avoids file duplication and saves hard disk space, as especially video files can be quite sizable. When you link a file to a project, it is not copied and imported into the project. It remains at its source location and ATLAS.ti opens it from there when needed.

This means that the file should remain at this location. You should not rename or move it to a different folder. If this happens, the file can no longer be displayed in the project and you need to redirect ATLAS.ti to its new location.

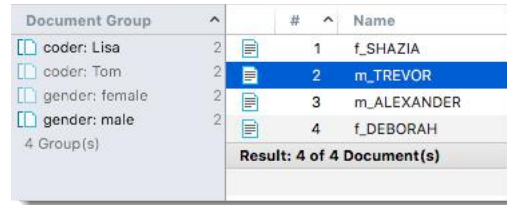


Figure 31: Document groups in the document manager

DOCUMENT GROUPS

You may also want to consider to group documents at this stage. The groups might reflect sample characteristics like demographic variables, locations, or time of data collection, or might also be used to support team work. In the latter case, you may want to create a document group for each team member and assign the documents they are supposed to code.

If you select a document, all groups that contain this document show up in bold characters.

ADDING DOCUMENTS

To import text, PDF or image documents to your project, select **DOCUMENT / IMPORT DOCUMENTS....**

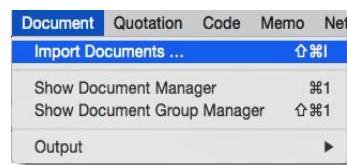


Figure 32: Adding documents to a project

An alternative to using the main menu option to add documents is to click the + button on the top left hand side of your screen (see below).

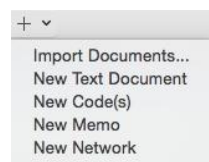


Figure 33: An alternative to the main menu option

You can also drag & drop documents or folders from the Finder into the Document Manager or the navigator for documents.

To link audio or video documents to your project, select **DOCUMENT / IMPORT LINKED MULTIMEDIA DOCUMENTS**. When you open the Document Manager, you will see the location of the file in the column "Origin" (see "The Document Manager").

Redirecting a linked file that can no longer be loaded: If a linked file was renamed or moved, you need to let ATLAS.ti know about the new file name or location: Open the Document Manager and right-click on the document. Select the option **USE DIFFERENT FILE** and select the renamed file, or point ATLAS.ti to the new location.

Creation Date	Modifier	Modification Date	Origin
Feb 2017	Susanne	02 Feb 2017	
Feb 2017	Susanne	02 Feb 2017	
Feb 2017	Susanne	02 Feb 2017	
Feb 2017	Susanne	02 Feb 2017	/Users/Susanne/Dropbox/Kamera-Uploads/2016-01-...

Figure 34: Redirecting ATLAS.ti to the renamed or relocated linked file

Linked files are currently automatically added to an exported project. With future updates you will have the option to exclude them and to transfer them separately.

CREATING DOCUMENT GROUPS

- To add document groups, open the Document Manager with a click on the **DOCUMENTS** button, or via the main document menu.
- Select the items you want to group by holding down the Shift or Cmd-key. Drag and drop the selected items into the side panel to the left (see also "Working with Groups").

Adding Codes And Code Groups

if a common set of codes and code groups is to be used, they also must be added to the project at this stage. If each team member were to add the codes / code groups individually to each sub project, all codes and groups would be multiplied during the merge process (see "Merging Sub Projects").

IMPORTING A LIST OF CODES INCL. DEFINITIONS AND GROUPS (MAC)

See "Code List Import & Export" for instructions.

ADDING CODES MANUALLY

- To add codes, click on the **+** button at the top left of your screen and select **NEW CODE(S)** from the drop-down menu.

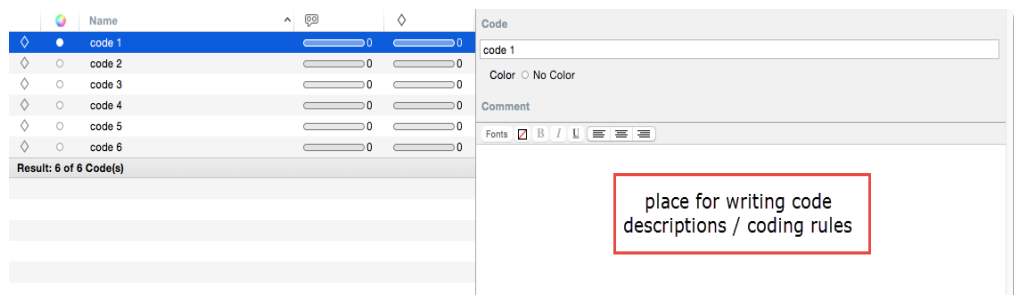
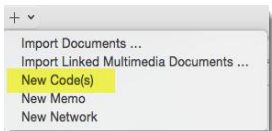


Figure 35: Adding code definitions / coding rules in ATLAS.ti Mac

ADDING CODE DEFINITIONS

- To add code definitions or coding rules, open the Code Manager with a click on the Codes button, or select **CODE / SHOW CODE MANAGER** from the main menu (short-cut: cmd+3).
- Select a code and write a description or coding rule in the comment field to the right.

CREATING CODE GROUPS

- To add code groups, open the Code Manager with a click on the **CODES** button, or via the main Code menu.
- Select the items you want to group by holding down the Shift or Cmd-key. Drag and drop the selected items into the side panel to the left.

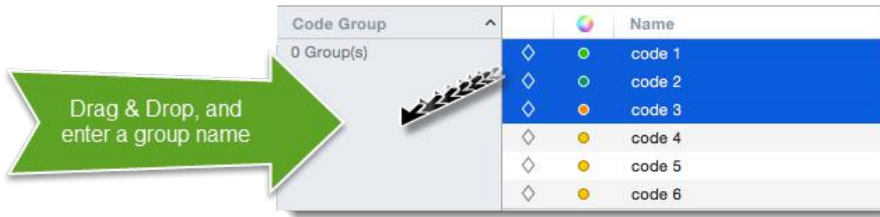


Figure 36: Creating a group in a manager

- Enter a name for the group.

SAVING THE PROJECT

Currently you cannot determine yourself where ATLAS.ti Mac stores your project files. By default, they are stored in the application folder for ATLAS.ti. If you want to add this location to your routine backup, e. g. using Time Machine, this is the location: `~/Library/Application Support/ATLAS.ti`.

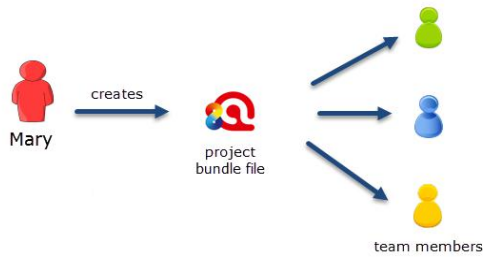


Figure 37: Creating and distributing the Master project

Exporting The Project For Distribution

- Select **PROJECT / EXPORT PROJECT**. Select a location for storing the project bundle.
- Distribute the project bundle file to all team members, e.g. via email, or a folder on a server that all team members can access.

Project bundle files can be shared via a cloud like Dropbox, OneDrive, GoogleDrive, etc. Another option is to upload the project bundle file to a server of your choice and send a link to all team members so that they can download the file.

The Mac project bundle file has the file extension ".atproj" and can also be read by ATLAS.ti 8 Windows.

The default name of the bundle is the project name. You can rename the bundle file at this stage. However, please note – renaming the bundle does not automatically change the name of your project. Think of the project bundle file like a box that contains your project. Putting a different label on the outside of the box does not change anything that is inside.

2. All Team Members

It is recommended that all team members save a copy of the project bundle file on their computer, or their personal space on a server.

Importing The Master Project And Renaming It

Open the project bundle file by double-clicking, or open ATLAS.ti Mac first and select **PROJECT / IMPORT PROJECT** from the main menu.

To rename the imported project:

Select **PROJECT / RENAME**. Add for example your name or initials to the Master project file name. Example: "Master (project name)_date_SF"



Figure 38: An ATLAS.ti Mac project bundle file

Exporting Sub Projects For The Project Administrator

After an agreed period of time where everyone has done some work on the project, team members create their own project bundle file and send it to the project administrator.

To export the project, select **PROJECT / EXPORT**.

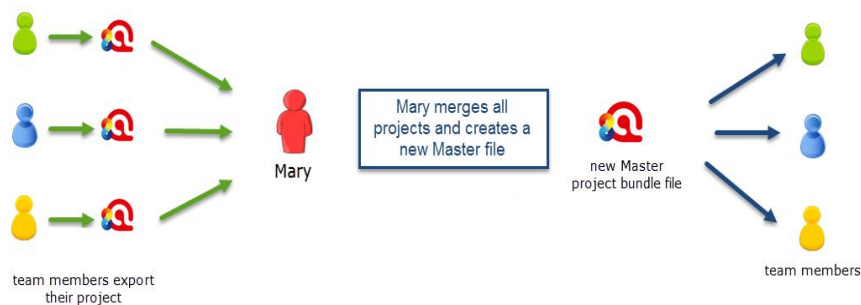


Figure 39: Steps 3 and 4: Combining the work of all team members and distributing it again

3. Project Administrator

Merging Sub Projects

The Merge Tool reunites projects that were originally divided for analytical or economical reasons. It brings together the contributions of different members of a research team. In the following a few general principles about merging are explained:

Master And Imported Projects

The Master project is the project into which another project, called the "Import project" is merged. The Master project has to be loaded first before invoking the **Merge Project** option.

Merge Strategy

The default option is to unify all entities that are **identical** and to add all entities that do not yet exist in the target project.

IDENTICAL ENTITIES EXPLAINED

When an entity is created in ATLAS.ti- regardless if it is a document, a code, a quotation, a memo, a network,a group or a comment--this entity receives a unique ID, comparable to a fingerprint. When merging projects, ATLAS.ti compares the IDs of the various entities. If they have the same ID (fingerprint), they are unified. If the fingerprint is different, they are added. Thus, the name of an entity is not the decisive factor. If Tom has created a code with the name "sunshine" and Anne also has created a code with this name in her project, these two codes are not identical as they have different IDs. If you merge Tom's and Anne's project, the merged project will contain two codes: *sunshine* and *sunshine(2)*. If the meaning of both codes is the same and you want to keep one sunshine code only, you can merge the two codes manually.

Identical entities are unified, all others are added

EXAMPLES

Groups are additive: Group B with documents {1, 2, 3} in the Master project merged with Group B' with documents {3, 4} in the Import project will result in Group B= {1, 2, 3, 4}) in the merged project.

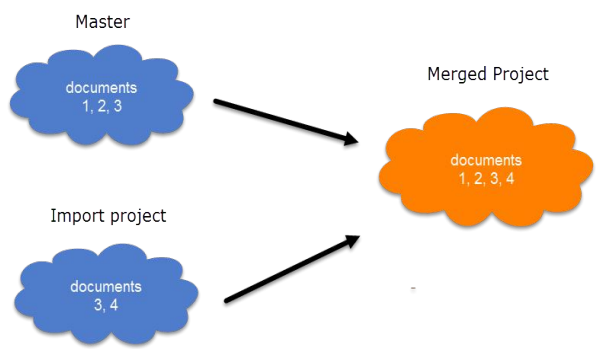


Figure 40: Merge example 1: Added elements to groups

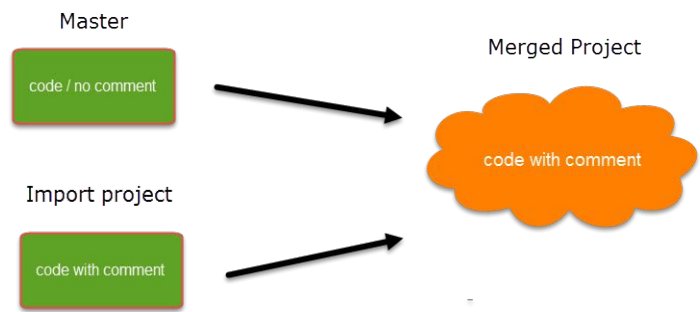


Figure 41: Merge example 2: Entities with comments, no conflict

Entities with and without comments: If there is a code C in the Master project that has no comment, and a code C in the Import project that has a comment, the merged procedure will add this comment to the merged project.

In the case of an unsolvable conflict - code C in the Master project has a comment, and code C in the Import project also has a comment - the user can define which of the two conflicting entities will win. If the comment of the Master project should be kept, you need to select the option **"Keep local changes in conflict"**. If the comment of the Import project should be kept, you need to select the option **"Override local changes in conflict"** as shown in Figure 42.

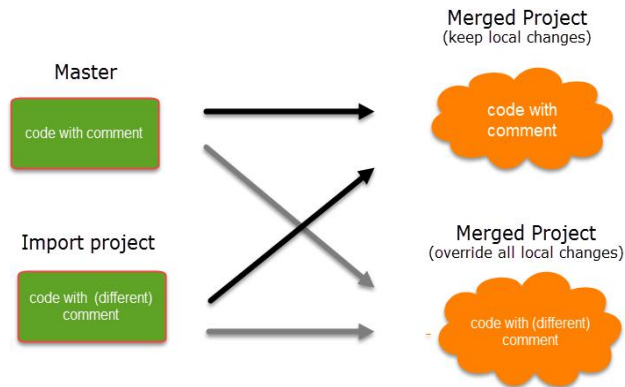


Figure 42: Merge example 3: Entities with conflicting comments

The decision which changes to keep can currently be taken only for all entities. In the future, you will be able to decide for each entity how the conflict should be resolved.

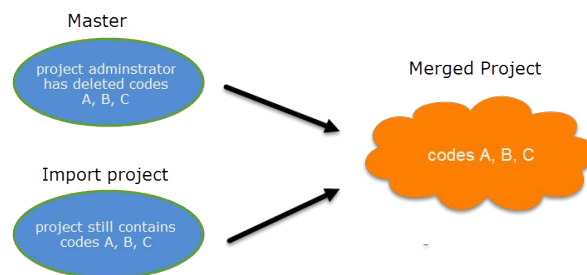


Figure 43: Example 4: Merging always adds entities, never subtracts

How deleted entities are handled: It is not possible to "subtract" entities. If one team member has deleted a code or some codings that still exist in second project to be merged, the merged project will contain those codes or codings again.

If you want to clean up a project, this is best done in a "fresh" Master project after merging and before distributing the new Master file to all team members.

How to Merge

- Open ATLAS.ti without opening the Master project. We first want to duplicate the Master project and this can only be done when it is closed. The previous version can be kept as backup. There may be times, when you want or need to go back to an older version of your project.
- To duplicate the Master project, select **PROJECT / OPEN**, right click the Master project file and select the option **DUPLICATE ...**
- You will be asked to enter a new name. We recommend the following structure: Master project name, date of merging and iteration of merging. For example: **Master_Neighborhood study_2017_03_18 (first merge)**.
- From the main menu select **PROJECT / MERGE WITH PROJECT**.
- Select the project to be imported, i.e. a project bundle file from one of the team members.
A summary report opens. If there are conflicts, you can decide which project should "win":
Select the option: "**keep local changes**" if you do not want to change the entries in the Master project that conflict with entries in the project that you import.
Select the option "**Override all local changes**." if you indeed want the Master project to be changed and want to import all modifications made in the project that you import.
- The summary report shown in Figure 41 does not contain conflicts. The project administrator "Susanne" has set up the project, adding documents and codes and "Tom" has been coding three data segments. If there are no conflicts, it does not matter which of the two options are selected.

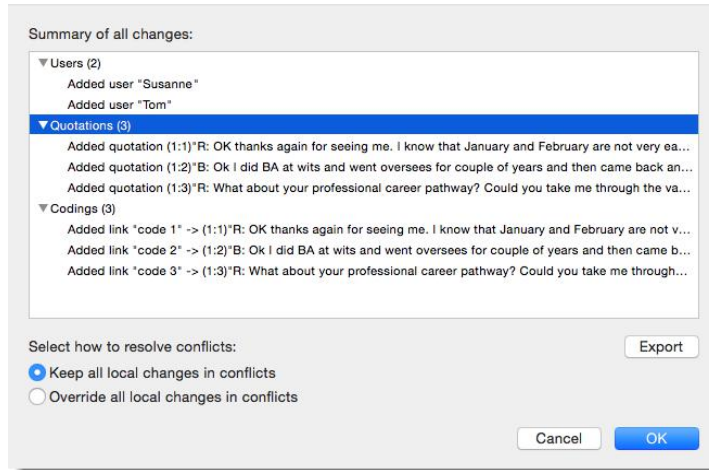


Figure 44: Merge summary report without conflicts

The summary report in Figure 40 indicates that a code was renamed, a new code was added and a document group was modified. In order to make a decision whether to keep these changes overriding the Master file, or whether to discard them (by keeping all local changes), the project administrator is best advised to first check the project to be imported. The Merge process can be canceled as this stage, if you decide that it is best to double-check the import project.

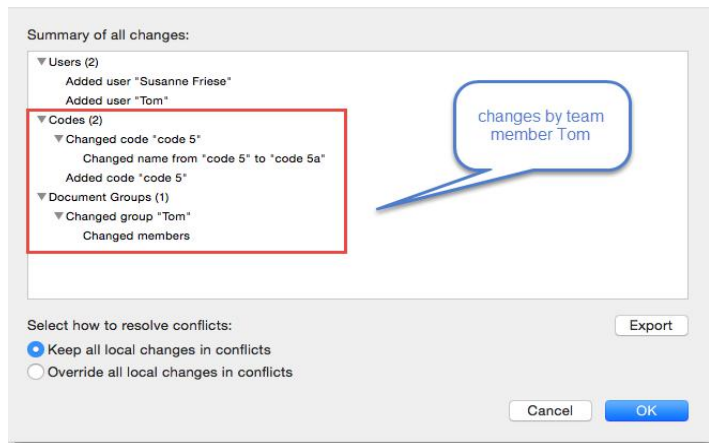


Figure 45: Merge summary report with conflicts

- Select **OK** to initiate the merge process.

After merging you have the option to open and save a merge report that lists all actual changes to the project. Double-check the resulting project. You can always select **UNDO**, if you do not want to keep the merged project.

- If merging was successful, save the new Master file (**PROJECT / SAVE**). If your team consists of several team members, continue with merging further sub projects.

Merging Codes To Clean-Up

If you find duplicate codes in the merged project, e.g. team members have added a code with the same name, you need to do some house keeping. Duplicate codes can be merged as follows:

- Open the Code Manager. Drag the code you want to merge to a second code. Select **MERGE**.

If all team members have been coding different documents, merge conflicts are unlikely to occur. A conflict could for instance arise if someone has modified a document or code group. As project administrator, you have to decide whether to accept this change or not.

Two Examples How To Do And How Not To Do It

EXAMPLE 1 – RECOMMENDED PROCEDURE

There are two people on the team, the administrator and the team member. The administrator sets up the project, adding one document and codes 1, 2 and 3. Code 1 is orange and code 3 is light green.

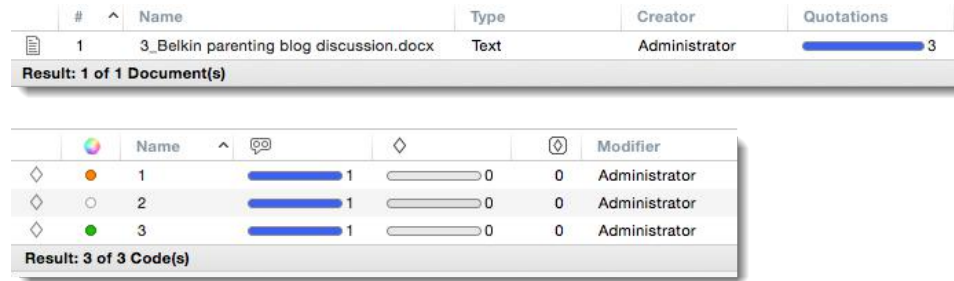


Figure 46: Project setup by the administrator

The project administrator saves the project, exports it and sends it to the team member. The team member imports the project and renames it immediately (**PROJECT / RENAME**).

The team member adds a comment to code 3, continues to code the project and adds a code 4.

To prepare the project for merging, the team members saves the project, exports it and sends it back to the administrator.

The administrator starts the mere process by opening the Master project.

The next step is to select Project / Merge with Project... and to select the project sent by the team member.

The summary report looks as follows:



Figure 47: Merge report example 1

In order to merge the comment written by the team member into the Master file, the option "Override all local changes in conflicts" need to be selected:

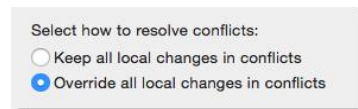


Figure 48: Select Override all local changes if already existing items have been modified

After the merge, the following entities are added to the project:

- 9 quotations and codings, and a new code 4.
- Code 3 was modified, i.e. the comment written by the team member was added.
- The document was unified as its ID was identical in both projects.

#	Name	Type	Quotations	Creator
1	3_Belkin parenting blog discussion.docx	Text	12	Administrator

Result: 1 of 1 Document(s)

Name	Quotations	Comments	Comment	Creator
1	5	0		Administrator
2	4	0		Administrator
3	3	0	a comment written by team member 2	Administrator
4	0	0		team member_2

Result: 4 of 4 Code(s)

Figure 49: Example 1: Document and Code Manager after merging

EXAMPLE 2 – THIS IS HOW NOT TO DO IT

There are two people on the team: The administrator and the team member. The administrator sets up a project, adding one document and codes 1, 2 and 3. Code 1 is orange and code 3 is light green.

#	Name	Type	Creator	Quotations
1	3_Belkin parenting blog discussion.docx	Text	Administrator	3

Result: 1 of 1 Document(s)

Name	Quotations	Comments	Modifier
1	1	0	Administrator
2	1	0	Administrator
3	1	0	Administrator

Result: 3 of 3 Code(s)

Figure 50: Project setup by administrator

A team member also sets up a project also adding document "3_Belkin parenting blog discussion" and a document called "5_NY magazine_Discussion...." The team member adds the tree codes 3, 4 and 5:

#	Name	Type	Modifier	Quotations
1	5_NY magazine_Discussion of All Joy...	Text	team member	3
2	3_Belkin parenting blog discussion.docx	Text	team member	0

Result: 2 of 2 Document(s)

Name	Quotations	Comments	Modifier
3	0	0	team member
4	0	0	team member
5	0	0	team member

Result: 3 of 3 Code(s)

Figure 51: Project setup team member

When merging these two projects, there will be two issues. As the team member also added document "3_Belkin parenting blog discussion," the merged project will contain the document twice. The content of the two documents may be the same, but they are not identical as the document was added to two different projects, Therefore they are treated by ATLAS.ti as two different documents.

Please note: Currently, duplicate documents cannot be merged manually to fix this problem! Please follow the recommended work flow when working in teams on the same set of documents (see Figure 29).

Video tutorial: [ATLAS.ti Mac - Merging Projects](#)

Housekeeping

After merging all sub project, the project administrator may need to do some house keeping work like cleaning up the code list, adding or modifying code groups, adding a memo with information for the team, or adding new documents and document groups.

Distributing The New Master File To Team Members

After all house keeping work is done, save the new Master project and export it for distribution to team members. See "Exporting The Project For Distribution".

4. Team Membership

Importing The New Master File & Renaming

As before, team members import the new Master project and rename the Master file - again adding their name or initials. See "Importing The New Master File & Renaming".

Continue the cycle of project exchange and merging between project administrator and team members as needed.

Useful Resources

- [ATLAS.ti Mac - Merging Projects](#) (explains the merge process in ATLAS.ti Mac)
- [Quick Tour ATLAS.ti Mac - English](#) (playlist of videos for ATLAS.ti Mac)

Working With Documents

Loading Documents

All added documents can be accessed via the Project Explorer or document navigator that you find on the left-hand side of the screen. Once you have codes, memos and networks later on, they can also be accessed this way.

Load a documents with a double-click on a document in the document tree of the Project Explorer, or in the document navigator (see Figure 52). A third option is to double-click on a document in the Document Manager.

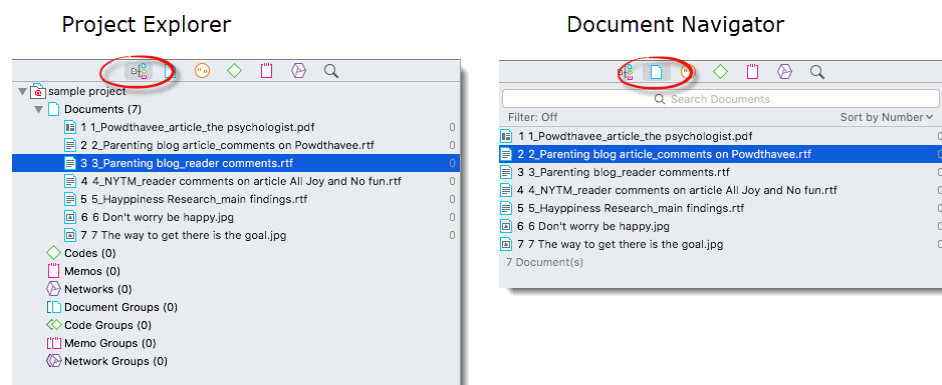


Figure 52: Loading documents

To close the selected document tab or all other loaded documents within a region, right click on the header area and select the appropriate option from the context menu: **CLOSE TAB** or **Close Other Tabs** (see below).

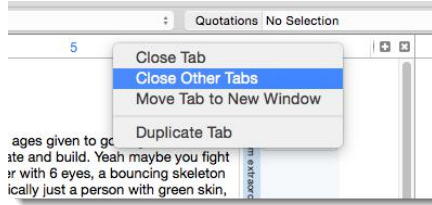


Figure 53: Close Tabs

Multiple Document View

You can load multiple documents side-by-side or split your screen horizontally, or both. And this does not only apply to documents, you can also open a document and a network or a document and a memo side-by-side, or two documents side-by-side and a memo horizontally above or below (see for instance Figure 116). This is how it works:

- Click on the plus sign to add a new region.
- Right-click on the document tab and select **DUPLICATE TAB** (see left) to load an already opened document into a new region. You also find the "Duplicate Tab" option under the main menu **WINDOWS / DUPLICATE TAB**.

To Add A New Region Via Drag-And-Drop

- First load a document, memo or network into the display area.
- Grab the document / memo / network tab that you want to move, left-click and drag it to the right, left, top or bottom border of the main screen. When a small purple bar appears, you can drop it (see Figure 54).
- If you want to replace another document / memo / network that is currently loaded, drag and drop the entity tab on top of document / memo / network area (see below). Instead of just the small bar, the entire region for this entity is highlighted in purple.

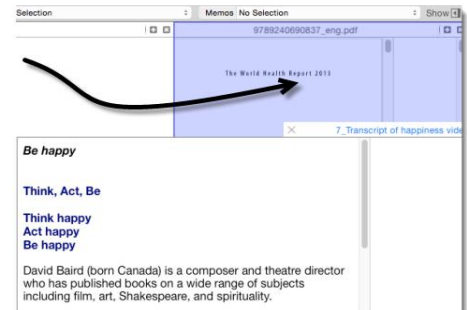
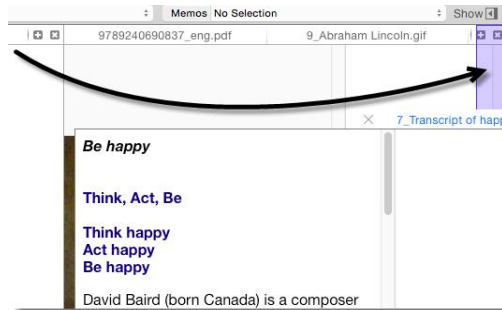


Figure 54: Loading documents side-by-side

Opening Multiple Windows

To open a document, network or memo in a window of its own:

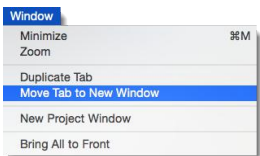


Figure 55: Main menu option



Figure 56: Opening multiple windows via drag-and-drop

- **Drag and drop** the entity tab outside the ATLAS.ti window and drop it there
 - Or select the option **MOVE TAB TO NEW WINDOW** from the context menu or the main menu Windows.
- Unlike the multiple-document view, the new window contains its own inspector and navigator.

The Document Manager



Overview

The Document Manager offers the following options: You can add or remove documents to/from a project, rename documents, write document comments, review the document content, retrieve documents by document groups or more complex criteria, review and edit group membership, and create document groups.

Other options are:

CREATING REPORTS: Create tabular reports in Excel format of the currently displayed content of the main window, or reports in Word or PDF format. This is described in detail in the section "Data And Project Export."

FILTERING: Formulate powerful queries. Clicking on the filter icon to select from a large range of options to filter project documents in a variety of ways. This is explained in detail in the section "Complex Quotation Retrieval (Query Tool)".

Opening The Document Manager

Open the Document Manager by clicking on the button **Documents** above the document area, or the document branch in the **Project Explorer**, or select **DOCUMENT/ SHOW DOCUMENT MANAGER** from the main menu.

If you want the Document Manager to stay on top, click the pin icon in the top right-hand corner.

Main Window

The main windows provides an overview of the main properties of a document:



DOCUMENT ICON: The first column indicates whether a document has a comment or not. The icon for commented documents is a post-it note. The icons also indicate the document type (text, PDF, audio, video, image, geo).

Document Number (#): The second column shows the document number. All documents are numbered consecutively according to the time when they were added to a project. Currently, position and numbering of the documents cannot be changed, unless you have removed documents and there are numbering gaps. These gaps can be closed by selecting: **PROJECT / RENUMBER DOCUMENTS AND QUOTATIONS.**

NAME: ATLAS.ti uses the file name as the document name. For survey data, the document name is taken from the Excel spreadsheet that you import.

TYPE: Specifies the document type (text, PDF, image, video or audio)

Quotations: Displays a bar and a number showing the number of quotations for each document.

Group: This column lists the groups the document is assigned to.

Comment: If a comment has been written for the document, it is displayed in the next column.

The next columns in the Document Manager show the creator and modifier (name of the author who created and last modified the document), the creation date, and date of last modification.

The last column specifies the original path where the document came from when it was imported into the project.

The default order of the columns can be changed manually via drag-and-drop.

Previewing Document Content

If you select a document, its content will be displayed in the preview area (see Figure 57). Multimedia documents can be played back in this area.

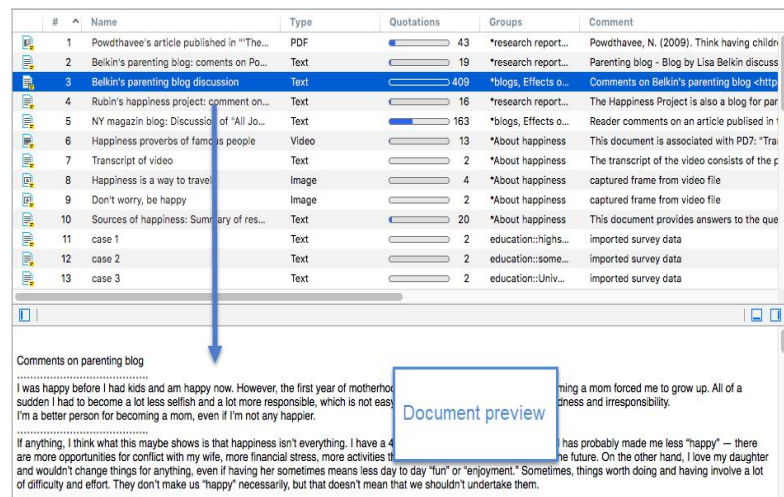


Figure 57: Preview area in Document Manager

Adding and Removing Project Documents

To add a document to the project, click on the **+** button at the top left of the Document Manager.

To remove one or more documents, select them in the document list and click on the bin icon.

The documents will be removed from your project with no further confirmation. This means, all coding, commenting, memoing for the document(s) will also be deleted. If you removed documents by mistake, you can get them back using the Undo function. This, however, only works during your current session. After closing ATLAS.ti, the documents and all its codings can no longer be retrieved.

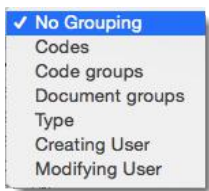


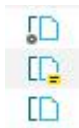
Figure 58: Grouping options for documents

Grouped By Option

You can group documents by a number of different criteria. The following grouping options are available:

If you export the content of the main window to Excel/Open Office Calc (Export as Table), selecting a "grouped by" view creates a new tab for each group in the report.

Video Tutorial: [ATLAS.ti Mac: Grouping Documents](#)



Side Panel

The side panel on the left-hand side shows the list of available document groups and smart groups. The icon for regular document groups is not filled in, the icon for smart document groups has a gray dot at the bottom left, and all commented groups display a post-it.

When selecting a document in the main window, all documents groups / smart groups that apply are highlighted in the side panel:

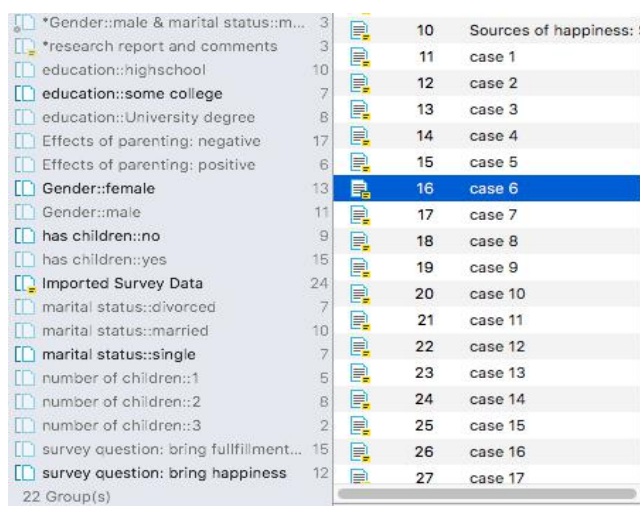


Figure 59: All document groups that apply are highlighted

Filtering Documents By Document Groups

When selecting a document group the side panel, only the documents that belong to the selected document group remain in the list. It is possible to select more than one document group by holding down the cmd or SHIFT key.

To filter the list of documents, select one or more documents groups in the side panel. At the top of the Document Manager, a beige colored bar is displayed showing the currently selected code groups.



Figure 60: Filtering documents by selected groups

You can select between filtering documents that are members of **ANY** of the selected groups, or that are members of **ALL** of the selected groups. "Any" means that all of the documents of the selected documents groups are listed. "All" means that only documents are listed to which all of the criteria apply. In Figure 60 this would be all documents of female respondents with some college education.

If you select "Any", the Document Manager would list the documents of all female respondents + the documents of those with some college education.

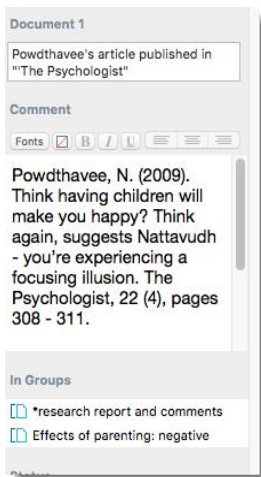


Figure 61: Document Manager Inspector

Creating New Document Groups

Click the + sign at the bottom of the side panel to add a new document group.

Alternatively, you can also right-click inside the side panel to choose these options from the secondary menu. A third way of creating document groups is to select a number of documents in the main window of the Document Manager by holding down the **COMMAND** or **SHIFT** key and to drag-and-drop them into the side panel (see also "Common Procedures" in the section on "Working with Groups.")

Document Inspector

The document inspector on the left-hand side contains:

- A field for the **document name**. You can edit the name here. This has no effect on the original file name of the document.
- **COMMENT**: Use the comment field to capture meta information about the document. E.g. if the document is an interview transcript, you can add the interview protocol that describes the interview situation. If it is a document that you found online, you can provide the source information.
- **IN GROUPS**: Here you can see to which document groups the document has been assigned to. Right-click to open the Group Manager or to remove the document from the Document Group.

Each linked entity has a secondary menu offering you entity specific functions.

Exploring Your Data

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 documents. Stop and Go Lists can be used to control the analysis.

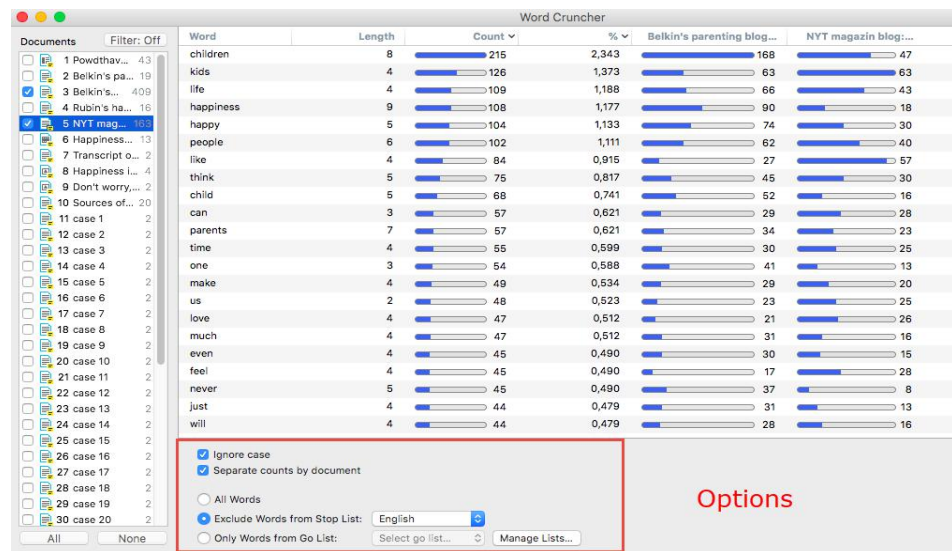


Figure 62: Example of a Word Cruncher output - comparing the word count of two documents

If you click on a column header for Word, the table is sorted by the words in alphabetical order.

If you click on all other column headers the table is sorted either by highest to lowest, or by lowest to highest frequency.

Creating A Word Count Table

From the main menu, select **ANALYSIS/ WORD CRUNCHER**. The Word Cruncher opens.

Select one or more documents in the Documents column on the left. The table immediately fills with content. At the bottom of the table you have a few further options:

Ignore case: Same words with capital and lower case letters are not counted separately.

Separate counts by document: You get the total and relative counts for all selected documents, and separate absolute frequency counts for each document.

All Words: No word or sign is excluded from the count.

Exclude Words from Stop List: Words from a selected stop list are not counted.

Only Words from Go List: Only words from a selected go list are counted.

Manage Lists....: Select to edit existing stop and go lists and to create new ones. ATLAS.ti by default includes four stop lists: An English, French, German and Spanish language stop list. See: <https://www.ranks.nl/stopwords>. You can also find stop lists for other languages on this page.

Word Cruncher Output

Click on the button **EXPORT TABLE** to export the table to be opened in Excel, Numbers or OpenOffice Calc. Use the Numbers, Open Office Calc or MS Excel™ functionality for further exploration.

Video tutorial: [ATLAS.ti Mac: Word Cruncher](#)

Stop And Go Word Lists

Stop words are words which are filtered out when processing natural language data (text).

If you select a Go Word List, then only the words that are included in the list are counted.

You can find commonly used stop lists for various languages here: <https://www.ranks.nl/stopwords>.

You can import already existing lists, or you can create and build your own stop and go word lists.

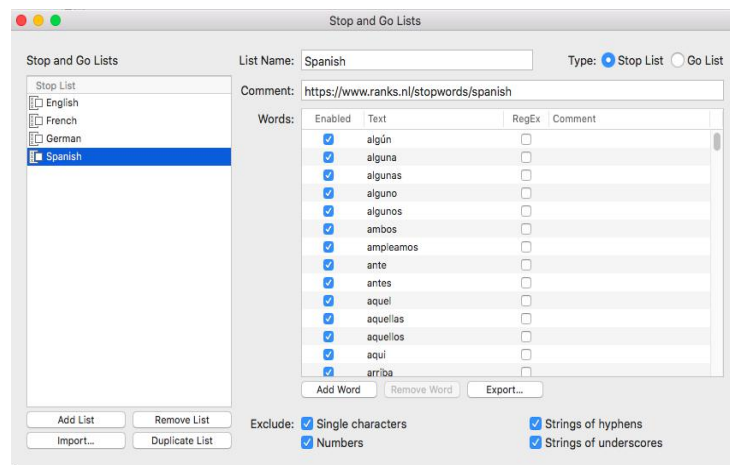


Figure 63: Managing stop and go lists

CREATING WORD LISTS

Click **MANAGE LISTS** in the Word Cruncher, or select **ANALYSIS/STOP AND GO LISTS** from the main menu.

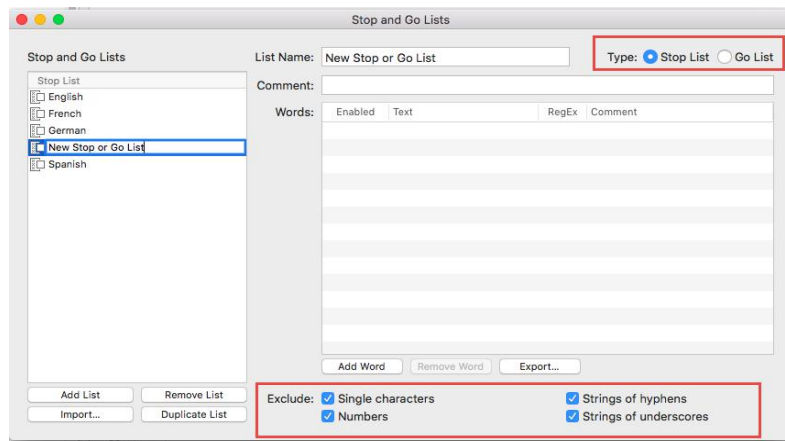


Figure 64: Creating a new stop or go list

- Click on the button **Add List**. In the next step, you can define whether this list should be a stop word or a go word list. You can always change it later.
- Enter a **name** for the list and select a **list type**: Stop or Go List. Add a description in the comment field. At the bottom of the window you have further options: to exclude single character words, numbers, strings of hyphens or underscores.
- To add words to the newly created list, click on **Add Word** and enter a word or regular expression that you do not want to be included in the word count. If you enter a regular expression, you need to tick the **Regex** box. Optionally you can write a comment that explains the regular expression.

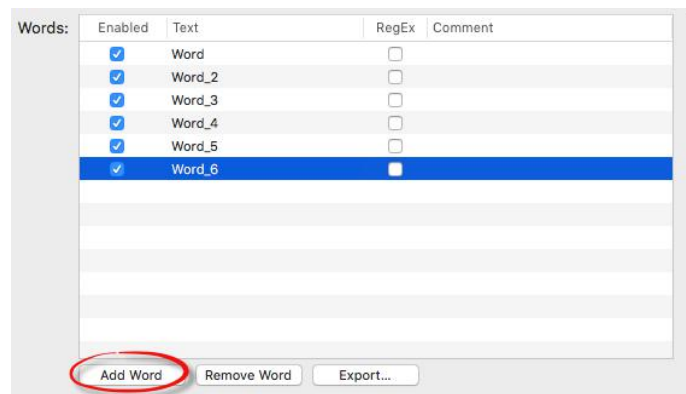


Figure 65: Add words to a stop or go list

Alternatively, you can click the **Add Word** button a few times and then change the name of the default entries.

IMPORTING AND EXPORTING WORD LIST

Instead of entering a field for each word that you want to add to a word list, you can also prepare a list in Excel (one word per line) and import it. The name of the Excel file is used as a name for the word list.

- In ATLAS, open the Stop and Go List Manager and select **IMPORT...**
- To Export a word list, click on the **EXPORT** button that you find at the bottom of each list. Lists can be exported to an Excel file in XLSX or CSV format and as an OpenOffice Calc file.

ADDING WORDS FROM WORD LIST TO A STOP LIST

- Create a word list.
- Select a stop word list (Figure 62).
- Right-click on a word in the word list and select **ADD TO STOP WORD LIST**.

16th	4	1	0,013
a	1	164	2,119
able	4	2	0,026
about	5	44	0,568

Figure 66: Add words to the exception (stop) list from the Word Cruncher

Project-Wide Search

Use the project wide search to search for words, sentences, expressions in your entire project. The search can be restricted to any of the entities like documents, codes, quotations, memo, comments, groups, etc. The reports show the search term with surrounding context. In addition it is possible to access each hit within the context of the project.

You can access the project-wide search in the navigator by clicking on the search icon (see Figure 67).

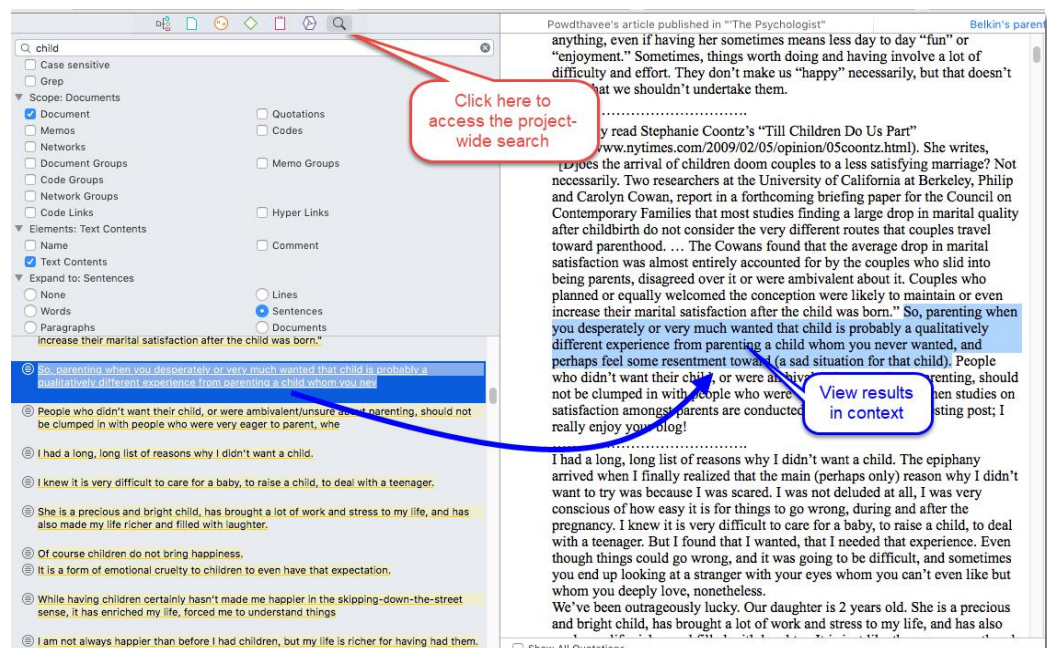


Figure 67: Project-wide search

Enter a search term.

A search can be case sensitive and you can use regular expressions to build a more complex search term. See "Regular Expressions (GREP)" for further detail.

Select the scope of the search. You can select one or more entity types, you can search within the entity name or comment only, or within the text content.

Select the amount of context that should be shown in the result list. Options are none, the line, the word, the sentence, the paragraph, or the entire document.

The results will be shown immediately in the bottom part of the navigator. From there you can access each hit with a single mouse click (see Figure 67).

Working With Quotations

Creating Quotations

It is not always desired to start setting codes immediately. You can begin by identifying interesting segments in your data, mark them and comment on them. This is exemplified below based on a video document. If you prefer to start coding your data directly, continue reading under "Coding Data."

In a video or audio document, you create a quotation simply by highlighting an area on the audio-wave form.

For all other document types, you can either click the button **QUOTATION FROM SELECTION**, or right-click directly on the highlighted segment and select **CREATE QUOTATION** from the context menu (short-cut: **⌘H**).

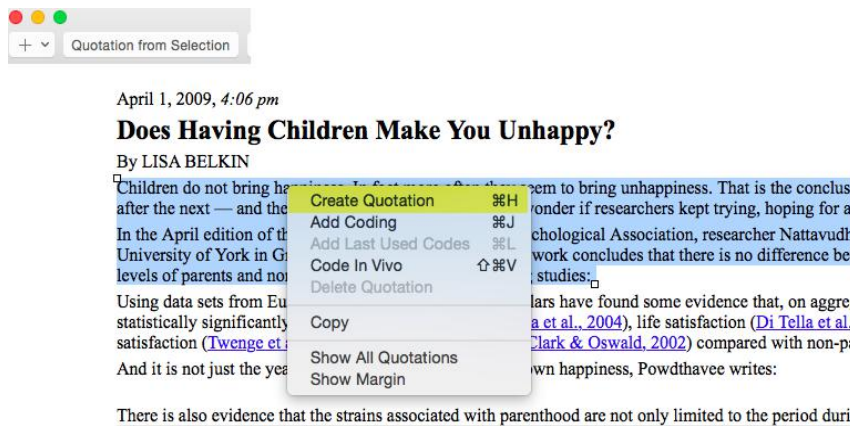


Figure 68: Creating a quotation via the context menu

After creating a quotation, you can modify the default name and write a comment in the inspector:

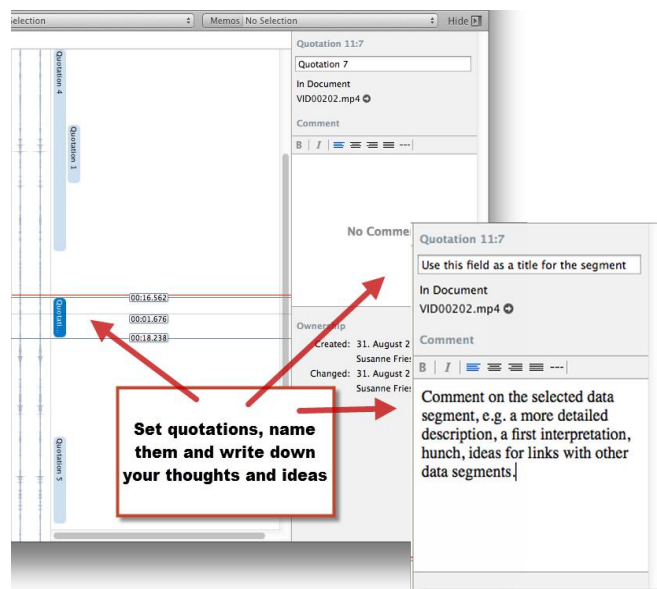


Figure 69: Working with quotations: modifying quotation names and writing comments

To keep track of your data and your thoughts, open the Quotation Manager by clicking on the *Quotations* button, or select **QUOTATION / SHOW QUOTATION MANAGER** from the main menu:

Each quotation is automatically assigned an ID and a name. The quotation ID consists of the document number and a number indicating the chronological sequence when a quotation was created in the document. The quotation name for text quotations consists of the first 100 characters of the text; the name of multimedia quotations is "quotation + ID"

Video tutorial: [Creating Quotations](#)

Renaming Quotations And Writing Comments

In the inspector on the right-hand side you can modify the quotation name and review or edit quotation comments.

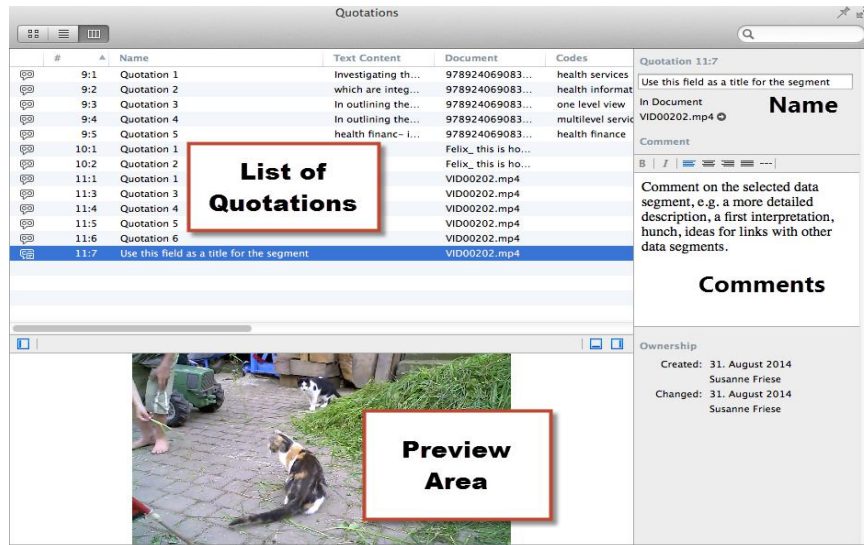


Figure 70: The Quotation Manager

Modifying The Length Of Quotations

Just drag the start or end points to a different position. The quotation bar in the margin area automatically follows. This applies to all media types (see Figure 71).

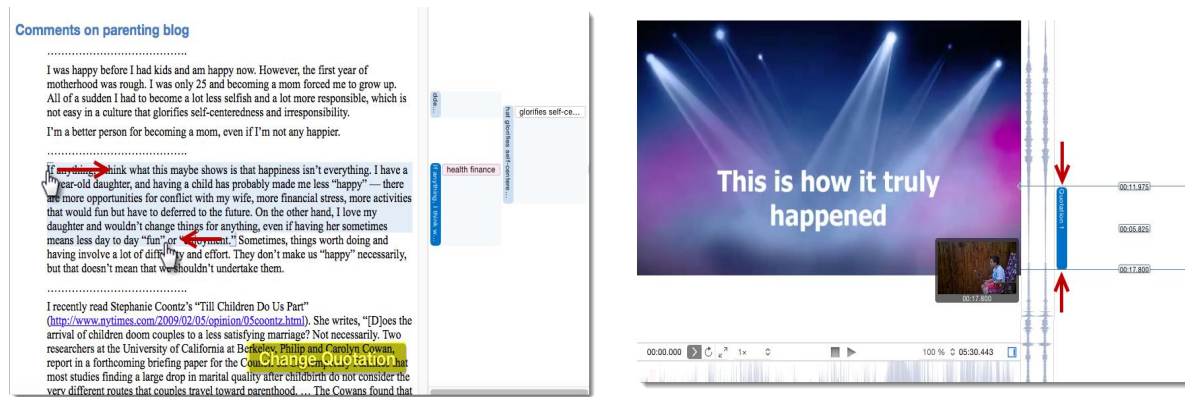


Figure 71: Modifying the length of a quotation

Reviewing Quotations

When you select a quotation in the list, its content is displayed in the preview area. This applies to all media types. You can read text quotations, listen to audio quotes, view image and video quotations. This is a convenient way to browse through your quotations (Figure 72).

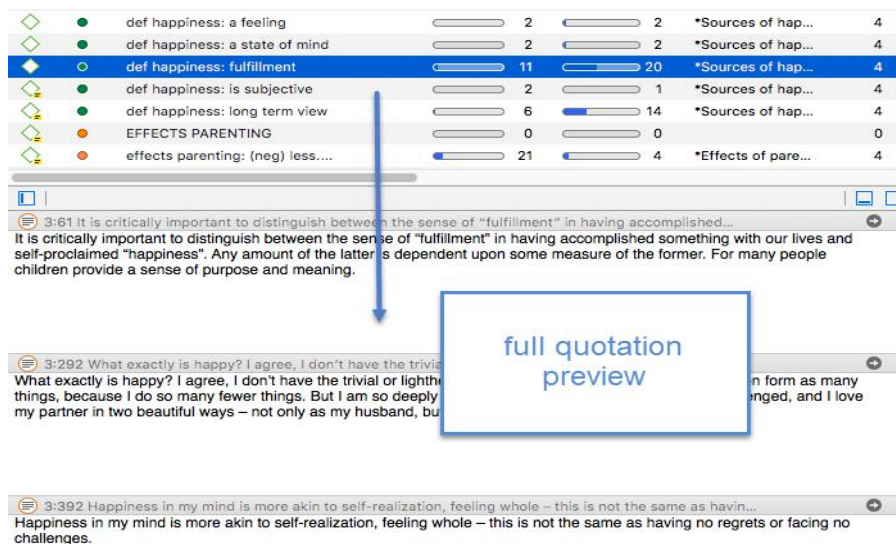


Figure 72: Quotation preview

Coding Data

Overview

ATLAS.ti offers several ways to code your data: Adding codes while you read/listen to or view the data; going through and using the last used code again (quick coding); using the actual words in the text as codes (in-vivo coding); coding with already existing codes via drag & drop; or using the auto-coding feature.

All of these options are explained in detail below.

Add Coding

Add Coding

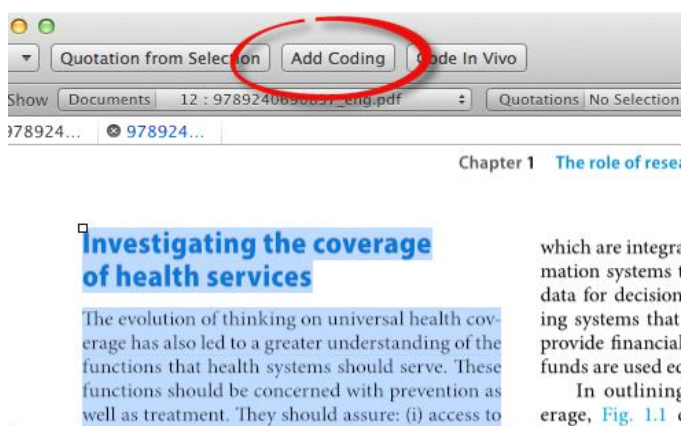
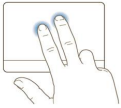


Figure 73: Coding a selected data segment

To code a data segment, highlight it with your mouse and select the **ADD CODING** button (short-cut: **⌘**).



An alternative is to right-click on the highlighted segment and select **Add Codes** from the secondary menu.

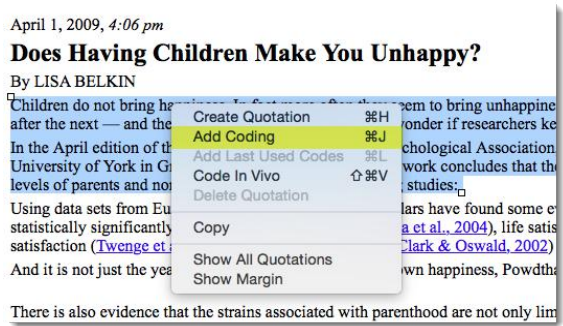


Figure 74: Add coding option in the secondary menu

After coding, the quotation name and the code label are displayed in the margin area (Figure 75).

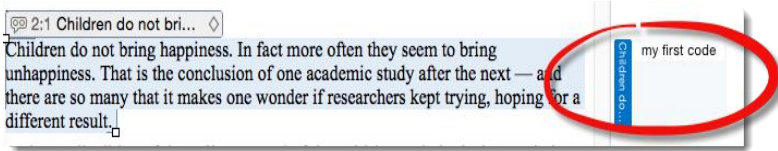


Figure 75: Display of code label and quotation in the margin area

Coding image, audio or video data works in the same way: Highlight the desired segment with your mouse, click the **Add CODING** button (or right-click and select **Add CODING**), and enter a code. When coding audio or video data, highlight a segment on the audio-wave form (see Figure 68).

Video Tutorial: [ATLAS.ti Mac: Coding](#)

Coding via Drag-And-Drop

You can code via drag-and-drop from the code list in the navigator, or from the Code Manager. You can either drop a code onto the highlighted quotation, or on the quotation bar (see Figure 76 and Figure 77).

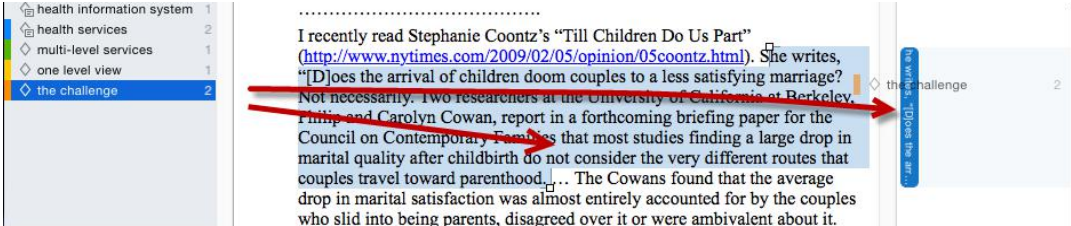


Figure 76: Coding via drag and drop from the navigator

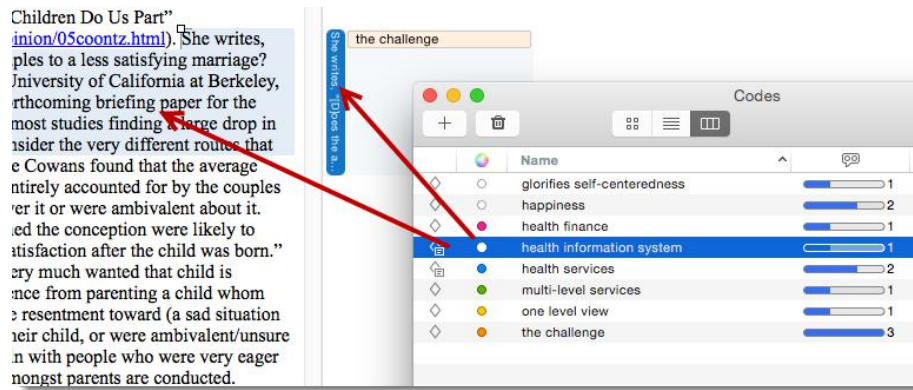


Figure 77: Coding via drag & drop from the Code Manager

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.

Quick Coding

- Select a data segment and click on the Quick Coding button (shortcut: **⌘L**), or select **ADD LAST USED CODES** from the secondary menu.

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 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 The Length Of Quotations" on page 57) is often the next step after creating the in-vivo code.

In Vivo coding can only be applied to textual primary documents.

Code In Vivo

- Mark the text passage that you want to use as an in vivo code.
- Click the **IN VIVO CODING** button, or right-click on the highlighted text segment and select **CODE IN VIVO** from the secondary menu.
- If needed, change the newly created quotation boundaries.

You can either drag & drop a code from the Code Manager onto a selected data segment, or as shown in the Figure 78 below, from the navigator.

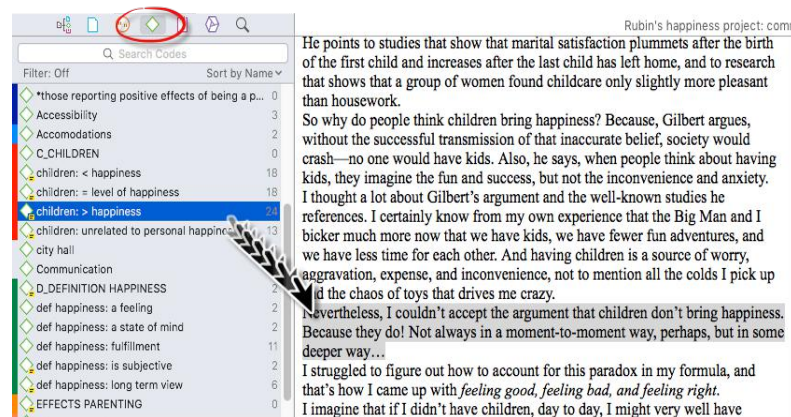


Figure 78: Coding via drag & drop

Unlinking Codes

- Right-click on a code in the margin area and select the option **REMOVE FROM QUOTATION**.

Writing Code Comments

You can write code comments in the inspector, or when double-clicking on a code in the margin area:

- Inspector: If you select a code, the information for this code is displayed in the inspector and you can write a comment into the comment field there.

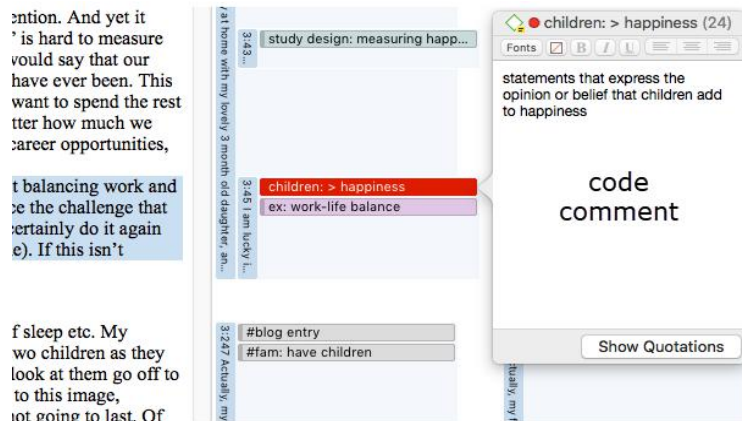


Figure 79: Code comment in the margin area

- Margin area: Another option is to double-click on a code in the margin area. This opens a small window where you can write, review or edit a code comment. It is also possible to access all quotations that are coded with this code.

Merging Codes

Clean up synonymous codes by merging them.

When developing a coding schema, 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.

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.

- In the Code Manager select one or more codes that you want to merge with another code.



Figure 80: Audit trail after merging

- Drag-and-drop the code(s) to the "target" code that you want to keep. A window opens. Select the first available option: **MERGE CODE A INTO CODE B**. The quotations are added to the target code, and the merged code is removed from the list of codes.

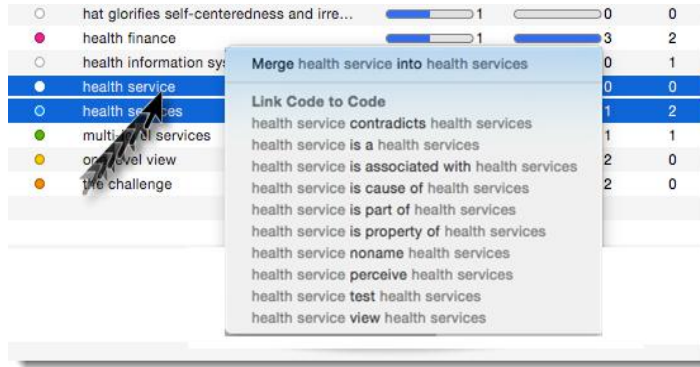


Figure 81: Merging two codes

If the merged code has a comment, the comment is added to the target code. If both codes have a comment, an audit trail is provided (see Figure 80).

Replacing A Code

To replace one code with another in the margin area, drag and drop a code (either from the Code Manager or the navigation pane) on top of another code in the margin area. Select the **REPLACE** option from the context menu.

If you drag-and-drop a code from the margin area on top of another code in the margin area, the code you drag is unlinked from its prior location and replaces the code that it is dropped onto.

The Quotation Manager

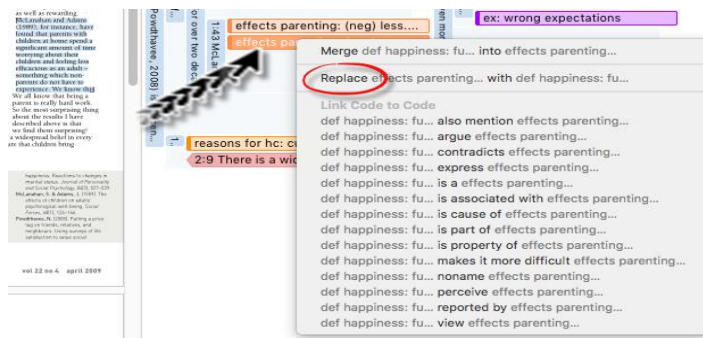


Figure 82: Replacing a code in the margin area

Overview

The Quotation Manager offers the following options: you can add and delete quotations, rename quotations, write comments, retrieve quotations by one or multiple codes, review the content of selected quotations, and review all entities that are linked to a selected quotation. Further options are:

CREATING REPORTS: To create tabular reports in Excel format of the currently displayed content in the main window, or to create reports in Word or PDF format. This is described in detail in the section "Data And Project Export" on page 172.

FILTERING: Another main function of the Quotation Manager is the formulation of queries. When clicking on the filter icon, you can select from a large range of options that allows you to query you data in a variety of ways. This is explained in detail in



the section "Tools For Basic And Advanced Analysis", "Simple Quotation Retrieval". and "Complex Quotation Retrieval (Query Tool)".



Opening the Quotation Manager

Open the Quotation Manager by clicking on the button **QUOTATIONS** above the document area, or select **QUOTATION/SHOW QUOTATION MANAGER** from the main menu.

If you want the Quotation Manager to stay on top, click on the pin icon in the top right-hand corner.

Main Window

The main windows provides an overview of the main properties of a quotation:

QUOTATION ICON: The first column indicates whether a quotation has a comment or not. The icon for commented quotations shows a post-it.

ID (#): The second column shows the quotation ID. It consists of the document number and a number indicating the chronological sequence when a quotation was created in the document. Thus, quotation 9:5 comes from document 9 and was the fifth quotation that was created in this document.

NAME: The default name for textual quotations is the first 100 characters of the quotation. The name for multimedia quotations is "Quotation + ID." All quotation names can be edited in the Inspector (see below).

TEXT CONTENT: The column "text content" displays the first line of textual quotations; nothing for all multimedia quotation.

	#	^	Name	Text Content	Document	Codes	Number of Codes	Comment
	3:24		I think fulfilling that basi...	I think fulfilling t...	Belkin's parenting blog...	children: > happiness	1	
	3:25		I'm happy with my two b...	I'm happy with...	Belkin's parenting blog...	children: > happiness	1	
	3:26		I'm happy with my two b...	I'm happy with...	Belkin's parenting blog...	hard work but: a worthwhile trade-off	1	
	3:27		And I became a mom at...	And I became a...	Belkin's parenting blog...	effects parenting: career pos	1	
	3:28		But my kids do bring me...	But my kids do...	Belkin's parenting blog...	give: joy	1	
	3:29		We decided to have kids...	We decided to h...	Belkin's parenting blog...	reasons for hc: always knew it, reasons fo...	2	
	3:30		I am not having my own...	I am not having...	Belkin's parenting blog...	#fam: don't have children, #fam: don't wa...	3	
	3:31		My daughter (now 3 and...	My daughter (no...	Belkin's parenting blog...	give: joy, give: special moments	2	interesting quote - need to take a
	3:32		If you want to have child...	If you want to ha...	Belkin's parenting blog...	*blog entry, source: personal responsibility	2	
	3:33		I believe it. I believe peo...	I believe it. I beli...	Belkin's parenting blog...	children: < happiness	1	
	3:34		In contrast, the people l...	In contrast, the...	Belkin's parenting blog...	reasons for nhc: self-centered	1	
	3:35		Of course any time you bring it up directly, kids are an absolute joy, and they couldn't imagine lif...	Of course any time you bring it up directly, kids are an absolute joy, and they couldn't imagine lif...	Belkin's parenting blog...	ion, give: joy	2	

Quotation Preview

Figure 83: Main window of the Quotation Manager

The next columns list the document name to a quotation belongs, codes that are attached to it, the total number of codes attached to a quotation, and the comment, in case a quotation comment has been written. This can be done in the Inspector.

LOCATION: This column shows start positions and length by number of characters for textual quotations, start position and duration for audio and video quotations, x and y coordinates as well as width and height by pixels for image quotations. For PDF and image quotations page numbers are provided as well.

The remaining columns in the Quotation Manager show the creator and modifier (name of the author who created and last modified the quotation), the creation date and date of last modification.

The default order of the columns can be changed manually via drag-and-drop.

Previewing Quotation Content

If you select a quotation, its content will be displayed in the preview area (see Figure 176). Multimedia quotations can be played in this area.

Previews can only be shown for one quotation at a time. If you select multiple quotations, the preview is not available. To preview multiple quotations by codes, open the Code Manager (see page 67).



Figure 84: Grouping options for quotations

The Grouped By Option

You can group quotations by a number of different criteria. This offers a first level query. If combined with a code selection in the side panel, you can already combine two criteria, e.g. viewing quotations for a particular code by documents, or document groups. The following grouping options are available:

If you export the content of the main window to Excel/ Open Office Calc (Export as Table), selecting a "grouped by" view creates a new tab for each group in the report.

Deleting Quotations



Select one or multiple quotations (by holding down the **CMD** key for multiple selection) and click on the trash icon. The selected quotations will be deleted with no further confirmation.

Side Panel

The side panel on the left-hand side shows the list of codes/smart codes that already exist in the project and the frequency of application. The icon for regular codes is not filled in, the icon for smart code groups is filled, and all commented codes/smart codes display a post-it.

When selecting a quotation in the main window, all codes and super codes that apply are highlighted in the side panel.

Filtering Quotations By Codes

Select one or more codes in the side panel to filter the list of quotation. At the top of the Quotation Manager, a beige colored bar is displayed showing the currently selected code.

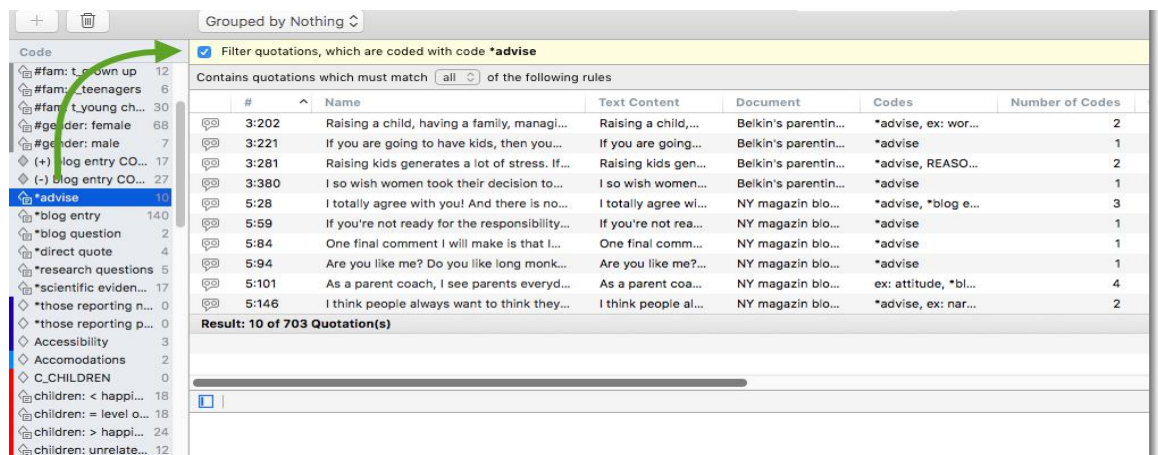


Figure 85: Quotation list filtered by a single code

It is also possible to select more than one code by holding down the **cmd** or **Shift**-key. If so, you can select between filtering quotations, which are coded with **ANY** or with **ALL** of the selected codes.

#	Name	Text Content	Document	Codes
1:6	My analysis in the Journal of Socioeco...	My analysis in th...	Powdthavee's ar...	*scientific evide...
1:9	There is also evidence that the strains...	There is also evi...	Powdthavee's ar...	children: < happ...
1:11	For over two decades, we have been a...	For over two de...	Powdthavee's ar...	*scientific evide...
1:15	Why do we have such a rosy view abou...	Why do we have...	Powdthavee's ar...	reasons for hc:...

Figure 86: Filtering the list of quotations by multiple codes

Quotation Inspector

The inspector for quotations on the left-hand side contains:

- **Quotation name.** You can edit the name here, e.g. summarizing the quote or adding titles for multimedia data
- Information about the document it belongs to.
- **Comment field:** for notes / ideas / summaries / interpretations of the selected quotation.

Codings: Shows all codes that are linked to the quotation.

Linked Quotations (Hyperlinks): Shows all linked quotations and their relation.

Quotation 1:1

P: Basically, I come from a middle-class family-very patriotic, God fearing, and religious. We we...

In Document
Participant 1 (nurse)

Comment

an interesting combination in describing his family: patriotic, religions (God fearing) but also loving, four children was probably more the norm than as it is today, but one can probably assume a 'classical' family, a time period for the mother's death is given, not for the father.

leaving home at 16 might indicate that it was not so loving after all, the yearly reunion more an obligation that an inner drive. Working in menial jobs means he did not have

Codings

- #background: personal
- attitude: patriotism

Linked Quotations

1:60 R: Did you carry any images with you when you went off to war? P: I don't know if I did or not... confirms

continued by 1:93 When I was in Vietnam, I came to grips with the fact that I was gay. And I met someone when I was th...

Figure 87: Quotation Manager inspector

Each linked entity has a secondary menu offering you entity specific functions

The Code Manager

Overview

The Code Manager offers the following options: You can add and delete codes, edit a code name, write code comments, add code colors, retrieve coded segments, create code groups or use the Manager for drag & drop coding. Further, you can review code frequency and density, group membership and all entities linked to a code. Additional options are:





CREATING REPORTS: To create tabular reports in Excel format of the currently displayed content of the main window, or to build and export reports in Word or PDF format. This is described in detail in the section "Data And Project Export".

FILTERING: Another option is to query your codes. When clicking on the filter icon, you can select from a large range of options that allows you to filter your codes in a variety of ways. This is explained in detail in the section "Code Queries".

Opening the Code Manager

Open the Code Manager by clicking on the button **Codes** above the document area, or double-click on the Codes tree in the **Project Explorer**, or select **CODE/SHOW CODE MANAGER** from the main menu.

If you want the Code Manager to stay on top, click on the pin icon in the top right-hand corner.

Main Window

The main window provides an overview of the main properties of a code:

The first column indicates whether the code is a regular code (green diamond), or a smart code (diamond with a gray dot at the bottom left) and whether it has a comment or not (attached post-it).

The second column shows the **code color** (see "Figure 89").

The third column shows the **code name**.

The next two columns indicate the code frequency and density:

Frequency (indicated by the quotation icon): Number of quotations coded with the code

Density (Indicated by the code icon) is the number of linkages to other codes that the user has created.

The density column is followed by one that shows the number of code groups the code belongs to (see "Working with Groups" on page 100), and a field that displays the code comment. Code comments are also shown in the inspector on the right hand side of the Manager (see "Figure 89").

Groups: This column lists the code groups a code is assigned to.

Comment: This column shows the code comment.



Figure 88: Code icons

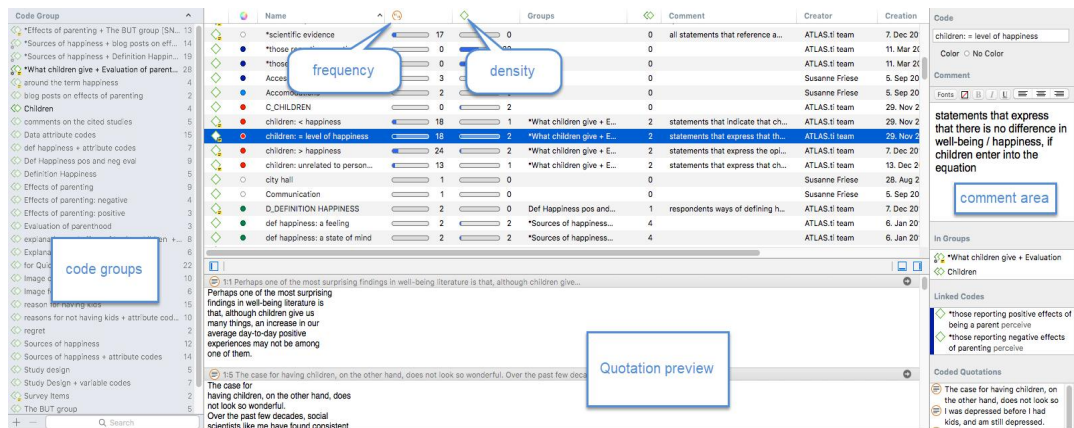


Figure 89: The Code Manager

The remaining columns in the Code Manager show the creator and modifier (name of the author who created and last modified the code), the creation date and date of last modification.

The default order of the columns can be changed manually via drag-and-drop.

Adding Code Color

Click on the circle in the "color column" just before the code name and select a color for each code. Code colors can also be set or modified in the inspector (see below).

See Figure 90 on how code colors are displayed in the margin.

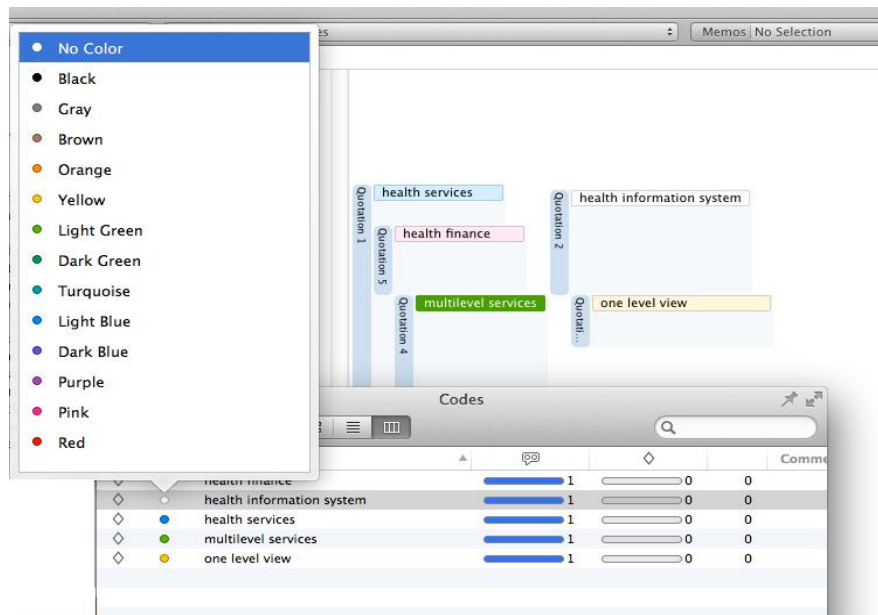


Figure 90: Adding code colors and display in margin area

Reviewing Coded Quotations

At the bottom of the main window, all quotations coded with the currently selected code are shown including references. Click on the right-arrow on the right-hand side to view a selected quotation in context.

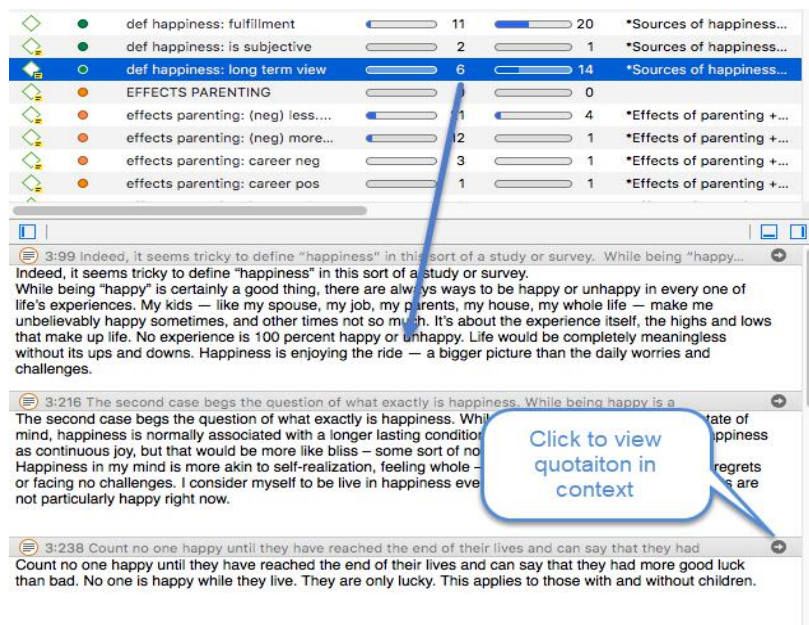


Figure 91: Previewing quotations coded with a selected code

Adding and Deleting Codes



To add a code, click the + button at the top left of the Code Manager.

To delete codes, select one or multiple codes and click on the trash bin icon. In a second step you will be asked whether all quotations that are no longer linked to any code should also be deleted.

The Grouped By Option

The **GROUPED BY...** option that you find in all entity managers allows you to sort your codes by the following criteria:

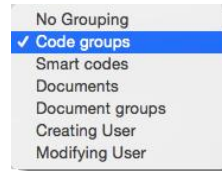


Figure 92: Grouped by... options in Code Manager

Figure 93 below shows the list of codes sorted by code groups:

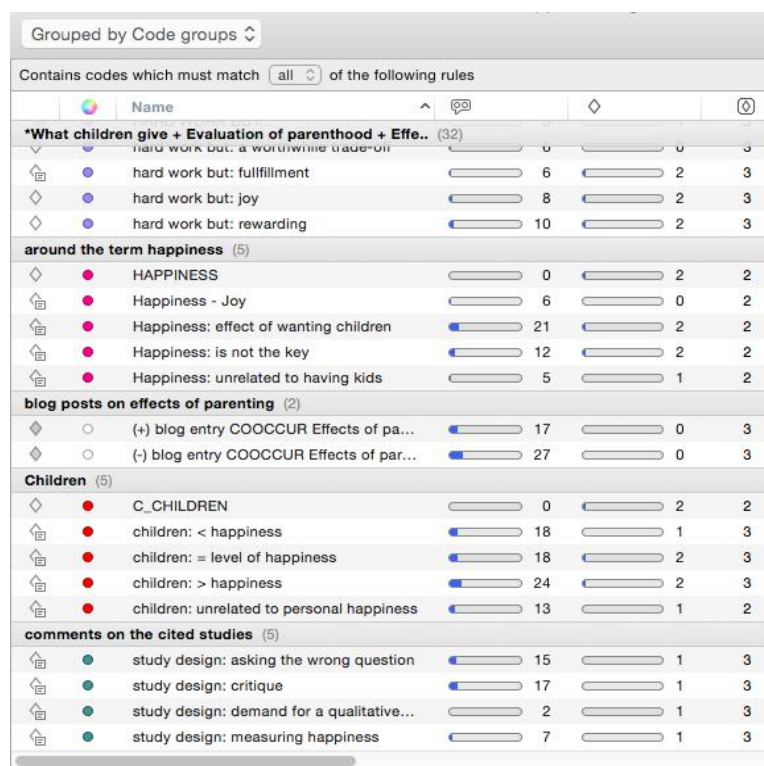


Figure 93: Display of codes by code groups in Code Manager

If you export the content of the main window to Excel/ Open Office Calc (Export as Table), selecting a "grouped by" view creates a new tab for each group in the report.

Side Panel

The side panel on the left-hand side shows the list of available code groups and smart groups. Similar to the code icons, the icon for smart code groups has a gray dot at the bottom left, and all commented groups display a post-it.

When selecting a code in the main window, all code groups / smart groups that apply are highlighted in the side panel:



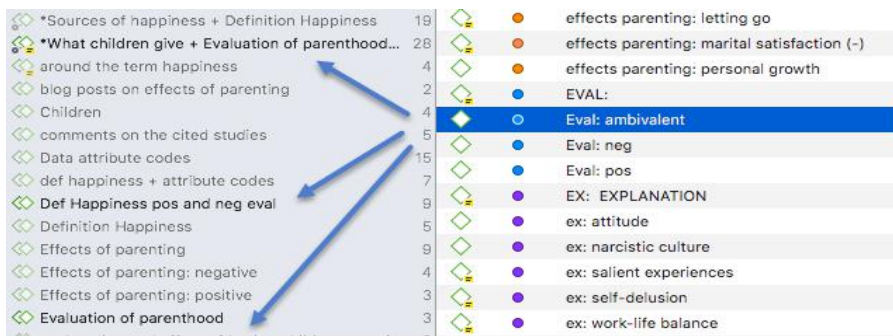


Figure 94: Highlighted code groups in side panel

Filtering Codes By Code Groups

When selecting a code group in the side panel, only the codes that belong to the selected code group remain in the list.

Select one or more code groups in the side panel to filter the list of codes. At the top of the Code Manager, a beige colored bar is displayed showing the currently selected code groups.

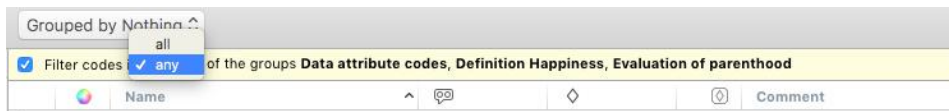


Figure 95: Filtering the list of codes by code groups

You can select between filtering codes that are members of **ANY** of the selected code groups, or that are members of **ALL** of the selected groups. "Any" means that all of the codes of the selected code groups are listed. "All" means that only codes are listed that have multiple memberships, i.e. in all of the selected code groups.

Creating New Code Groups

- Click on the + sign at the bottom of the side panel to add a new code group.
- Alternatively, you can also right-click inside the side panel to chose these options from the secondary menu.
- A third way of creating code groups is to select a number of codes in the main window of the Code Manager by holding down the **cmd** or **SHIFT** key and to drag-and-drop them into the side panel (see also "Common Procedures" in the section on "Working with Groups.")

Video Tutorial: [ATLAS.ti Mac: Grouping the Project Codes](#)

Code Inspector

The Code Inspector on the left-hand side contains:

- A field for the **CODE NAME**. You can edit any code name there.
- A field for the **CODE COLOR**. Click on the circle if you want to change the code color.
- COMMENT**: Use the comment field to write a code definition or other notes like a first interpretation or summary of all segments coded with this code.
- IN GROUPS**: Here you can see to which code groups the code has been assigned to. Right-click to open the Group Manager or to remove the code from the Code Group.
- LINKED CODES**: Shows all codes that have been linked and the relation how they are linked.
- Coded Quotations**: Lists all quotations the code has been assigned to.
- Links**: Lists all memos the code is linked to.

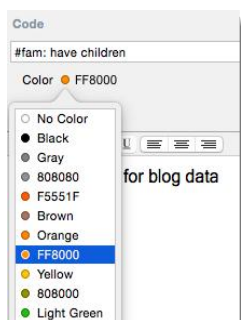


Figure 96: Select or exchange code color in inspector

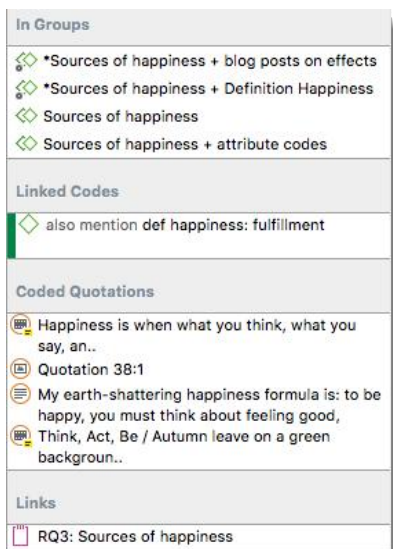


Figure 97: Reviewing code links in the inspector

Each linked entity has a secondary menu offering you entity specific functions.

Code List Import & Export

Importing A List of Codes

You can prepare a list of codes including code descriptions, code groups and colors in Excel and import the Excel file. This is how you need to prepare the Excel file:

Code	Code Definition	Code Group 1	Code Group 2
D_DEFINITION HAPPINESS	respondents ways of defining happiness for themselves	Definition happiness	
def happiness: a feeling	something that cannot be define precisely	Definition happiness	
def happiness: a state of mind	feelings of happiness are related to attitude	Definition happiness	
def happiness: fulfillment	defines also in contrast to being happy and happiness	Definition happiness	
def happiness: is subjective	something different for everybody	Definition happiness	
def happiness: long term view	being happy is short-term / happiness is long term	Definition happiness	
EFFECTS NEG	statements that deal with negative effects parenting has on one personally or on one's life	Effects parenting negative	Effects of parenting
effects neg: less fun/ satisfaction	fun aduct activities need to be reduced	Effects parenting negative	Effects of parenting
effects neg: loss of freedom	parenting experienced as burden as ones action radius is diminished	Effects parenting negative	Effects of parenting
effects neg: more worries/stress	more worries, more stress / less burdened before, more chaos	Effects parenting negative	Effects of parenting
effects neg: on career	negative effects on professional life due to being a parent	Effects parenting negative	Effects of parenting
effects neg: on financial issues	higher expenses, loss of income	Effects parenting negative	Effects of parenting
effects neg: on relationships	relationships suffer	Effects parenting negative	Effects of parenting

Figure 98: Preparing a code list for import

You can enter headings like Code, Code Definition, Code Group 1, Code Group 2, but you do not have to. If you do not enter headings, the columns are interpreted in the following order:

- 1. column: code name
- 2. column: code description (comment)
- 3. column: code group
- 4. column: code group
- all subsequent columns: further code groups

If you color the code names, this color is used in ATLAS.ti as code color.

■ To import the Excel file, select the **CODE / IMPORT CODE LIST**.

The finder offers the following three options at the bottom of the window:



Figure 99 Ignore header

If you have added header information like code, code definition, group, etc., activate the first option **Ignore header (first row) during import**.

Select **Update existing codes**, if the project already contains codes that have the same name as already existing codes.

Select **Keep existing codes**, if you want to add all codes from the Excel file to the already existing list of codes.

Exporting The List Of Codes

■ If you want to export your codes including color, code comments and groups to Excel, select **CODE / EXPORT CODE LIST**.

Figure 98 shows an example output.

Code Tree And Code Forest

■ [Video Tutorial: Code Tree and Code Forest - explained in 10 minutes!](#)

The **Code Forest** offers a tree-like view of your code system representing the relations that you manually have established between codes. The code forest shows all of your codes and their linkages, whereby the **Code Tree** only displays one code and its related codes.

As the code tree displays the code-link relations of one code only, it can only be opened if a code is selected.

Manually established relations are those that you have created either by dragging and dropping a code on top of another code either in the Code Manager or the margin area, or by linking two codes to each other in a network (see "Linking Nodes In Networks". When linking codes to each other, you need to select a relation. A relation can be transitive (e.g. is cause of), asymmetric (e.g. is property of) and symmetric (e.g. is associated with). Transitive and asymmetric relations are directed relations, symmetric relations are non-directed, which can also be seen in a network by the arrows at both ends of the link. Let's consider the following network:

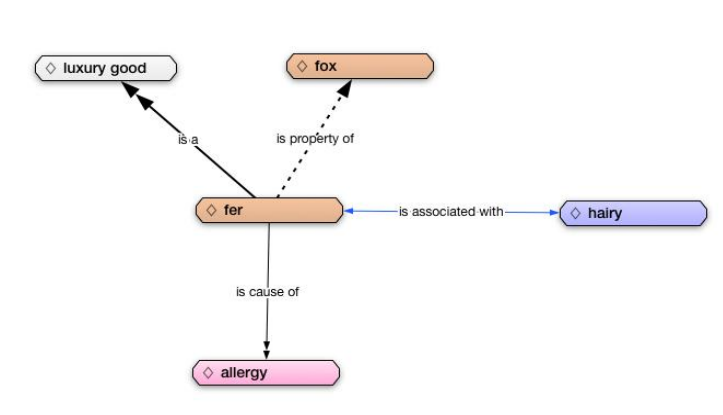


Figure 100: Network showing different types of relations

It contains the following relations:

- is a <transitive>
- is cause of <transitive>

- is property of <asymmetric>
- is associated with <symmetric>

In the code forest, the above linkages look as follows:



Figure 101: Code Forest

Transitive and asymmetric relations are displayed in a hierarchical manner and symmetric relations appear twice as they are non-directed. The type of relations are displayed in the Links section of the inspector if you select a code. In the future, the links will also be displayed in the Code Forest window next to each code, similar to the display in the Windows version.

Code Tree & Code Forest Actions

- Rename:** You can rename a code in the Code Forest or Code Tree (in-place rename: select a code, then left-click again).
- Duplicate:** Right-click and select the duplicate option from the secondary menu. A duplicate code is a clone of the original code. Thus, the duplicate code inherits all links, relations and comments of the original code.
- Change code color:** Right-click and select the Change Color option from the secondary menu. Or select a code and change its properties in the inspector.
- Access quotations:** Select a code. Then select linked quotations from the Links section in the inspector. Or double-click a code and select quotations from the quotation list that opens.
- Code:** Use the Code Forest or Code Tree for drag-and-drop coding.

Using The Code Forest To Implement a Hierarchical Code Structure

In principle you can use the code forest to implement a hierarchical code structure. You need to set it up in a way so that all parent codes are displayed only once and all child codes underneath its corresponding parent, as shown in Figure 103. This can be achieved by linking parent and child codes using transitive relation like "is a."

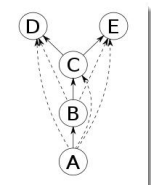


Figure 102: Nodes linked via transitive relations

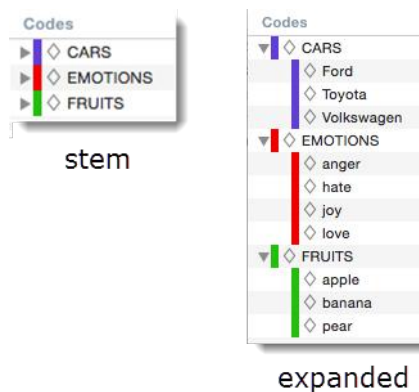


Figure 103: Hierarchical code tree structure

Transitivity implies that if code A is "cause of" Code B and Code B is "cause of" code C, then Code A also is "cause of" Code C and so on.

Why Symmetric And Asymmetric Relations Cannot Be Used In A Hierarchical Code System

Although asymmetric relations are directed relations and are displayed in a tree-like manner, they are not recursive and thus are ignored by the children and parent operators. Figure 104 shows a typical asymmetric relation. The network illustrates

family relations. Bob, Tina and Chris and they descendants (see Figure 105) are all part of the same family. All family members can be linked to the family node via a transitive relations like "is part of." But for most relations among family members, asymmetric relations need to be used. Bob is the brother of Tina, but not of Chris. A transitive relation would imply that the same relation used between Bob and Tina also applies to the link between Bob and Chris.

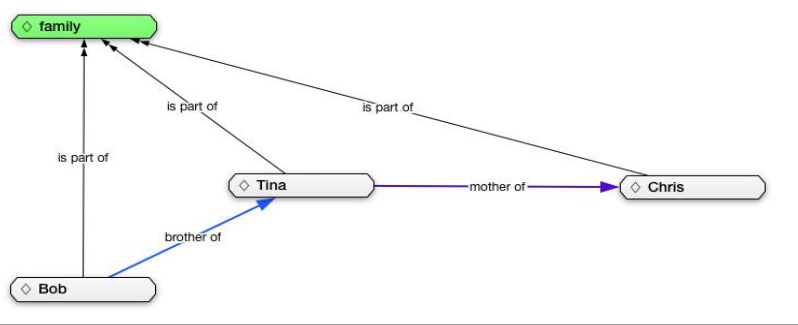


Figure 104: Example of a typical asymmetric relation

It is possible to express the relationship using a transitive relation. But then you would need to call it "descendant of" (see Figure 105). The sibling relation between John, Mary and Chris however cannot be expressed using a transitive relation; it requires a symmetric link.

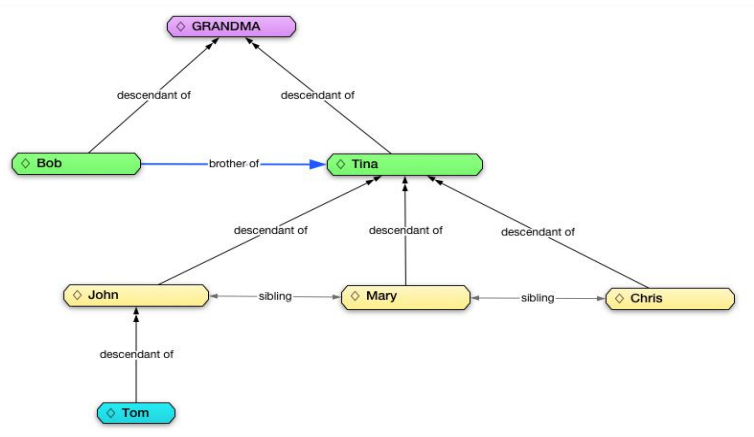


Figure 105: Showing family relations using transitive, asymmetric and symmetric relations

The corresponding code tree for the GRANDMA network looks like this (see left)

As the links between the various codes are a combination of transitive, symmetric and asymmetric relations, this code tree is not strictly hierarchical. Bob is displayed as part of the stem, but also as sub-branch of Tina. Further, the codes Chris, John and Mary are displayed as sub codes of Tina, but also occur as sub codes elsewhere.

The code tree in Figure 106 is typical when using the ATLAS.ti network functionality to express conceptual relations between codes. It supports the methodological process of theory building. Using this function to set up a hierarchical code system is an alternative application. Methodological speaking, this implies that you use the network function for descriptive purposes only. This may suit many projects well.

If you are interested in building conceptual relations between codes in networks, we recommend to work with prefixes to sort your codes in a hierarchical manner. This allows to use code links and relations and the network function for an additional layer of analysis after coding. The above examples would look as follows using prefixes in a flat code system:

```

CARS
cars: Ford
cars: Toyota
cars: Volkswagen
EMOTIONS
emotions: anger
emotions: hate
emotions: joy
emotions: love
FRUITS
fruits: apple
fruits: banana
fruits: pear
FAM X MEMBERS
fam X members: Bob
fam X members: Chris

```

```
fam X members: grandma
fam X members: John
fam X members: Mary
fam X members: Tina
fam X members: Tom
```

Building A Code Hierarchy

A frequent question is how to add a structure to the otherwise flat code list in ATLAS.ti. 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:



Figure 106: Code tree for GRANDMA

```
category A_sub 1
category A_sub 2
category A_sub 3
category B_sub 1
category B_sub 2
category B_sub 3
etc.
```

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 sub code 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 sub code or decide that an existing sub code fits after all. Adding colors will also help you to distinguish between different types of level of codes.

```
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
```

etc.

The sort 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.

All terms preceding a colon (:) indicate the main category name; the terms following the underscore or colon constitute sub codes. Other projects may require additional sub levels. But don't overdo it!

As main category code and sub code 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.

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 a code, consider using quotation comments or the code comment instead.

If you want to learn more about relation types in network theory, watch the following video: [Did you ever wonder what's behind the ATLAS.ti network function?](#)

Auto-Coding

Auto-Coding = Text Search + Automatic Segmentation + Coding

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 (e. g., speaker turns in group interviews), or if you are dealing with a large amount of text material. 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.

Video Tutorial: [ATLAS.ti Mac: Auto Coding](#)

To open the Auto-Coding Dialog, select **CODES / AUTO CODING** from the main menu.

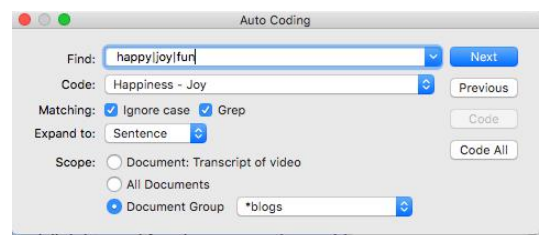


Figure 107: The auto-coding dialog

FIND: A search expression can consist of single words or entire phrases. You can also create more complex search expressions using regular expressions (GREG). See "Regular Expressions (GREG)"

CODE: Click on the down arrow to choose an existing code from the list. If the code you need is not available yet, create one on the Code Manager.

EXPAND TO: When a matching string is found, expand the size of the segment to the following lengths:

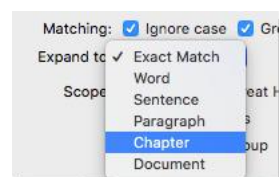


Figure 108: Options for expanding a match

- The *exact match* only
- The *word* surrounding the matched string
- The *sentence* surrounding the matched string
- The *paragraph* surrounding the matched string
- The *chapter* surrounding the matched string – a chapter is all text until the next empty line.
- The *entire document*.

SCOPE OF SEARCH can be the selected document only, all textual documents, or a set of texts from a document group.

You can select the option **CODE ALL** without checking each hit, or you can review each hit by clicking the **NEXT** or **PREVIOUS** button. Then select **CODE** for each instance that you want to code.

GREP searches are very flexible.

Example

Based on the GREP search expression shown in Figure 107, all occurrences of words that contain happy or joy or fun in all documents are found and the containing sentence is coded with the code "Happiness-Joy." The GREP **OR** expression ("|") can be entered using the short-cut **ALT+7**.

Last used search terms are saved:

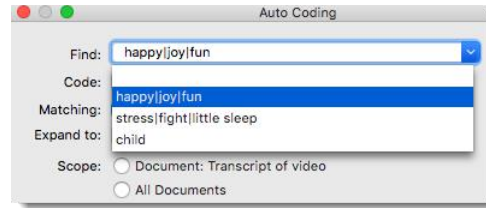


Figure 109: Select previously used search terms for reuse

Regular Expressions (GREP)

Regular Expressions efficiently exploit the syntactical properties of the technical device called "text."

GREP is a well-known search tool in the UNIX world. The original GREP tool printed each line containing the search pattern, hence the acronym GREP ("G**l**obally look for **R**egular **E**xpression and **P**rint).

In ATLAS.ti, the results of a GREP search are not printed line-by-line; rather, the text matching the search pattern is highlighted on the screen, or you can automatically code the results including some surrounding context.

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 search expression `:d:d[7-9]` 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.

GREP Examples

GREP Expression	Description
^	Matches an empty string at the beginning of a line.
\$	Matches an empty string at the end of a line.
.	Matches any character except a new line.
+	Matches at least one occurrence of the preceding expression or character.
*	Matches the preceding element zero or more times. For example, <code>ab*c</code> matches "ac," "abc," "abbbc," etc.
?	Matches the preceding element zero or one time. For example, <code>ba?</code> matches "b" or "ba."
[]	Matches a range or set of characters: <code>[a-z]</code> or <code>[0-9]</code> or <code>[aeiou]</code> . For example: <code>[0-9]</code> finds all numeric characters, while <code>[^0-9]</code> finds all non-numeric character
\b	Matches an empty string at a word boundary
\B	Matches an empty string not a word boundary
\<	Matches an empty string at the beginning of a word
\>	Matches an empty string at the end of a word
\	The escape character disables the special GREP functionality of the following character. For example: <code>\[</code> matches an opening bracket.
	OR. Enclose ORed expressions with parentheses if OR should be restricted to certain sequences of characters or expressions

The expression `man|woman` matches "man" and "woman."

You could also use `(|wo)man` to the same effect. `H(a|e)llo` matches "Hello" and "Hallo." `H(a|e)+llo` matches "Haaaaallo" as well as "Heeeeeeeeeaeaeaeallo."

And how about the (angry|lazy|stupid) (man|woman) (walk|runn|play|fight)ing with the gr(a|e)y dog - get the idea?

GREP Expression	Description
<code>\d</code>	Matches any digit (equivalent to [0-9])
<code>\D</code>	Matches anything but a digit
<code>\s</code>	Matches a white-space character
<code>\S</code>	Matches anything but a white-space character
<code>\w</code>	Matches any word constituent character
<code>\W</code>	any character but a word constituent

These escapes are also allowed in character classes: `[\w+-]` means "any character that is either a word constituent, or a plus, or a minus."

`<\w+\>` matches any whole word

`<[:alpha:]+\>` matches whole words containing only alphanumeric characters.

Character classes can also include the following elements:

<code>[:alnum:]</code>	Any alphanumeric, i.e., a word constituent, character
<code>[:alpha:]</code>	Any alphabetic character
<code>[:cntrl:]</code>	Any control character. In this version, it means any character whose ASCII code is < 32.
<code>[:digit:]</code>	Any decimal digit
<code>[:graph:]</code>	Any graphical character. In this version, this mean any character with the code >= 32.
<code>[:lower:]</code>	Any lowercase character
<code>[:punct:]</code>	any punctuation character
<code>[:space:]</code>	Any white-space character
<code>[:upper:]</code>	Any uppercase character
<code>[:xdigit:]</code>	Any hexadecimal character

Note that these elements are components of the character classes, i. e. they have to be enclosed in an extra set of square brackets to form a valid regular expression. A non-empty string of digits or arbitrary length would be represented as `[:digit:]+`

Examples of GREP Searches

In the following, a few search examples are presented showing the matching GREP expression in the column on the right.

Examples	GREP expression
Find text (of arbitrary length) enclosed within brackets. Note that the brackets have to be escaped with "\ " as they are themselves control characters	<code>\[.*\]</code>
Find all years between 2001 and 2004:	<code>200[1-4]</code>
Find all numbers with 2 digits at the end of a line or paragraph:	<code>\d\d\$</code>
Find all "Meyer"s - spelled in four different ways:	<code>M[ae][iy]er</code>
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: <code>^\.:d</code> Otherwise, the letter "d" would be interpreted as a digit.	<code>^.[:]</code>

You can test and debug any regular expression your formulate on this web site: <https://regex101.com/>

Focus Group Coding

If you work with focus group data, you cannot work with document groups when it comes to the individual speakers in each focus group. Often a focus group has a mix of male and female participants, the participants might be in different age groups and have different educational levels. Thus, often it is not possible to add an entire focus group file to a document group gender: male, or gender: female. Focus Group data need to be treated differently. Each speaker unit needs to be identified and coded. If you prepare your focus groups transcripts in a way that each speaker can easily be identified, speaker units and speaker attributes can be coded automatically by ATLAS.ti. See "Guidelines For Preparing Focus Group Data" below.

This will allow for later comparisons of statements by the different speakers or speaker attributes like gender or educational level. The analysis tool that you need for such comparison is the “Code Co-Occurrence Table”.

Comparing statements of different groups depending on data type:

- If you have interview data, you will use the “Code Document Table” to compare statements of different respondent groups.
- If you have focus group data, you need the “Code Co-Occurrence Table” to compare statements of different respondent groups.

Guidelines For Preparing Focus Group Data

Requirements

There is only one requirement when preparing focus group data: Each speaker or other identifying information needs to have a unique identifier and if possible should be applied consistently throughout the entire transcript. ATLAS.ti offers two default identifiers:

Pattern 1:

<speaker name:> It could also be any other identifier. It does not have to be a name.

Pattern 2:

<@speaker name:> It could also be any other identifier. It does not have to be a name.

An example transcript following pattern 1 might look like this:

```
Alex: I don't know, I'm the sort, I don't really struggle making friends cos everyone tells me I've got a big mouth and I don't stop talking [laughs] ...

Tom: So is that how, is that how you met just, just through you striking up a conversation?

Deb: I'm trying to think exactly [laughs] I think that's what it was, we were both in the same research methods class ...
```

Or like this:

```
Alex:
I don't know, I'm the sort, I don't really struggle making friends cos everyone tells me I've got a big mouth and I don't stop talking [laughs] ...

Tom:
So is that how, is that how you met just, just through you striking up a conversation?

Deb:
I'm trying to think exactly [laughs] I think that's what it was, we were both in the same research methods class
```

It is also possible to add further information to each speaker like their gender, age group, educational level etc. This way, also this information will be automatically coded. An Example might look like this:

```
Alex: gender male: age group 1: education level high school:
I don't know, I'm the sort, I don't really struggle making friends cos everyone tells me I've got a big mouth and I don't stop talking [laughs] ...

Tom: gender male: age group 1: education level some college:
So is that how, is that how you met just, just through you striking up a conversation?

Deb: gender female: age group 1: education level high school:
I'm trying to think exactly [laughs] I think that's what it was, we were both in the same research methods class ...
```

The speaker unit of Alex will then be coded with Alex, gender male, age group 1 and education level high school. Before the data is coded, you can modify the code labels or add further codes.

Custom Pattern

You can also define your own pattern, or use GREP expressions in case there are typos or an inconsistent use of speaker or other identifiers. For instance, the regular expression: `To+(m|n)` matches "Toom," "Ton," or "Toon" to find different spellings of the name "Tom". For more information on GREP, see “Regular Expressions (GREP)”.

Recommendation

For readability you may want to consider to start each speaker unit on a new line. Additionally, you may want to enter an empty line between speaker units. Both is not required. When a pattern is recognized the chosen code(s) are applied from

the first letter of the pattern to the start of the next recognized pattern. Therefore it does not matter whether a new unit starts on a new line or whether there is an empty line in between.

Coding Focus Group Data

Load a focus group transcript and select **FOCUS GROUP CODING** from the **CODE** menu.

Select a pattern for recognizing speaker units:

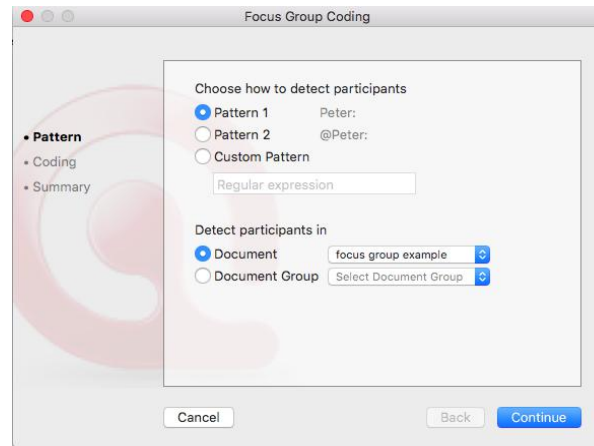


Figure 110: Focus Group Coding dialog

If your transcript looks as follows, select Pattern 1:

```
Alex: I don't know, I'm the sort, I don't really struggle making friends cos everyone
tells me I've got a big mouth and I don't stop talking [laughs] .....
Tom: So is that how, is that how you met just, just through you striking up a
conversation?

Deb: I'm trying to think exactly [laughs] I think that's what it was, we were both in
the same research methods class.....
```

If your transcript looks as follows, select Pattern 2:

```
@Alex: I don't know, I'm the sort, I don't really struggle making friends cos
everyone tells me I've got a big mouth and I don't stop talking [laughs] ...

@Tom: So is that how, is that how you met just, just through you striking up a
conversation?

@Deb: I'm trying to think exactly [laughs] I think that's what it was, we were both in
the same research methods class ...
```

Custom Pattern

If you have used a different way to indicate a speaker, enter your own pattern. You can also use this function to auto code any data that has a specific structure. So it does not necessarily have to be a speaker. It could be a date, a number, or any other type of identifier. As mentioned above, regular expressions can also be used as custom pattern. For instance:

`[A-Z]+`: only recognizes identifiers consisting of letters from A to Z.

`[A-Z]+[0-9]+`: recognizes identifiers that consist of a combination of letters and numbers

See "Regular Expressions (GREP)" for further information.

After selecting a pattern, click **CONTINUE**.

ATLAS.ti lists all speakers or identifiers that fit the selected pattern and adds the name(s) as code. These might also include items that you would not classify as speakers or identifiers but fit the pattern. If so, you can deselect them.

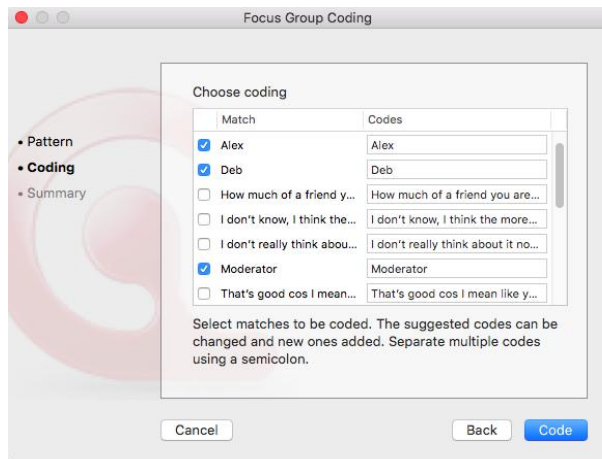


Figure 111: Select identifiers and add codes

- Select all speakers or identifiers that you want to code.
- Check the suggested codes and add additional ones, if you want to code the speaker unit or section with multiple codes. If you enter multiple codes, they need to be separated by a semicolon.

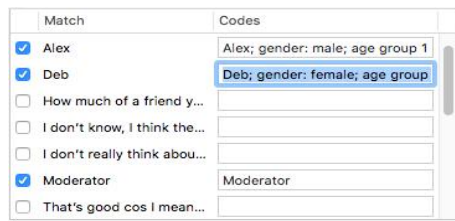


Figure 112: Add all codes that apply

As described in the section “Guidelines For Preparing Focus Group Data,” you could also add information that describe the speakers like age, gender, educational level, etc. into the transcript. Those would be picked up as identifiers and codes, and there would be no need to add attribute codes to each speaker. The Choose Coding window might then look like this:

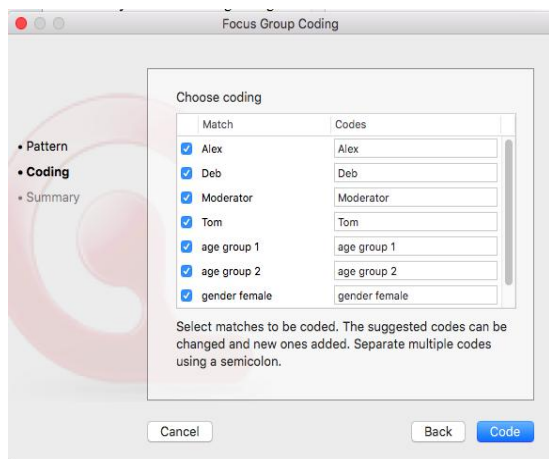


Figure 113: Choose Coding window if attribute codes have already been entered in the transcript

If you enter codes that already exist in your code list, they will not be duplicated. In a future update, you will be able to select existing codes from a list.

- Click on the button **CODE**.



Figure 114: Summary report after focus group coding is finished

ATLAS.ti codes all speaker unit or identified sections. Once it is done, you see the summary screen:

Double-check the results in context and take a look at the Code Manager. ATLAS.ti creates a code group from all codes that have been entered in the previous step in the Coding window called 'Focus Group Coding'.

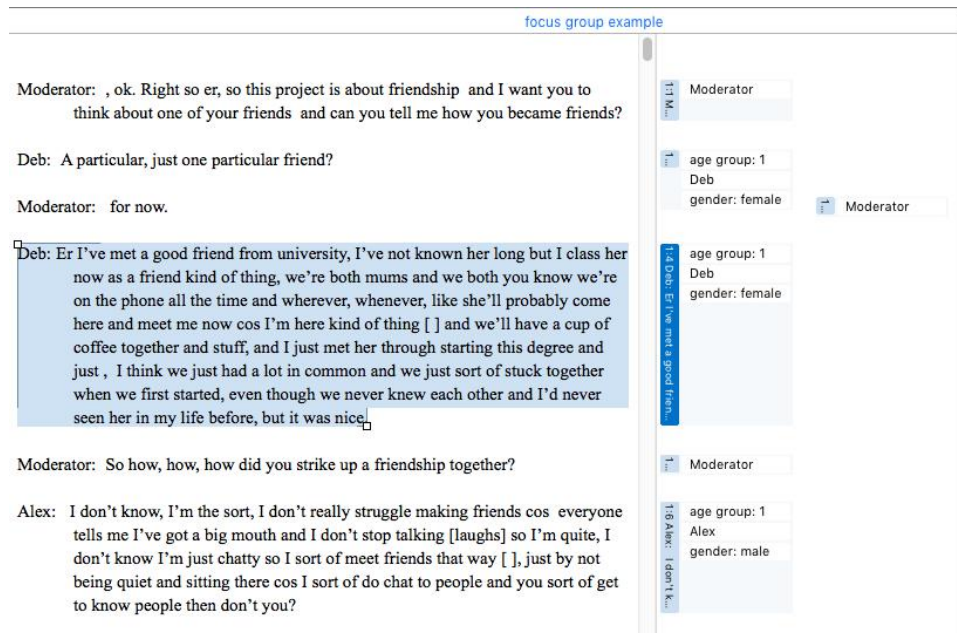


Figure 115: Result of focus group coding

Working With Memos

Uses for memos:

- Take methodological notes
- Use as "bulletin board" in team projects
- Use as project planning device
- As a primary document
- Create code lists

Overview

Memos are explanatory and descriptive texts that may be **associated with other "entities"** 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 analytic process**, keeping a journal of to-dos. Memos may also serve as a **repository** for symbols, text templates, and embedded entities that you may want to insert into documents or other memos.

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.

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 confuse the name with its content!

A comment is always a part of another entity;. A memo is an entity 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 simply name a concept. Comments exclusively belong to one entity.

Comments are not displayed in browsers separately from the entity to which they are attached. Memos can either be free-standing, or they can be linked to quotations, codes and other memos. Further it is also possible to write a comment for each memo, e.g. a team member can comment on an interpretation written by another colleague. Or you can write a comment to yourself, for instance that you need to revisit this memo; or that this memo is an important building block for answering a particular research question, etc.

Video Tutorial: [ATLAS.ti Mac: Working with Memos](#)

Additional reading:

- http://downloads.atlasti.com/library/Friese_2009-09_1.pdf
- http://downloads.atlasti.com/library/Friese_2008-12_8.pdf

Creating A New Memo

- Open the Memo Manager by clicking on the Memos button or select **MEMO / SHOW MEMO MANAGER** from the main menu.
- Click on the + sign to add a new memo. Enter a name.
- Double-click to open it. It will open as a new tab.

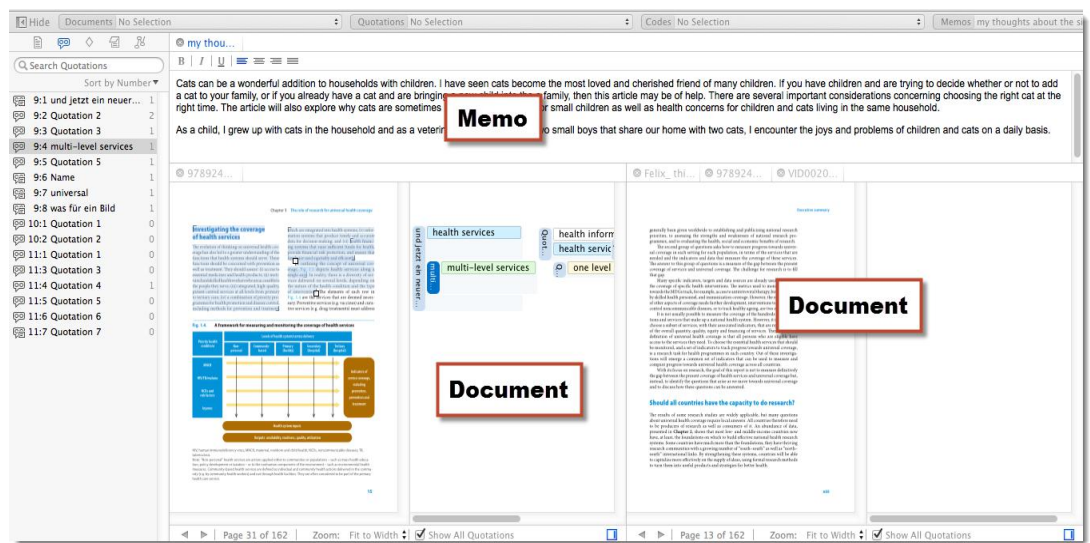


Figure 116: Alternative arrangements of documents and memo

Loading Memos

You can also open a memo into its own region, so that you can see both the memo and your data. To do so, drag the memo tab to the right, left, top or bottom edge of the document area. Once you see a blue band, you can drop it (see Figure 117).



Figure 117: Open a memo, document or network in a new region

Split your screen vertically or horizontally (see also "Multiple Document View").

To link a memo to a data segment, drag & drop it from the Memo Manager onto a quotation, or select a memo in navigator and drag & drop it from there.

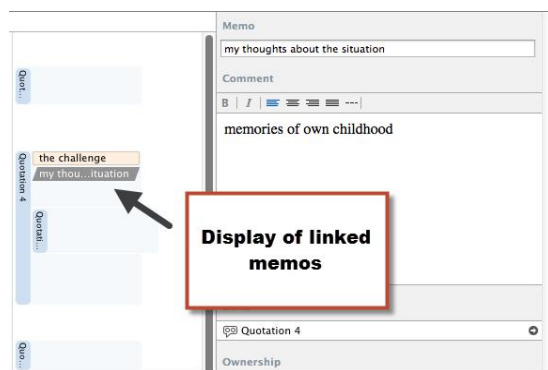


Figure 118: Working with memos

When selecting a memo in the margin area, the inspector on the right-hand side is displaying the detailed information for this memo (see Figure 118).

The Memo Manager

Overview

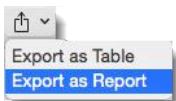
The Memo Manager offers the following options: You can add and delete memos; edit memo names; write memo comments; create memo groups; or use the Manager for drag & drop linking. Further, the number of links to quotations and codes are displayed, and you can review group membership and all entities linked to a memo. Other options are:

CREATING REPORTS: to create tabular reports in Excel format of the currently displayed content of the main window, or to build and export reports in Word or PDF format. This is described in detail in the section "Data And Project Export."

FILTERING: Another option is to filter memos by various criteria.. This is explained in detail in the section "Memo Queries" and below .

Opening The Memo Manager

Open the Memo Manager by clicking on the button **MEMOS** above the document area, or select **MEMO / SHOW MEMO MANAGER** from the main menu.



If you want the Memo Manager to stay on top, click on the pin icon in the top right-hand corner.

Main Window

The main window provides an overview of the main properties of a memo:

The first column whether a memo has comment or not (attached post-it).

Name: The second column shows the memo title.

The next two columns indicate the number of quotations and codes the memo is linked to.

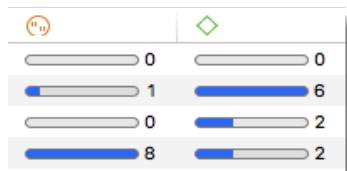


Figure 119: Frequency of linked quotations and codes

COMMENT: If you have written a comment for a memo (this is in addition to the content of the memo), it will be shown here.

LENGTH: This column displays the total number of characters that you have written as memo content.

The remaining columns in the Memo Manager show the creator and modifier (name of the author who created and last modified the code), the creation date and date of last modification.

The default order of the columns can be changed manually via drag-and-drop.

Adding and Deleting Memos



To add a memo click on the **+** button at the top left of the Memo Manager.

To delete memos, select one or multiple memos and click on the **bin** icon.

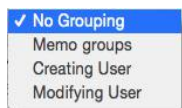


Figure 120: Grouped by... options in Memo Manager

The Grouped By Option

The **GROUPED BY...** option that you find in all entity managers allows you to sort your codes by the criteria depicted in Figure 120.

If you export the content of the main window to Excel/ OpenOffice Calc (**EXPORT AS TABLE**), selecting a "grouped by" view creates a new tab for each group in the report.

Side Panel

The side panel on the left-hand side shows the list of available memo groups and smart groups. The icon for smart memo groups has a gray dot at the bottom left, and all commented groups display a post-it.

When selecting a memo in the main window, all memo groups / smart groups that apply are highlighted in the side panel.

Filtering Memos By Memo Groups

When selecting a memo group in the side panel, only the memos that belong to the selected memo group remain in the list. It is also possible to select multiple memo groups.

To filter the list of memos, select one or more memo groups in the side pane. At the top of the Memo Manager, a beige colored bar is displayed showing the currently selected memo groups.



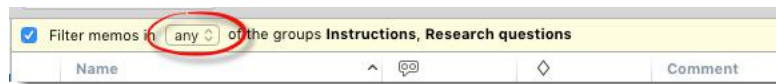


Figure 121: Filtering the list of memos by one or more selected groups

You can select between filtering memos that are members of **ANY** of the selected memo groups, or that are members of **ALL** of the selected groups. "Any" means that all of the memos of the selected memo groups are listed. "All" means that only memos are listed that have multiple memberships, i.e. in all of the selected memo groups.

Creating New Memo Groups

Click on the **+** sign at the bottom of the side panel to add a new memo group. Alternatively, you can also right-click inside the side panel to choose these options from the secondary menu. A third way of creating memo groups is to select a number of memos in the main window of the Memo Manager by holding down the **cmd** or **SHIFT** key and to drag-and-drop them into the side panel (see also "Common Procedures" in the section on "Working with Groups.")

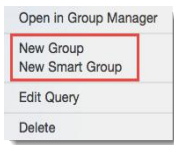


Figure 122: Secondary menu in the side panel

Memo Inspector

The Memo Inspector on the left-hand side contains:

- A field for the memo **TITLE**. You can make changes to the title there.
- **COMMENT**: Use the comment field to write a comment on the memo. This can be useful if you work in a team and want to comment on a memo someone else has written. Or it could also be a note to yourself; for instance, if this is a memo that you later want to use in chapter x or y of your thesis or research report.
- **IN GROUPS**: Here you can see to which memo groups the memo belongs. Right-click to open the Group Manager, or to remove the memo from the Memo Group. Y
- **LINKED CODES**: Lists all codes that have been linked to the memo.
- **LINKED QUOTATIONS**: Shows the quotations that have been linked to the memo.

Each linked entity has a secondary menu offering you entity specific functions.

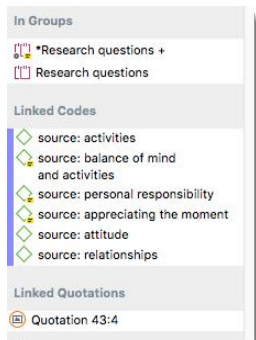


Figure 123: Links section in Memo Inspector

Working With Survey Data

Overview

These days, a great many surveys are conducted through online tools. A positive side effect is that (a) all data is immediately available in digital format, and (b) respondents are often willing to provide longer answers to open-ended questions. This was rarely the case with paper-and-pencil surveys. Statistical programs like SPSSTM offer some options to analyze open-ended questions, but basically require you to encode each answer with a number. A proper qualitative analysis of the answers is not possible with these tools. ATLAS.ti, however, does permit comprehensive analysis with great ease and in great depth.

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

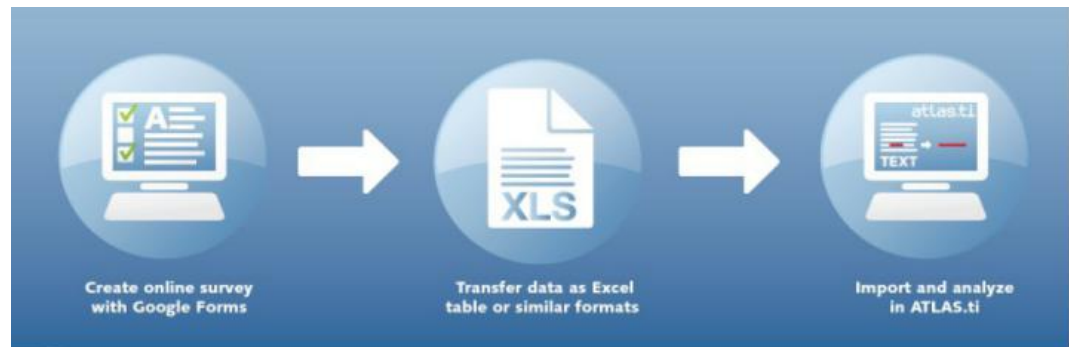


Figure 124: Work flow when importing survey data

Online surveys can be created using a variety of tools. What most of them have in common is that they let you export 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, and the answers from each respondent. Questions can be of different types, such as 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:

Open-ended question: question answer	Code (and code comment) Content of a quotation
Single Choice 0/1	Document group
Single Choice > 2 options	Document group from question plus value
Multiple Choice	Document group 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 your 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. 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 document groups.
- 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
!	Defines the column to list the names of the primary documents. This column can be omitted. If you do not want to provide a specific name for each document, ATLAS.ti automatically creates this column. The default name for each document is case 1, case 2, case 3 and so on.

Prefixes and their interpretation	
^	Defines the column to list the primary document's author
&	Defines the primary document's date, expects ISO8601 format, see: http://www.cl.cam.ac.uk/~mgk25/iso-time.html Example: 4th of February 1995 or 1995-02-04 in ISO8601 format = YYYYMMDD = 19950204
<	Ignore this column, use to exclude stuff inserted by the survey tool
.	Creates a document group 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 document group.
:	Creates a document group from the field name plus cell value. Use for single choice question like gender.
#	Creates a document group 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 entity's comment field. This can be applied to cells resulting in document groups or codes.

! caseID	&dateTime	^Name	.Academic	:Gender	#Favorites::What bands do you listen to regularly?	Tell us a dream	Open End::How do I create a question that is interpreted as open-ended?
Case 1	20100414T120000	Michelle	0	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	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 by default.

Figure 125: Sample table ready for import

By importing the above sample table, we get:

- The name, date and author of the resulting document.
- One group for **Academic** containing all cases with cell value 1.
- Two groups **Gender::male** and **Gender::female**
- Four groups **Favorites::Beatles**, **Favorites::Stones**, etc. The following comment is added to each document group: 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": How do I create a question that is interpreted as open-ended? The text in the cell is making up the document content for each case.

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.

- 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 **PROJECT / IMPORT SURVEY**.

The import procedure starts and ATLAS.ti informs you when the data is fully imported.

During the import, one primary document is created from every row. Unlike "normal" documents that get their contents from files, these primary documents need to have their content (data source) created as well.

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.

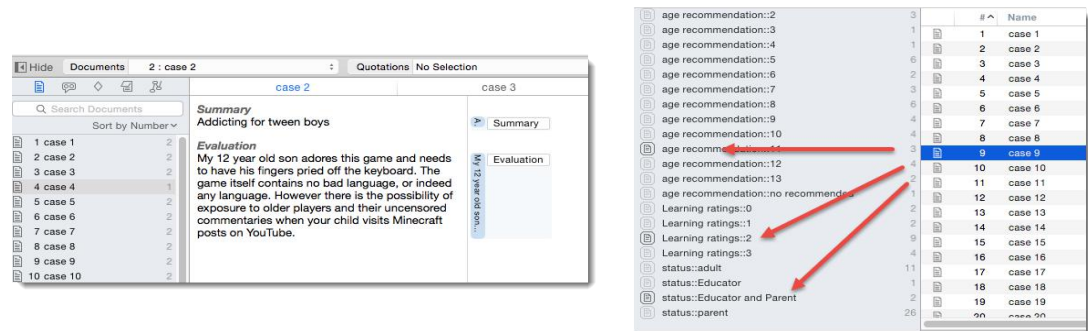


Figure 126: Results of a survey import

Those columns defined as variables are turned into document groups. See "Working with Groups" for further information. Special families are created for all imported documents and codes to make filtering of the survey material easy (see Figure 126 above).

■ Save the project.

If you import the same table repeatedly, rows with already existing documents are ignored. This way, you do not have to wait until the last respondent has filled out the questionnaire.

■ Video Tutorial: [Importing Surveys](#)

Analyzing Survey Data

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

- Primary Document Groups, especially their use as data attributes (see "Purpose of Creating and Working with Groups").
- To gain a quick overview of your data and the words the respondents used, create a word frequency table using the Word Cruncher (page 52).
- Basic coding techniques in order to add some additional codes to the pre-coded responses (see "Coding Data"). The auto coding feature might also be helpful when working with survey data, see "Auto-Coding."
- Code Groups (see page 100).
- The Code Document Table (see page 153).
- Creating and working with smart groups (see page 104).
- The Code Cooccurrence Table (see page 148).

Working With Multimedia Data

When we refer to multimedia data, we mean audio and video files. As the mouse clicks are the same for audio and video files, the difference being that there is no picture when working with audio files, below we describe all steps for both file formats together. For illustration purposes, most figures show video data.

Linking Multimedia Data to A Project

As multimedia files, especially video files can be quite sizable, it is recommend to link multimedia files to a project rather than to import them.

■ To link audio or video files to the project, from the main menu select **DOCUMENT / IMPORT LINKED MULTIMEDIA DOCUMENTS**.

Linked documents remain at their original location and ATLAS.ti accesses them from there. Preferably, these files should not be moved to a different location. If the files need to be moved, you need to re-link the files to your project. ATLAS.ti will alert you, if there is an issue and a file can no longer be accessed. See "Audio / Video Documents"

Display Of Multimedia Documents



Figure 127: Display of video files

Audio wave: On the right-hand side the audio wave is displayed.

Preview images: For video files, preview images are displayed in the full preview and the margin area. To see them, hover with the mouse over the vertical or horizontal audio wave.

Playhead: The playhead shows the current position in the video or audio file.

Zoom: As the space from top to bottom of your computer screen will be too small in most cases to meaningfully display your audio or video file, especially if it is coded, you can zoom the file using the standard techniques Option-Command-Plus Sign (+), Option-Command-Minus Sign (-), or on the mouse pad pinch with two fingers to zoom in or out.



Figure 128: Pinch with 2 fingers to zoom in and out

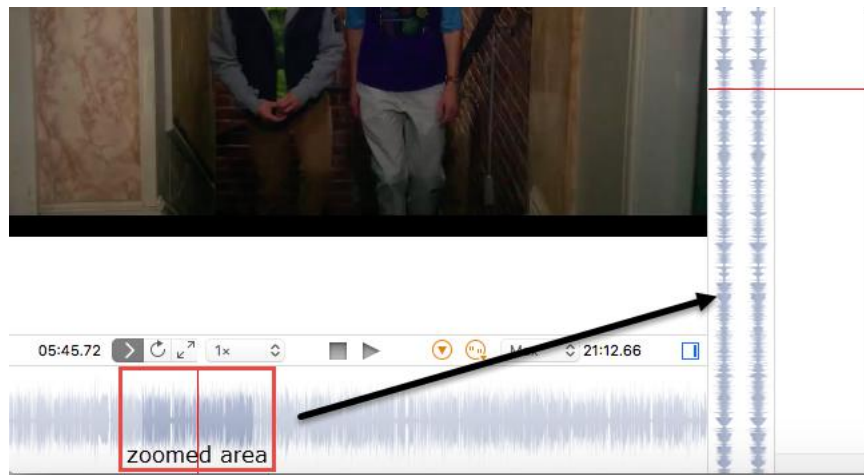


Figure 129: Display of zoomed area

The part of the file that is zoomed is shown in a darker gray in horizontal audio wave. See Figure 129.

MEDIA CONTROLS

Click the space bar to stop and start an audio or video file.

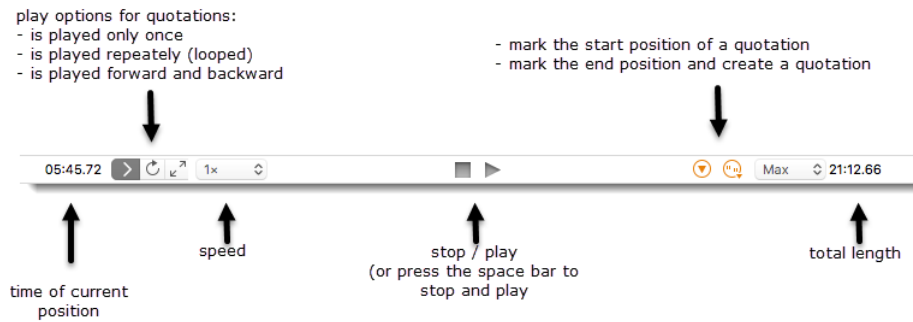


Figure 130: Multimedia toolbar

Multimedia Toolbar

Playback Rate: If you want the video to play faster or slower, you can select a playback rate between 0,25 times the original speed to 10 times the original speed.

Mark Start Position of Quotation: Sets the start position for a quotation. The short-cut key is , (comma).

Create Quotation: Sets the end position for a quotation and creates a quotation at the same time. The short-cut key is . (period).

You can also access the media controls with a right-click on the audio or video area (see Figure 130).

Capture Snapshot (Video)

If you want to analyze a particular frame in more detail, you can take a snapshot.

Mark a position and click on the button **CREATE SNAPSHOT DOCUMENT**.

ATLAS.ti will add a new image document to your project. The name of the document will be the name of the video file plus the position (hour:minute:second:millisecond): **name of video file @12:55:00**.

Navigation Using The Arrow Keys

Use **the right and left arrow keys**, to move the position of the playhead by 1/1000th increments of the length of the video that is currently displayed in the margin area.

Use **the right and left arrow keys + the Ctrl-key**, to move the position of the playhead by 1/20th increments of the length of the video that is currently displayed in the margin area.

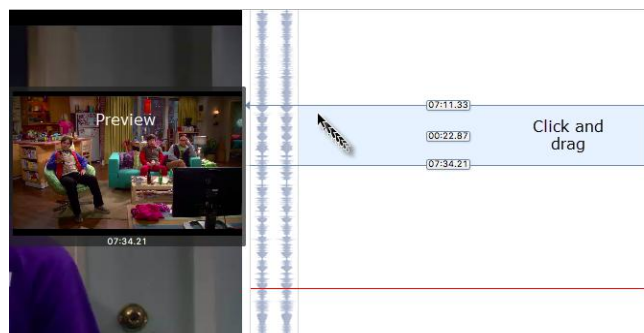


Figure 131: Click and drag to create a quotation

Creating Multimedia Quotations In the Margin Area

To create an audio or video quotation, move your mouse pointer on top of the audio wave and mark a section by clicking on the left mouse button where you want it to start. Then drag the cursor to the end position. The times of the end and start positions are shown, as well as the total length of the segment

As soon as you let go of the mouse, a quotation is created and you see the blue quotation boundary in the margin area. The top and bottom numbers indicate the start and end time of the quotation in the video file; the number in the middle gives the length of the quotation.

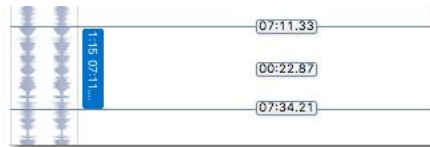


Figure 132: Display of multimedia quotations in the margin area

If you double-click on the quotation bar in the margin area, the quotation is played. If you want to loop it, play it faster or slower, or backwards and forwards, see the options in the media toolbar (Figure 130).

Creating Multimedia Quotations While Listening / Watching

You can also create audio or video quotation while listening / viewing the file. For this, you can use the Mark and Create Quotation button in the tool bar or the short-cut keys , (comma) to set the start position and . (period) to set the end position and to create a quotation.

- Play the video. If you find something interesting that you want to mark as a quotation, click the , key.
- Click . to mark the end position and to create the quotation.
- Continue listening / watching and setting quotations.

Adjusting the Size of Multimedia Quotations

- To adjust or change the length of the quotation, drag the start or end position to the desired position.

Display Of Multimedia Quotations

A new quotation will be listed in the Quotation Manager, the Project Explorer or Quotation Browser. The default name for audio and video quotations is the start and end time of the quotation. Each quotation can, however, be renamed.

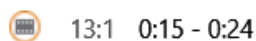


Figure 134: Display of video quotations in the Quotation Manager

Depending on the media type, the quotation icon changes:

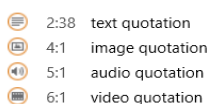


Figure 135: Quotation icons for various media types

Coding Multimedia Documents

Right-click on the blue quotation bar in the margin, or on a quotation in the Quotation Manager, the Project Explorer or Quotation Browser and select **ADD CODING** from the contextual menu. For more information on coding data, see "Coding Data".

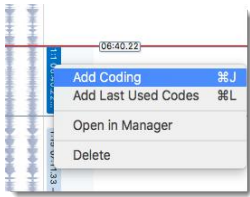


Figure 136: Coding multimedia quotations

Describing Multimedia Quotations To Improve Output

The name of an audio or video quotation is its start and end position. If you want to add further information, you have two options: renaming and adding a comment.

In the process of creating video quotations, rename them so they can serve as titles for your video segments. This allows you to create a meaningful text output of coded audio and video segments. Use the comment area to add further information, e.g. describe the segment and offer a first interpretation.

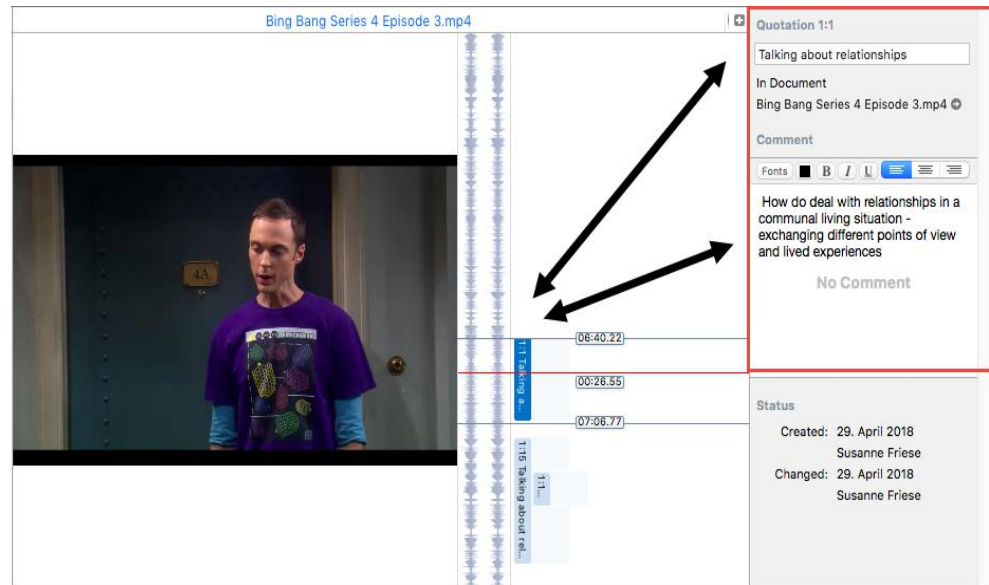


Figure 137: Analyzing multimedia quotations

To create a report

- select a few video quotations in the Quotation Manager.
- Click the **REPORT** button and select **EXPORT AS REPORT**. The Excel report (Export as Table) is plain text and does not include the first video frame.
- Select the appropriate Report Options. When creating the report below "Content" and "Comments" were selected.

ATLAS.ti Report

Filter quotations, which are coded with code example quotes
Report created by (name of author and date / time)

1:1 Talking about relationships

Content:



First video frame of the quotation

Comment:

How do deal with relationships in a communal living situation - exchanging different points of view and lived experiences

1:15 Watching television together

Content:



Comment:

conversation about beer, its ingredients and where these come from - some irritation about knowledge of geographical areas and an exercise in logical deduction

Figure 138: Report of renamed and commented video quotations

Working With Geo Documents

Geo Data As Primary Documents

The Geo Document function requires Mac OS 10.10.

ATLAS.ti 8 uses Open Street Map as its data source for Geo documents. Even though there is only one data source, you can use more than one Geo docs in your project, e.g. to create distinct sets of locations, to simulate tours, to simply tell different stories.

To add a Geo document to the project, select **DOCUMENT / New Geo Document**.

A new document is added and if you open it you see the world map. The default name is "Geo Document". You may want to rename it, so it better describes your analytic intention.

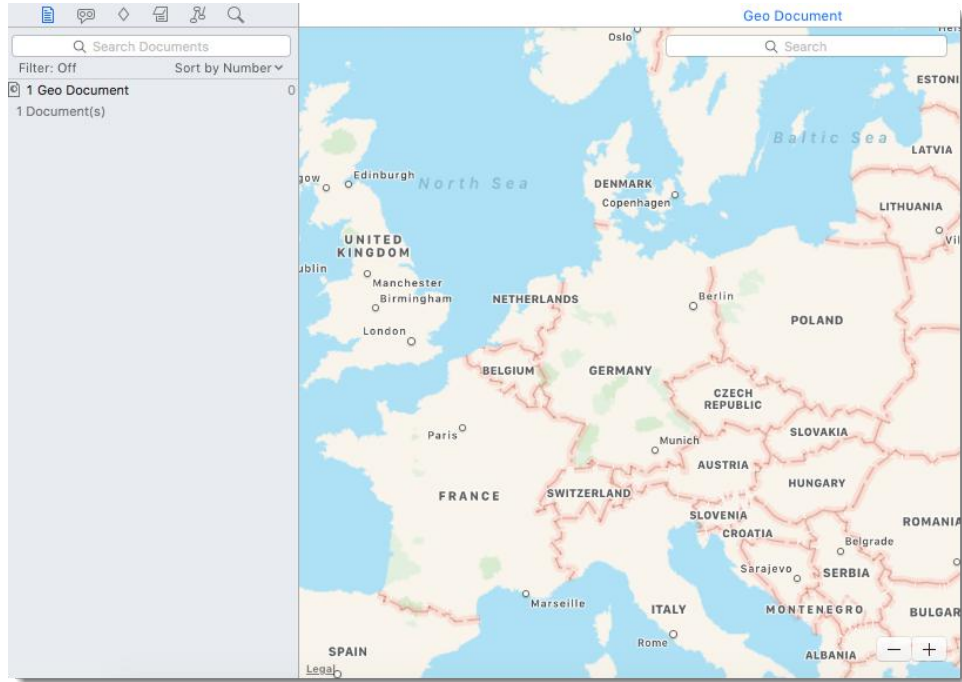


Figure 139: Adding a new Geo document

Finding A Location

The first thing you probably want to do is to find an address:

- Enter an address, a city, a country, or a point of interest into the search field. The map will shift to this location:



Figure 140: Position the map to the desired location

The map immediately displays the location that fits the search term and adds a place mark.

Creating Geo Quotations

Creating a Geo quotation is not much different from creating other type of quotations. The only difference is that the quotation is just one location on the map – the pin, and not a region.



Figure 141: Creating Geo quotations

To create a quotation, click on the button **QUOTATION FROM SELECTION PIN** in the title bar.

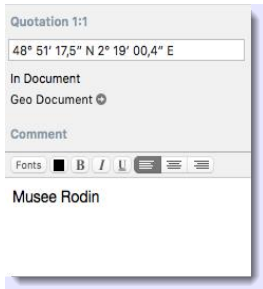


Figure 142: Geo reference as default quotation name

The current location is indicated by a blue pin. If you have created a quotation for a location, the pin is red. The quotation name is shown in the inspector on the right-hand side. As name, either the location is used (see Figure 143) or a Geo reference (see Figure 142). You can either change the name, or use the comment field to describe the location on more detail.

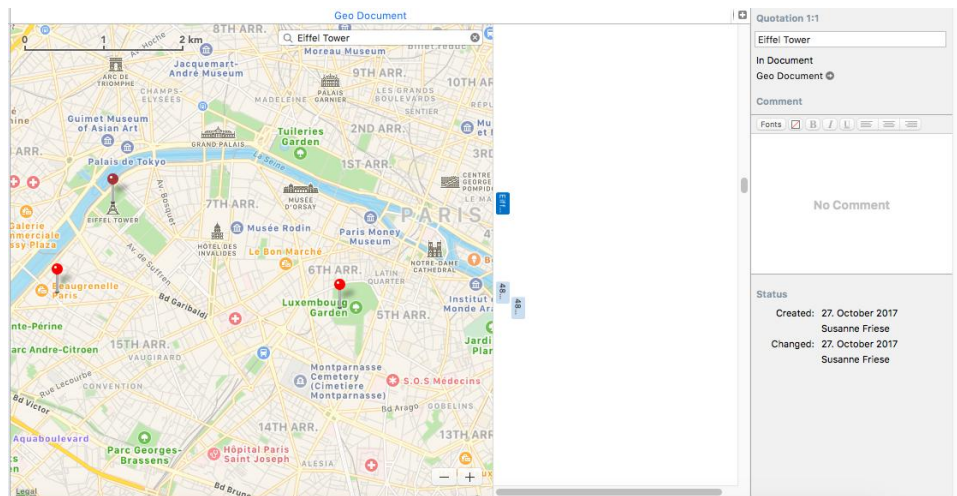


Figure 143: Geo document with three quotations

If you move your mouse over a quotation, the geographic reference is shown.

Coding Geo Quotations

You can also create a quotation and link a code to it in one step, or code an existing quotation:

Set a pin or select an existing one, and click on the button **ADD CODING** in the title bar.



Figure 144: Code a Geo quotation

The same drag-and-drop operations as those for coding apply. See "Coding via Drag-And-Drop."

Display of Geo Quotations

Geo quotations can be accessed in the margin area, in the Quotation Manager, the Quotation Browser, the Project Explorer, and also from within networks. Geo quotations are displayed as follows:

📍	1:1	48° 51' 50,2" N 2° 19' 50,7" E
📍	1:2	48° 52' 25,6" N 2° 17' 43,3" E

Figure 145: Display of Geo quotations

The quotation name consists of the geographic coordinates for degree of longitude and degree of latitude (in decimal notation).

In addition, the Quotation Manager shows a preview of the Geo location. You may want to consider renaming geo quotations, e.g., by adding the name of the location to the coordinates. Another option is to add a comment,

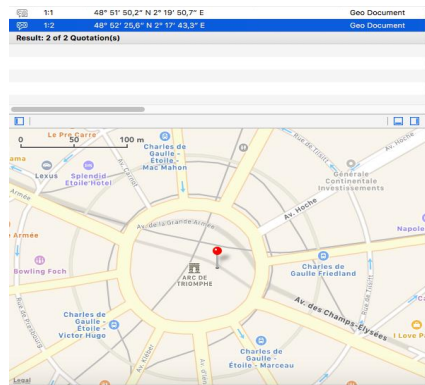


Figure 146: Preview of the Geo quotation in the Quotation Manager

Activating Geo Quotations

Select a Geo quotation in any of the above mentioned browsers or windows and double-click. It will be displayed in context. The pin is colored in dark red. All non-activated pins that already have been turned into a quotation are colored in red.

Moving A Geo quotation

To move a quotation to a different location, grab it with your mouse and drag it to a different position. The quotation follows along.

Creating A Snapshot

You can create a snapshot from the geographic region that is currently shown on your screen. This snapshot is automatically added as a new image document. This allows you to select a region to create a quotation or to code it. Further you can browse the Geo location in Google Maps (see below).

In the title bar, click on the button **CREATE SNAPSHOT DOCUMENT**.

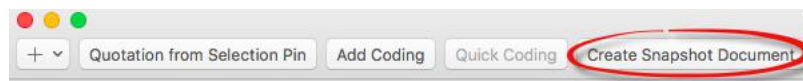


Figure 147: Creating an image document from a Geo document

A new document is created. The default name is: 'Geo Document'.

Browsing Geo Locations in Google Maps

Based on a Geo snapshot, you can look at the location on Google Maps by clicking on the arrow in the document inspector. This opens Google Maps in your default browser outside of ATLAS.ti.



Figure 148: Browse Geo quotation in Google Maps

Video tutorial: [Working with Geo documents](#).

Importing Twitter Data

This section shows you how to import Twitter data.

A sample project showing how to work with Twitter data will follow later.

To import Twitter data, from the main menu select **DOCUMENT / IMPORT FROM TWITTER**. If you use this option for the first time, you need to authorize ATLAS.ti to access your twitter account.

Enter a query. You can also look for multiple hashtags or authors by using OR. For example: CAQDAS OR ATLAS.ti

Figure 149: Set Twitter import options

Next, select whether you want to import the most recent or the most popular tweets and whether to include re-tweets, and images.

Note that you only will be able to import tweets from the last week. Further, as the final selection is done by Twitter and not within our control, queries at different times, or on different computers may result in different tweets.

The imported data is automatically coded based on the selection you make:

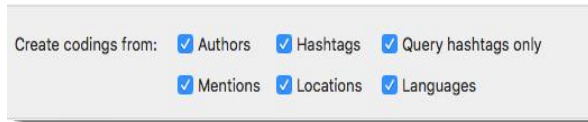


Figure 150: Select coding options

Tweets often contain many more hashtags than the original one that you searched for. Coding all hashtags often results in great many codes. Therefore you have an option to only code the queried hashtags. Further options are to code all authors and all mentioned Twitter users, the location, and the language.

Lastly you can decide whether a link should be created between authors and locations and between the authors and mentioned Twitter users.

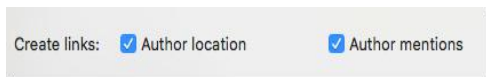


Figure 151: Select linking options

Inspecting Imported Twitter Data

Load the imported and automatically coded document, e.g. from the project explorer on the left-hand side.

On the top of the document, you can read how many tweets and retweets were imported and how many you requested. Each tweet is coded with the selection you have made.

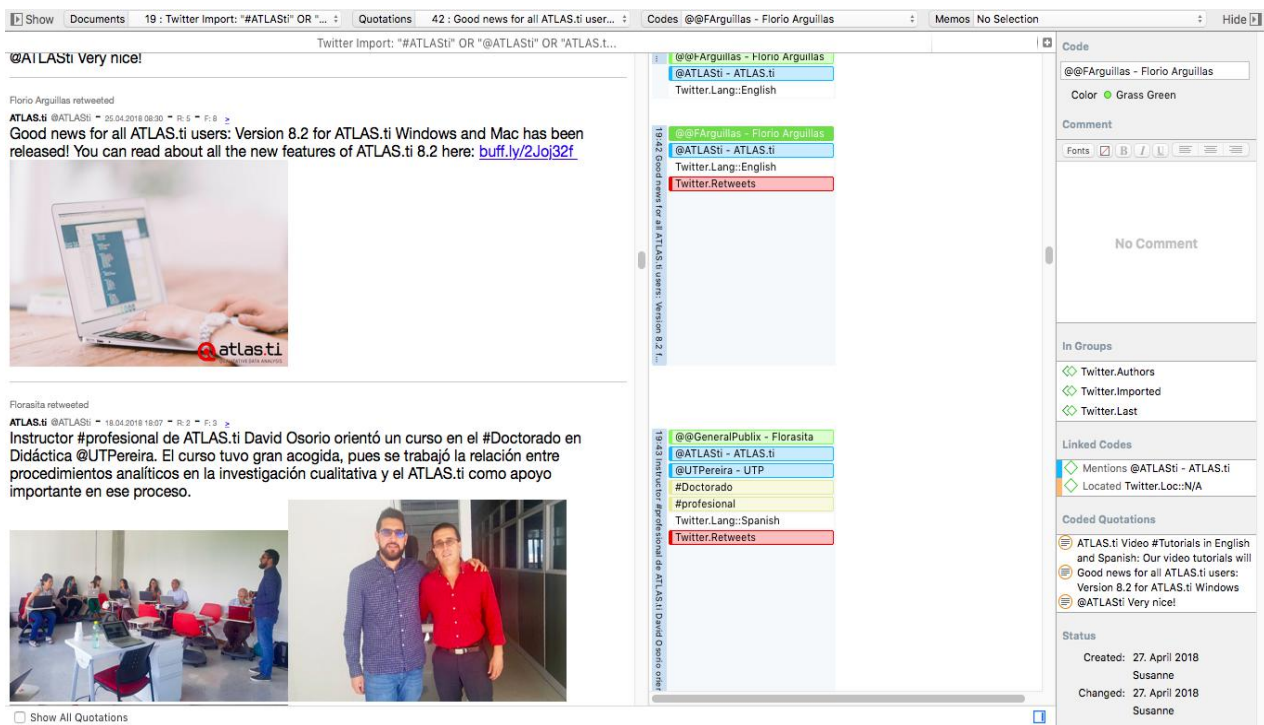


Figure 152: Imported Twitter data

Open the Code Manager to inspect the code and code groups that have been created (**HOME** tab / **CODES** button):

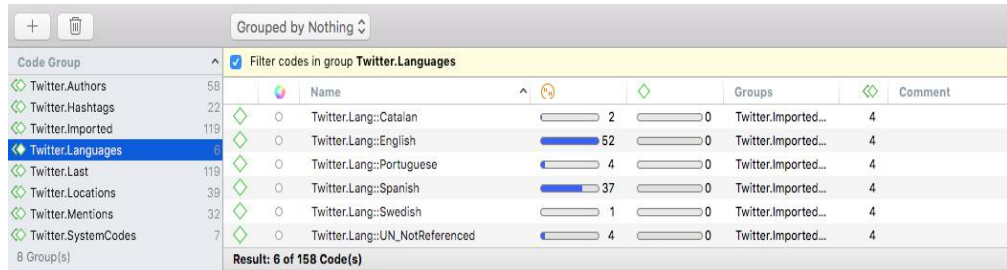


Figure 153: Codes and code groups created during Twitter import

The code groups help you to navigate through your codes. By clicking on the code group Twitter: Languages, for instance, you can immediately see how many and which languages are used in the tweets you imported.

The following prefixes are used:

Prefix	Type of code
@@	author
#	hashtag
Twitter.Lang:	language
Twitter.Loc:	Location
@	mentions

If you have selected this option during import,

- all "mentions" codes are automatically linked to the author with a virtual link labels "Mentions".
- all "author" codes are automatically linked to the location with a virtual link labels "Located".

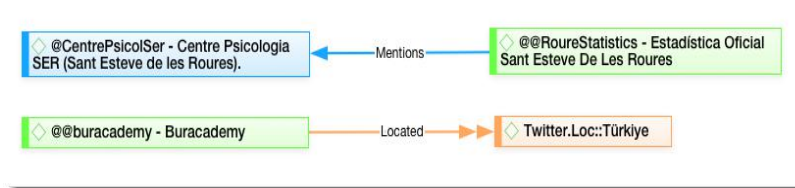


Figure 154: Automatically created virtual links

This allows you, for instance, to follow a tweet and to see how the tweet was distributed and by whom.

To create the network below, the starting point was the tweet on from there the common neighbors were imported in a successive manner:

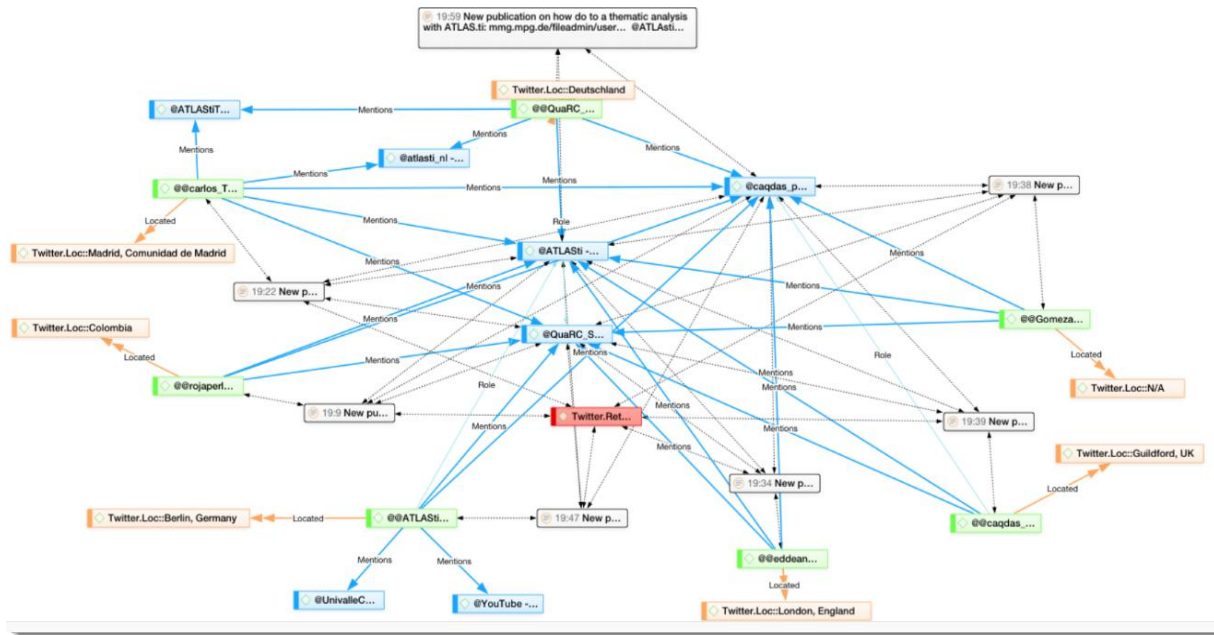


Figure 155: Following the distribution of a tweet

Video Tutorial: [ATLAS.ti 8 Windows-Working with Twitter Data](#)

Working with Groups

Overview

Just as codes describe sets of quotations, groups cluster Primary Documents, Codes, and Memos. One important entity is to manage large amounts of entities by classifying them into subsets, e. g., all *theoretical* codes, all documents from *respondents of a certain age group or location*, all memos related to a *theme*, etc.

Entities of the same type can be a member of multiple groups. For example, the interview transcript of Eva Smith, can be a member of document group `Gender: female` and a member of document group `Location: city`.

Unlike networks, which can contain entities of different types as nodes, groups can only contain one type of entity. For example, a code can never be a member of a memo group.

- Video Tutorials:
- [Working with document groups](#)
 - [Grouping the project codes](#)

Purpose of Creating and Working with Groups

Partitioning entities into groups reduces the number of "chunks" requiring the researcher's attention. Groups are often used for filtering purposes. The side panel in the managers offer a convenient way to create them and to set them as filters. The "grouped by" option also makes use of groups and you can use them to display your data in different ways.

Example: When conducting an interview study with respondents from various backgrounds and locations, **document groups** can be created to classify the respondents into:

- Female / Male
- Marital status
- Age Group 1 (20-30), Age Group 2 (31-40), Age Group 3 (41-50)

- Educational level, etc.

Once implemented, you can use **document groups** to compare and contrast answers of different groups of respondents, or check whether there are differences between locations, across time or type of documents. For example, you can query for all quotations coded by Code_A and Code_B that occur in documents of white-collar female respondents from location B. Thus, document groups can, in effect, be used as variables. Figure 156 shows how document groups can be used as filters: The manager only shows documents of married female respondents.

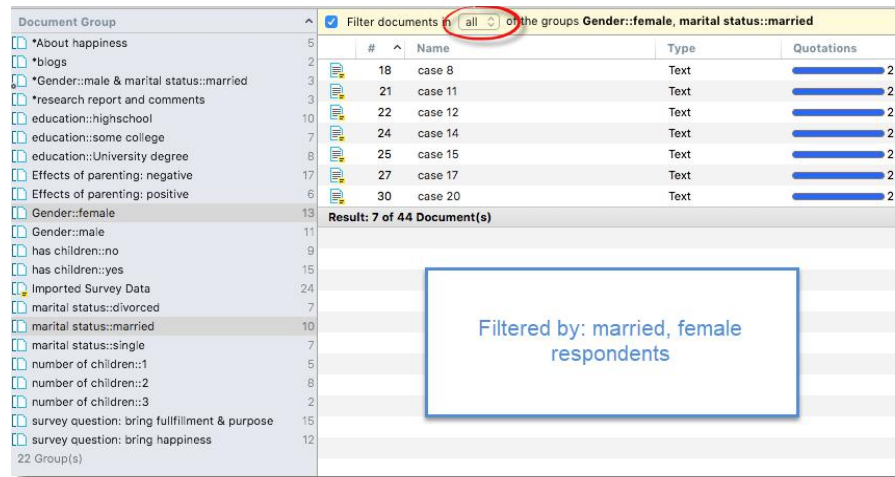


Figure 156: Use document groups as filter in the Document Manager

Code groups can be used to loosely group codes that belong together. You can use them to sort, filter and organize your codes in the Code Manager. Other than in networks where specific relationships between codes need to be defined, in code groups it is not necessary to specify the ways in which codes relate to each other.

Use **memo groups** to sort, filter, and organize your memos.

Common Procedures

In the following, the general procedures for working with groups are described.

Groups can be created in both the Group Manager and the side panels of the respective managers. The side panels are better integrated into the regular work-flow. Thus, for daily regular activities it is easier to use the side panels.

Creating Groups In the Side Panel

- Open one of the Managers. Click on the plus sign at the bottom of the Groups pane or right-click inside the Groups pane and select **NEW GROUP**. Enter a group name.
- Add members to the group via drag and drop from the list of documents / codes / or memos in the respective manager.



Figure 157: Resetting a filter

Filtering By Group In A Manager

- If you click on a group, the items in the manager are filtered and only the members of the selected group are listed (see Figure 156).
- Click on the minus button (-) to reset the filter:

Removing An Item From A Group

In a manager:

- Click on the item that you want to remove in the main window.

- Right-click on the respective family in the inspector on the right hand side and select the option Remove from Group.
- Or: Remove an item in the Group Manager:

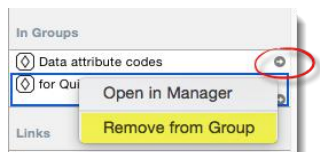


Figure 158: Removing an item from a group using the Inspector

- Open the Group Manager, e.g. via the main menu (Show Documents- / Codes- / Memos Group Manager), or double-click on a group; or right-click on a group in a manager. Then select: **OPEN IN GROUP MANAGER**.
- Select one or more entities from the list "In Group" and click on the button with the double arrows pointing to the right "Not in Group." Or double-click each item. For further instructions see the section on the Group Manager below and Figure 160.

The Group Manager

In the Group Manager, you can search for groups, rename groups, write descriptive comments, review creation and modification dates, add new code groups by clicking on the + button, add and remove group members, sort the list by codes and smart groups, filter the list by a number of criteria (see below), and export the list to Excel or Open Office Calc.

Opening A Group Manager

- In the main menu, under Documents, Codes, and Memos you find an option to open the respective group manager. You can also open a Group Manager via a context menu in any of the entity managers, or simply double-click on a group to open the Group Manager.

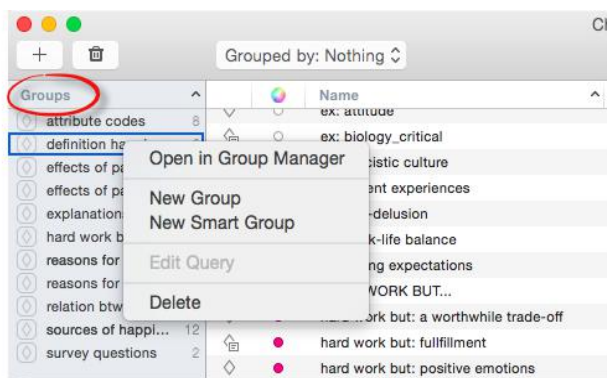
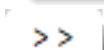


Figure 159: Group Manager

Adding And Removing Group Members

- Select one or more entities from the list "Not in Group" and click on the button with the double arrows pointing to the left "In Group." Or double-click each item.
- Select one or more entities from the list "In Group" and click on the button with the double arrows pointing to the right "Not in Group." Or double-click each item.



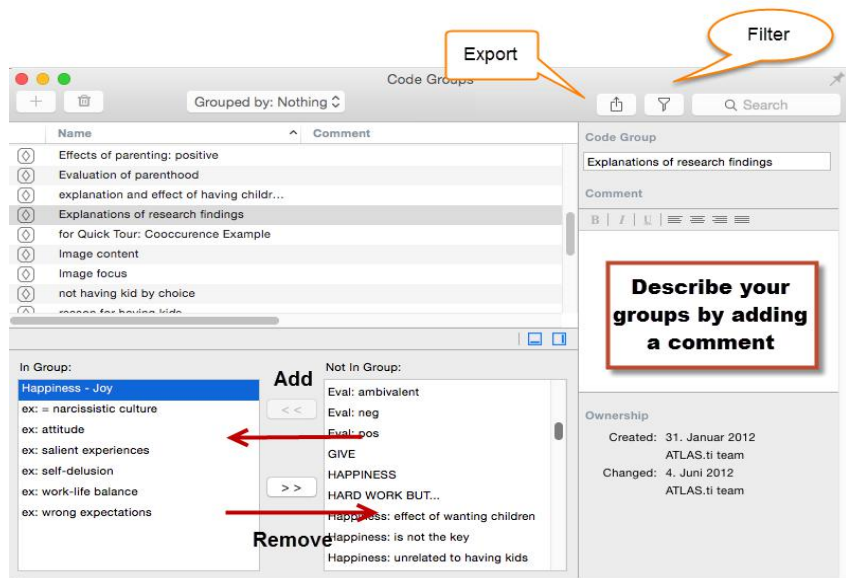


Figure 160: Adding and removing an item to / from a group

Filtering The List of Groups

- To filter groups, click on the filter icon on the top right of the group manager.
- To add a filter rule, click on the plus sign as highlighted in Figure 162.
- Next, select one of the available options (see Figure 165) to create the filter you are interested in.



Figure 161: Creating a group filter

The following filter are available for groups:

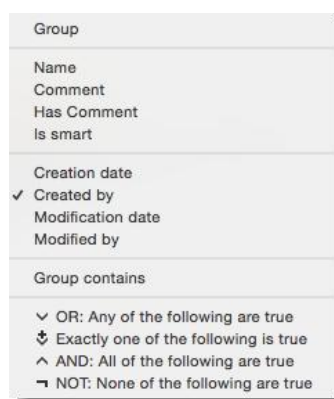
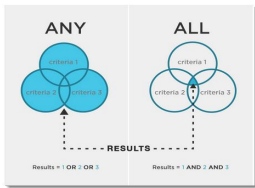


Figure 162: Filter options in Group Managers

All available operators are explained in detail in the section "Four Boolean operators are available: XOR (exactly one), AND (All), OR (any) and NOT (none)." The process of building a query is explained in the next section on "Working With Smart Groups."

Working With Smart Groups



Smart groups are combinations of other groups. They can also contain other smart groups. You can build complex groups incrementally from existing groups using a set of powerful Boolean operators. You can either generate temporary groups using the Venn diagram in the navigation panel, or you can create and store smart groups in the Smart Group Editor.

Purpose Of Smart Groups

The purpose of smart groups is to use them as filter in your ongoing analysis. For instance you may want to examine the difference in attitude among respondents who have an engineering degree, an MBA, or both an engineering degree and an MBA. Prepare the filter you need via smart groups, and combine them with a code query. Or use them to prepare a Codes-Primary Documents-Table.

Creating Temporary Smart Groups

You can create new groups based on ALL or ANY operations using the Venn diagram in the navigation pane for groups. For instance, as shown in Figure 163 you can select two code groups by holding down the **cmd** key. If you want to display all codes from both groups, set the filter to ANY.

Code Group	Count	Name	Count	Count	Groups
*Effects of parenting + The BUT group [S...	13				
*Sources of happiness + blog posts on eff...	14	def happiness: a feeling	2	2	*Sources of hap...
*Sources of happiness + Definition Happin...	19	def happiness: a state of mind	2	2	*Sources of hap...
*What children give + Evaluation of parent...	28	def happiness: fulfillment	11	20	*Sources of hap...
around the term happiness	4	def happiness: is subjective	2	1	*Sources of hap...
blog posts on effects of parenting	2	def happiness: long term view	6	14	*Sources of hap...
Children	4	source: activities	8	2	*Sources of hap...
comments on the cited studies	5	source: appreciating the moment	9	1	*Sources of hap...
Data attribute codes	15	source: attitude	13	1	*Sources of hap...
def happiness + attribute codes	7	source: balance of mind and activities	4	1	*Sources of hap...
Def Happiness pos and neg eval	9	source: baseline level	2	0	*Sources of hap...
Definition Happiness	5	source: children	8	1	*Sources of hap...
Effects of parenting	9	source: financial security	3	0	*Sources of hap...
Effects of parenting: negative	4	source: laughter / smile / fun	7	0	*Sources of hap...
Effects of parenting: positive	3	source: personal responsibility	9	1	*Sources of hap...
Evaluation of parenthood	3	source: relationships	9	2	*Sources of hap...
explanation and effect of having children +...	8	source: the way to get there	3	2	*Sources of hap...
Explanations of research findings	6	source: through struggle	4	1	*Sources of hap...
for Quick Tour: Cooccurrence Example	22				
Image content	10				
Image focus	6				
reason for having kids	15				
reasons for not having kids + attribute cod...	10				
regret	2				
Sources of happiness	12				
Sources of happiness + attribute codes	14				
Study design	5				

Result: 17 of 146 Code(s)

Figure 163: Displaying two code groups using OR (All)

If you are interested in the intersection of two groups, use AND (ALL). You can switch between Or (ANY) and AND)(ALL) by clicking on the Venn diagram.

Another way to create smart groups is via the smart group editor.

The Smart Group Editor

Open the smart group tool via a right-click inside the group navigation panel. Select the option **NEW SMART GROUP**.

You can combine groups using Boolean operators. Each operator is explained below and an example is provided.

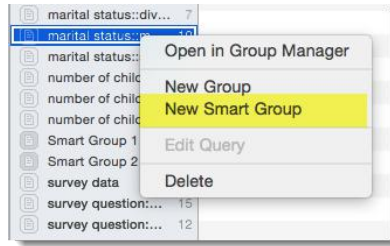


Figure 164: How to open the smart group editor

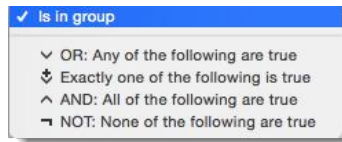


Figure 165: Available Smart Group Operators

OR: ANY OF THE FOLLOWING ARE TRUE

The OR operator retrieves all entities (i. e., documents) that are added to any of the groups used in the expression. The query in Figure 166 will give you all respondents that have an MBA or an engineering degree including those respondents that have both. This results in a total of 17 retrieved documents.



Figure 166: An example using the OR operator

XOR: EXACTLY ONE OF THE FOLLOWING IS TRUE

At least one of..., excluding the case where ALL conditions match. The XOR operator asks that "EXACTLY one of..." the conditions must meet. It translates into everyday "either-or." Example: you want to group all respondents that either have an engineering degree or an MBA (excluding those respondents who have both an engineering degree and an MBA). This results in a total of 11 retrieved documents.



Figure 167: XOR query: Exactly one of the following is true

AND: ALL OF THE FOLLOWING ARE TRUE

The AND operator finds quotations that match ALL the conditions specified in the query. In Figure 169, the smart document group contains all respondents that both have a MBA and an engineering degree. This results in a total of 6 retrieved documents.



Figure 168: An example using the AND operator

NONE OF THE FOLLOWING ARE TRUE (NOT)

The NOT operator tests for the absence of a condition. Technically, it subtracts the findings of the non-negated term from all other available entities of the same type. If you select "none of the following are true" and the group "engineering degree," you retrieve all respondents that have an MBA or other degrees. This results in a total of 20 retrieved documents. If your data set also contains other data like reports that are not grouped in any "degree group," you retrieve all other documents that have not been grouped as `degree: engineer`.



Figure 169: NOT query: None of the following are true

If you only want to retrieve respondents with an MBA that do not have an engineer degree, select:



Figure 170: Example query: Respondents with an MBA but no other degree

All smart groups are listed in the side panel together with the other groups. They are automatically named by ATLAS.ti: Smart Group1, Smart Group 2, Smart Group 3 and so on. The group icon is filled in (see left). It is recommended to rename the smart groups after creation in order to remember what they contain.

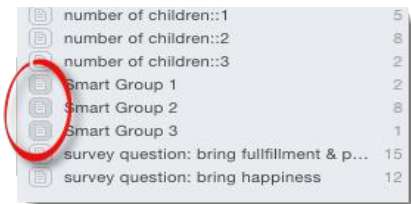


Figure 171: Display of smart groups in the side panel

A smart group can be edited at any time. To do so, right-click on a smart group and select **EDIT SMART GROUP**. This opens the Smart Group Editor again.

Working with Hyperlinks

Overview

Pure classification is not always sufficient.

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 working with codes. Direct linking of data segments (quotations) to other data segments offers similar flexibility in choosing and defining relations.

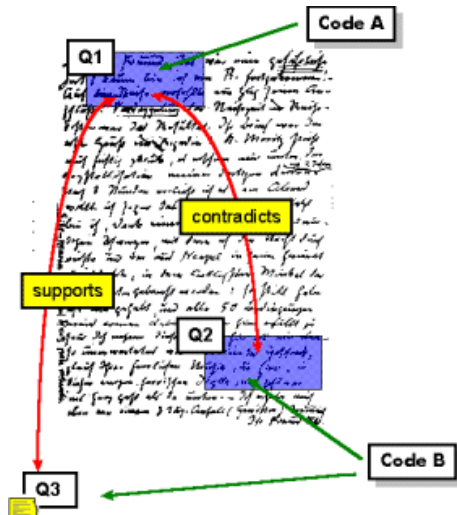


Figure 172: Hypertext captures the macro-structure of a text

What Codes Cannot Do

Perhaps 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?

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.

The hypertext concept 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, e. g. "show me all statements that are contradictory of 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. The concept of hypertext introduces explicit relations between passages. 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, and a great many more.

No code is required to connect a quotation Q1 with one that contradicts it (Q2).

Today's largest hypertext system: the World Wide Web

Cross-references between text passages are very common even in conventional media such as books—just think of religious and juridical texts, literature, journals etc. Footnotes and end notes 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 (as compared to lengthy printed information), but with a considerable amount of linkage to other

pieces of information. The most well-known hypermedia structure is the World Wide Web with its textual, graphical and other multimedia information.

Graphical Hyperlink Maps

Hypertext makes text-text relations explicit

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 networks) to make parts of your hyperspace accessible in a convenient way. Hyperlinks may connect quotations (textual, graphical, multimedia) across documents (inter-textual links) or may link segments within the same primary document (inter-textual links). The natural boundary for hyperlinks, like all structures in ATLAS.ti, is your project. Figure 173 below shows a networks based on a number of hyperlinks and a few codes. Other node types can also be included in the network, like, for instance, a memo.

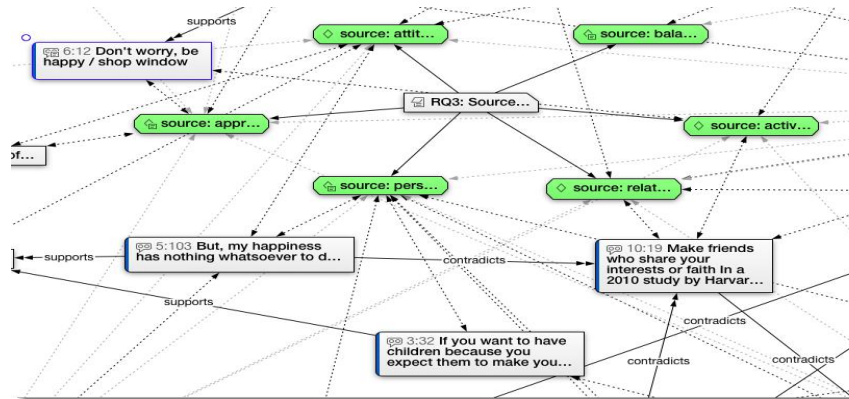


Figure 173: Example of a hyperlink network including some code and document nodes

Creating Hyperlinks

Creating Hyperlinks In The Quotation Manager

To link two quotations to each other, simply drag one quotation (source) and drop it on top of another quotation (target) - either in the Quotation Manager or in the margin area.

#	Name	Text Content	Codes
2:2	Quotation 2	pushed into poverty, pay directly for h...	
2:3	Quotation 3	RECOMMENDATIONS	
2:4	Quotation 4	Making health a higher priority	
2:5	Quotation 5	Making revenue collection more efficient	
2:6	Quotation 6	Diversifying sources of revenue	
2:7	Quotation 7	Increasing external support	
2:8	Quotation 8	Relying largely on forms of prepayment	
2:9	Quotation 9	Improving efficiency and equity	
2:11	Quotation 11	Reducing fragmentation	
2:12	Quotation 12	Improving hospital efficiency,...	
2:13	Quotation 13	Choosing the right interventions:	
2:14	Quotation 14	Providing incentives that work	
2:15	Quotation 15	Improving quality control, reducing un...	
2:16	Quotation 16	Developing countries	
2:17	Quotation 17	Reducing government spending	
2:18	Quotation 18	Identifying sources of revenues: value-added taxes	
2:19	Quotation 19	Identifying sources of revenues: alcohol /tobacco tax	
2:20	Quotation 20	Identifying sources of revenues: transactiob levy	

Figure 174: Linking two quotations to each other in the Quotation Manager

Next, select one of the offered relations. If the offered relations do not suit your needs, you can create new relations in the Relations Manager: From the main menu select: **QUOTATIONS / SHOW RELATION MANAGER**. (see also "Defining New Hyperlink Relations.")

The margin is an optimal work space for navigating hyperlinks

Creating Hyperlinks In The 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. If they are not, utilize the multi-document view for linking (see "Utilizing The Multi-Document View For Creating Hyperlinks.")

- Select a quotation bar in the margin area (the source).
- Hold down the left mouse button and drag the bar onto another quotation bar (the target).
- Release the left mouse button. The Relation menu opens. Select a relation.

Display Of Hyperlinks In The Margin Area

Hyperlinks in the margin area are colored in gray. If a transitive link was selected (e.g. "supports"), the source link points to the right. Vice versa, the target link points to the left (see Figure 175). Symmetric links point in both directions. Whether a link is directed or non-directed can be specified in the Link Manager, see "Defining New Hyperlink Relations."

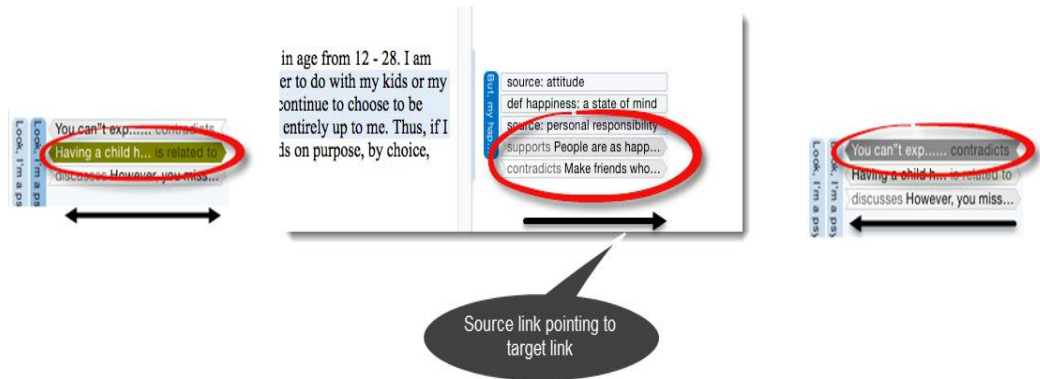


Figure 175: Display of hyperlinks in the margin area

Utilizing The Multi-Document View For Creating Hyperlinks

- Open two documents side-by-side (see "Multiple Document View").
- Grab a quotation bar and drag it across to the document in the second tab and drop it onto another quotation bar.
-

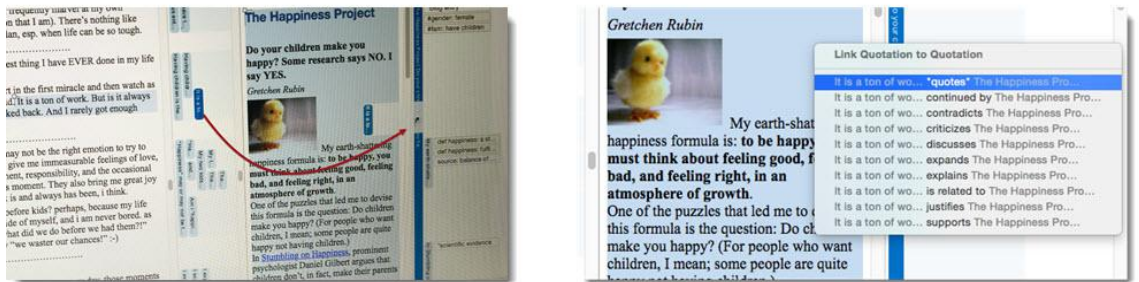


Figure 176: Creating hyperlinks utilizing the multiple-document view

- Select a relation.

Modifying Hyperlink Relations

Using the Link Manager

- Open the Link Manager via **QUOTATION / SHOW LINK MANAGER**.
- In the Relation column, click on a relation and select a the desired relation.

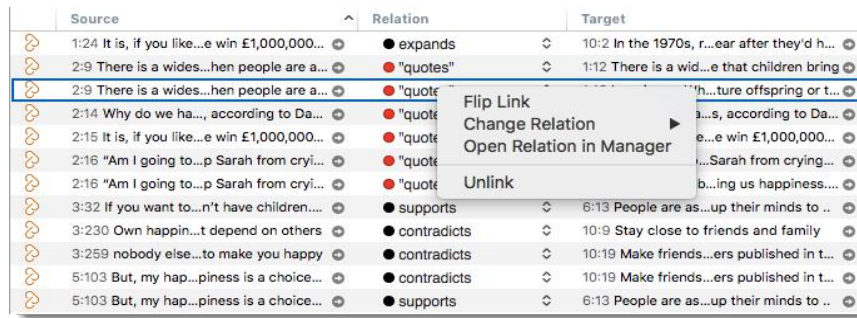


Figure 177: Modifying hyperlink relations in the Link Manager

Using The Quotation Inspector

- Open the Quotation Manager and select a quotation with hyperlink in the main window. All hyperlinks are shown on the right hand side in the Inspector in the **Links** section.
- Right-click on a hyper-linked quotation and select **CHANGE RELATION** from the secondary menu:

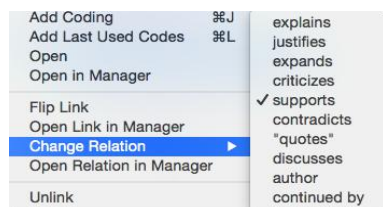


Figure 178: Secondary menu for hyperlinks in the links section of the Inspector

Defining New Hyperlink Relations

The procedure for defining or editing hypertext relations is equivalent to the methods described for editing code-code relations (see also "Defining New Code-Code Relations").

- Open the Relation Manager from the Quotation's main menu: **QUOTATION / SHOW RELATION MANAGER**; or select **OPEN RELATION MANAGER** from the secondary menu in the Links section of the Quotation Inspector (see Figure 178). The same secondary menu comes up if you right-click on a hyperlink in the margin area.
- In the Relation Manager, click on the **+** button to add a new relation.
- Define the properties for the new relation and write a comment (optional). The various fields are explained in more detail below.

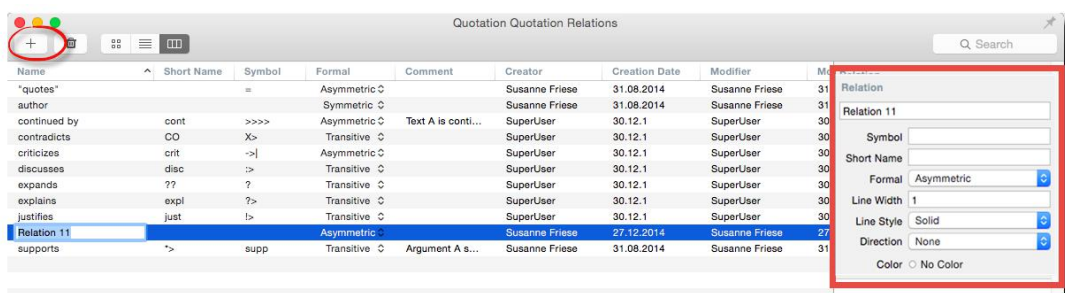


Figure 179: Creating a new relation in the Relation Manager

Relation Properties

The following can be defined: Cosmetic and descriptive as well as structural aspects of relations.

COSMETICS

Cosmetic aspects include the name and the line. The relation name is shown when creating relations and in a network Editor. Once implemented, the symbol and short name can be used as an alternative display option in networks. Instead of a short name, you can for instance also use a different language as shown on the left. Further, you can define the width and thickness of the line and its color.



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 (children / parent), transitive relations need to be used.

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."



COMMENT

As with all entities in ATLAS.ti, a comment can be attached.

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 quotations. When writing a comment for this link, the meaning is local and explains why two quotations were connected using this relation.

Traversing Hyperlinks

The margin area permits a very intuitive traversal of hyperlinks.

For a better view, open up the context menu in the margin area and only select **SHOW HYPERLINKS**. Deactivate all other options.

- Double-click a hyperlink in the margin to jump to the linked quotation.

Finding Redundant Codings

Redundant codings are overlapping or embedded quotations that are associated with the same code. Such codings can result from normal coding but may occur unnoticed during a merge procedure when working in teams. The Codings Analyzer finds all redundant codings and offers appropriate procedures to correct it. An example of a redundant coding is shown below.

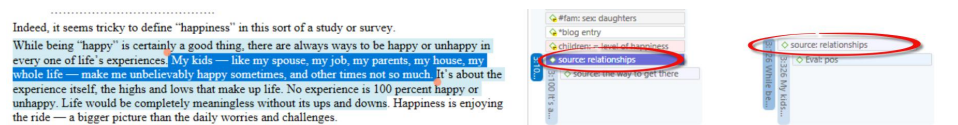


Figure 180: An example of a redundant coding

- To find all redundant codings, select **TOOLS / FIND REDUNDANT CODINGS**.

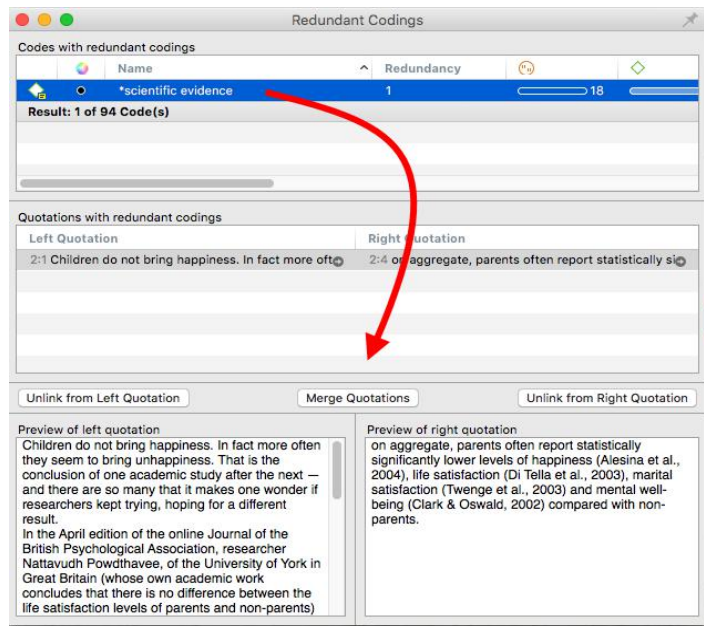


Figure 181: Redundant Codings Analyzer

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 middle pane. If you select a pair, you see a preview of the quotation in the bottom pane. If you click on the right-arrow, you can view the quotation in context.

You can correct the redundancy in the following ways:

UNLINK FROM LEFT QUOTATION removes the selected code from the quotation shown on the left-hand side.

MERGE QUOTATIONS melts the two quotations shown on the right- and left-hand side. All references to and from the merged quotation are "inherited" by the other. If the two quotations overlap, the resulting quotation includes all data from both quotations.

UNLINK FROM RIGHT QUOTATION removes the selected code from the quotation shown on the right-hand side.

If you see a quotation listed more than once, 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.

Inter-coder Agreement (ICA)

Introduction – Please Read!

Previous versions of ATLAS.ti allowed to calculate inter-coder agreement (ICA) in combination with the online tool CAT. This required a special way of merging projects and the creation of a specific text-only output. Both are no longer available in ATLAS.ti 8. Therefore, CAT can no longer be used in combination with ATLAS.ti.

Instead, we decided to develop our own inter-coder agreement tool that would be both easy to use and produce results of outstanding accuracy. To this end, we worked closely with Prof. Klaus Krippendorff, one of the leading experts in this field and the namesake of important "measurement units" in this area. ATLAS.ti's Inter-coder Agreement tool lets you assess the accuracy of how multiple coders analyze a given body of data, and thus permits you to underscore the validity of your analysis.

The need for such a tool as an integrated element in ATLAS.ti has long been evident and has been frequently requested by users. When we set out to tackle the task of designing it, it was also clear that would have to be more than the one-dimensional and sometimes crassly simplifying attempts we found elsewhere. Rather, the ATLAS.ti inter-coder Agreement tool was supposed to be equally flexible, accurate, and able to handle the inherent complexity of the subject matter.

This also means that by necessity it requires at least a minimal willingness for the user to delve into some of the basic theoretical foundations of what inter-coder agreement is, what it does and can do, and also what it cannot do. We tried to

make the tool as easy to use as possible and require only a small degree of preparation, but by its nature, it could not and cannot be a magic "just click a button and hope for the best" solution.

That said, you are probably aware of the expression, "garbage in, garbage out." If you randomly click on any of the choices that ATLAS.ti offers to calculate an inter-coder agreement coefficient, ATLAS.ti will calculate *something*. Whether the number you receive will be meaningful and useful depends on how you have set up your project and your coding. ATLAS.ti can only provide the technical functionality. You as the user are responsible for applying it in a meaningful and sensible way, especially if you intend to report an inter-coder agreement coefficient in a publication. Hence, we would like to lay out a few of the underlying assumptions and requirements.

The following presents a typical scenario from in the past:

User: "How can I calculate inter-coder reliability? I have coded two interviews and my colleague also has coded two interviews. Now we want to merge our projects and calculate inter-coder reliability."

ATLAS.ti expert: "Sorry, the tool is not implemented yet. But let me ask you a few questions. Based on this, I can give you some suggestions on how to calculate it manually. How have you set up the project?"

User: "I have added two documents to my project and my colleague has done the same."

ATLAS.ti expert: "Mmh. This means, if you merge, you will end up with duplicate documents, as each document is stamped with a unique ID when adding it to a project. This is not what you want. The correct way of doing it is that one person sets up the project, adds the documents, saves it, creates a project bundle file, and gives the project bundle file to the second coder (see "Setting Up A Team Project"). But ok, one of our developers might be able to help you with this. The next question is: How have you approached coding?"

User: "We both read the documents and coded."

ATLAS.ti expert: "So, there was no pre-agreed coding system? You did not talk about which codes to apply? There were no code definitions?"

User: "No, we just coded and now we want to measure inter-coder reliability."

ATLAS.ti expert: "Mmh, ... I think we have to talk about method first."

If you want to develop a code system as a team, yes, you can start coding independently and then see what you get. But this approach can only be an initial brainstorming at best; a first step towards developing a code system based on which you can test inter-coder agreement. But this will be much later in the process. You first need a structured code system in which each code is clearly defined. The testing also needs to be done by two or more additional coders that are independent of the person who developed the codes. Thus, if you want to measure inter-coder agreement, you need at least three persons: One person developing and defining the codes, and two persons to apply the codes.

Please keep in mind that the inter-coder agreement tool crosses the qualitative-quantitative divide. Establishing inter-coder agreement has its origin in quantitative content analysis (see for instance Krippendorff, 2018; Schreier, 2012). If you want to apply it and want to adhere to scientific standards, you must follow some rules that are much stricter than those for qualitative coding.

Why Call It Inter-coder Agreement Rather Than Inter-coder Reliability?

The coefficients that are available measure the extent of agreement or disagreement of different coders. Based on this measure one can infer reliability, but the coefficients do not measure reliability directly. Therefore, what is measured is inter-coder *agreement* and not inter-coder *reliability*.

Agreement is what we measure; reliability is what we wish to infer from it.

Why Reliability Matters

The purpose of collecting and analyzing data is that researchers find answers to the research questions that motivated the study in the first place. Thus, the data are the trusted ground for any reasoning and discussion of the results. Therefore, the researchers should be confident that their data has been generated taking precaution against distortions and biases, intentional or accidental, and that the mean the same thing to anyone who uses them. Reliability grounds this confidence empirically (Krippendorff, 2004).

There are two ways to operationalize reliability, one routed in measurement theory, which is less relevant for the type of data that ATLAS.ti users have. The second one is an interpretivist conception of reliability. When collecting any type of

interview data or observations the phenomena of interest usually disappears right after it has been recorded or observed. Therefore, the analyst's ability to examine the phenomena relies heavily on a consensual reading and use of the data that represent the phenomena of interest. Researchers need to presume that their data can be trusted to mean the same to all of their users. This means "that the reading of textual data as well as of the research results is replicable elsewhere, that researchers demonstrably agree on what they are talking about. Here, then, reliability is the degree in which members of a designated community agree on the readings, interpretations, responses to, or uses of given texts or data. [...] Researchers need to demonstrate the trustworthiness of their data by measuring their reliability" (Krippendorff, 2004, p. 212).

Testing the reliability of the data is a first step. Only after establishing that the reliability is sufficiently high, it makes sense to proceed with the analysis of the data. If there is considerable doubt what the data mean, it will be difficult to justify the further analysis and also the results of this analysis.

Reliability And Validity

Whereas reliability offers the certainty that research findings can be reproduced and that no or only limited external "noise" has contaminated the data or the results, validity assures that the assertions made by the research reflect the reality it claims to represent. Validity concerns truth(s).

Reliability relates to validity in the following ways:

The more unreliable the data, the less likely it is that researchers can draw valid conclusions from the data. In terms of coding data, this means that researchers need to identify valid accounts in the data to a degree better than by chance. If the agreement of two or more coders is not better than the agreement by chance, then reliability is low and you cannot infer that a common understanding of the data exists. Thus: **Unreliability limits the chance of validity.**

On the other hand, **reliability does not necessarily guarantee validity.** Two coders may share the same world view and have the same prejudices may well agree on what they see, but could objectively be wrong. Also, if two researchers may have a unique perspective based on their academic discipline but their reading is not shared by many people outside their own scholarly community, the reliability might be high but the outcome of the research has little chance of being substantiated by evidence of the reality that is inferred. As Krippendorff (2004) states: "Even perfectly dependable mechanical instruments, such as computers, can be wrong – reliably." (p. 213).

A third aspect is the **dilemma between high reliability and validity.** Interesting interpretations might not be reproducible, or interesting data may not occur often enough to establish reliability. Highly reliable data might be boring and oversimplified in order to establish a high reliability in the first place.

Requirements For Coding

As explained above, sources for unreliable data are intra-coder inconsistencies and inter-coder disagreements. To detect these, we need to replicate the coding process. Replicability can be assured when several independently working coders agree on the use of the written coding instruction, by highlighting the same textual segments to which the coding instructions apply, identifying the same semantic domains that would describe them, and code them using the same codes for each semantic domain.

Development Of Semantic Domains

A semantic domain is more or less a category with subcategories, as described in Chapter 5. In developing the ICA function, ATLAS.ti decided to use a special name to make it clear that this type of coding is related to an ICA analysis. Although I generally recommend such a structure for the reasons given in Chapter 5, not all users want to code in that way. And ATLAS.ti does not want to specify a specific way of coding. Therefore, it is also possible that every single code represents a semantic domain. That means, it is not a must that a semantic domain consists of multiple codes.

A semantic domain is defined as a space of distinct concepts that share common meanings. Examples of semantic domains are emotional states, a set of strategies mentioned to deal with something, motivations for achieving something, gender biases, memberships in different, values, or genres. Each semantic domain embraces **mutually exclusive concepts** indicated by a **code**.

At the development stage of a coding instruction a semantic domain is **open ended**. For example, one may start with the semantic domain "benefits of friendship" by distinguishing "caring for each other" and "supporting each other" but soon discovers that there are also other aspects like "improve health and longevity" and "learning from each other". So a code for these aspects needs to be added to the semantic domain of "benefits of friendship". Once a coding instruction is written and used in testing its reliability, one can no longer expand a semantic domain.

All semantic domains are **context dependent**. The gender of nouns has little to do with the gender of individuals. The colour of a ball pen has little to do with the colour of an ethnic group, the state of a drunk, or a political party. Semantic domains may use abstract names, but without acknowledgements of their contexts coding becomes unreliable.

Semantic domains are **logically or conceptually independent** of each other, hence freely combinable as appropriate. A person may have a gender, an age, an education, a hobby, a marital status, and be a mother, a taxi driver, a socialist, etc. One must be careful not to confuse freely combinable semantic domains with their mutually exclusive codes.

A single segment of text, a quote, proposition, or explanation may have to be characterized in terms of several **contextually linked** semantic domains. For example, many political arguments concern a "proposal" that has "proponents" and "adversaries" benefits "some communities" and harms "other communities." The words in quotation marks spell out the names of semantic domains which serve as placeholders of coded texts.

An example of how to represent semantic domains in ATLAS.ti is shown below:

- BEST FRIENDS
- best friends: best (wo)man at wedding~
- best friends: can have arguments with~
- best friends: don't let you down~
- best friends: friendship will endure~
- best friends: having history together~
- best friends: like family~
- CHARACTERISTIC~
- characteristic: give and take~
- characteristic: good listener~
- characteristic: having commonalities~
- characteristic: loyalty~
- characteristic: mutual respect~
- characteristic: trust~
- characteristic: understanding~
- END OF FRIENDSHIP
- end of friendship: bad balance between give and take
- end of friendship: being bullied
- end of friendship: being lied to
- end of friendship: different life paths
- end of friendship: lack of common interest
- end of friendship: lack of time
- end of friendship: no trust
- end of friendship: persons change
- CHANGES OVER TIME~
- changes over time: friends and partner~
- changes over time: if life goes on~

Figure 182: Examples of semantic domains in ATLAS.ti

There are two requirements for developing and working with semantic domains: exhaustiveness and mutual exclusiveness.

Exhaustiveness means that the codes of the code system cover the variability in the data and that no aspect that is relevant for the research question is left-out. On the domain level this means that all main topics are covered. On the sub code level, this means that the codes of a semantic domain cover all aspects of the domain and the data can be sorted in the available codes without forcing them. An easy way out is to include a catch all 'miscellaneous' code for each domain into which coders can add all data that they think does not fit anywhere else. However, keep in mind that such catch all codes will contribute little to answering the research questions.

Mutual exclusiveness affects two areas. One is the meaning of the sub categories: Each of the sub categories within each domain needs to be different and this needs to be clearly specified in the code definitions and coding rules. There should be no doubt when to apply sub category 1, 2 or 3. The second is the application of the sub categories: You can only apply one of the sub categories of a semantic domain to a quotation or to overlapping quotations. Using the same code colour for all codes of a semantic domain will help you to detect possible errors (see Figure 9.28)

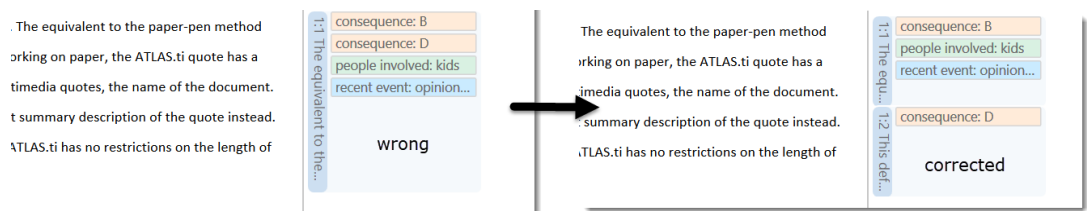


Figure 183: How to correct a violation of mutual exclusiveness

If you find that you have coded a quotation with two codes from the same semantic domain, you can fix it by splitting the quotation. This means, you change the length of the original quotation and create one new quotation, so you can apply the two codes to two distinct quotations.

If codes within a semantic domain are not applied in a mutually exclusive manner, the ICA coefficient is inflated. Currently, a coefficient cannot be calculated if this is the case. In version 2 of the ICA tool, ATLAS.ti will calculate the coefficient but will indicate that there is a problem. There will also be a link to the segments in your data that are problematic.

Multi-valued Coding

As also shown in Figure 181, you can apply multiple codes of different semantic domains to the same quotation. This is referred to as **multi-valued coding**. For instance, a respondent expresses an opinion about a recent event. The semantic domain in this example is the RECENT EVENT and the various 'opinions' about the recent event are the codes of his domain. Within the same section or in an overlapping section, the respondent also talks about the people involved in the event and the consequences it had for them. The PEOPLE INVOLVED, and the CONSEQUENCES are two further semantic domains. If your coding should cover all these different aspects that are mentioned in the sentence or paragraph, you need to apply codes from all three domains as shown in Figure 182.

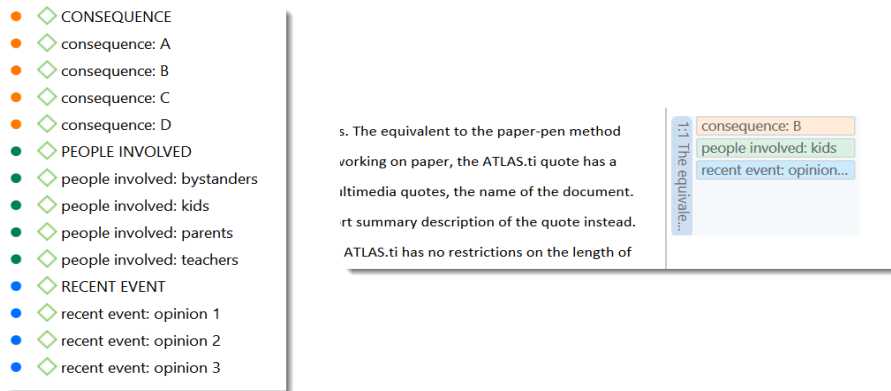


Figure 184: Multit-valued coding

Coding with codes from multiple semantic domains will allow you to see how the various semantic domains are related. For example, what kind of people are involved in what kinds of events and how they experience the event. For this you can use the code co-occurrence tools at a later stage in the analysis. See “Code Co-Occurrence Tools”.

Common Mistakes

A common belief is that **consensus is better than individual judgment**. Rather than to work independently, coders are encouraged to discuss what they code and to reach their decision by compromise. However, data generated in this way does not ensure reproducibility, nor does it reveal the extent of it. The results often reflect the social structure of the group, the most prestigious member of the group dominating the outcome. Reproducibility requires at least two independent coders.

Another common procedure is **to allow coders to consult each other** if problems arise, e.g. they do not understand a coding instruction, or they have problems applying some of the codes to the data given to them. This also compromises reliability. Ideally, the coding instructions should be clear and easy to understand. If this is not the case, the coders involved in the discussion create their own interpretation of what the codes mean. This is difficult to communicate to others and therefore jeopardizes reproducibility. In addition, the process loses stability as the data coded in the early phases were coded based on a different understanding of the codes. If coders do not work independently and discuss problems during the process of coding, the reliability coefficient might be higher in the end, but this is partly illusory. If the data were to be given to different coders not having the same insights, reliability is likely to be lower again. As it is common that code systems evolve, and code definitions and coding rules need to be refined, you can ask coders to write down all the issues they see with the current instructions and definitions. Based on their notes, the coding system can be refined and tested again, but with different coders.

Another common mistake is **to assume that it is best to ask other experts, colleagues with a long history of involvement in the subject of the research, or close friends and associates** to serve as coders. Those coders are likely to agree, but not because they carefully follow the coding instructions, but because they know each other and the purpose of the research. This also results in higher measures of reliability, but also does not serve reproducibility.

Measuring Inter-coder Agreement

Suppose two coders are given a text of a certain length and do what the coding instructions tell them to do. The simplest agreement coefficient α_{cu} assesses the degree of agreement among these coders to decide what is relevant to a present research project. They may create so-called reliability data – complying with all the earlier mentioned condition under which they work – so that replicability can be inferred from the observed inter-coder agreement. They may give you the following record of their coding – here only which segments of text are relevant:

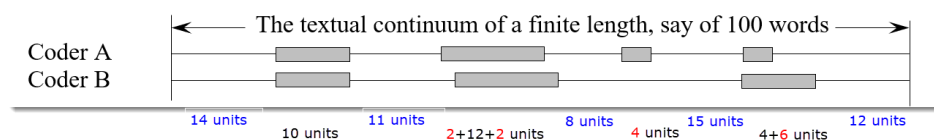


Figure 185: Textual continuum

Evidently. The first pair of segments agree in length and location on the continuum.

The second pair agree in length but not in location. They have an intersection in common. In the third case, coder A finds a segment relevant, not recognized by coder B. the largest disagreement is observed in the last pair of segments. Coder A takes a narrower view than coder B.

In terms of your ATLAS.ti coding, you need to think of your document as a textual continuum. Each character of your text is a unit of analysis for ICA, starting at character 1 and ending for instance at character 17500. For audio and video documents, the unit of analysis is a second. Images can currently not be used in an ICA analysis. The quotation itself does not go into the analysis, only the characters or seconds that have been coded. If you add multiple documents to the analysis, the continuum

is extended like pearls strung on a chain. Thus every character or second where coders agree go into the calculation of the ICA coefficient.

According to Krippendorff (2018), the simplest inter-coder agreement coefficient is:

$$\alpha = 1 - \frac{D_o \text{ observed disagreement}}{D_e \text{ expected disagreement}}$$

It is a measure of the extent to which data can be trusted to represent the phenomena of analytical interest that one hopes to analyze in place of the raw phenomena.

When coders pay no attention to the text, which means they just apply the codes in an arbitrary manner, their coding has no relationship to what the text is about, then the observed disagreement D_o equals the expected disagreement D_e , then $\alpha = 1 - 1 = 0.000$. On the other hand, if agreement is perfect, which means disagreement $D_o = 0$, then $\alpha = 1 - 0 = 1.000$. For further information on how alpha is calculated, see the [appendix](#).

To better understand the relationship between actual, observed and expected agreement, let's look at the following contingency table:

	Perfect agreement					Observed agreement					Expected agreement unrelated to text																																																																															
Codes:	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5																																																																											
1	<table border="1" style="width: 100%; text-align: center;"> <tr><td>10</td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td>10</td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td>10</td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td>10</td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td>10</td></tr> </table>					10						10						10						10						10	<table border="1" style="width: 100%; text-align: center;"> <tr><td>8</td><td>1</td><td></td><td></td><td>1</td></tr> <tr><td>1</td><td>9</td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td>8</td><td></td><td>2</td></tr> <tr><td></td><td></td><td></td><td>10</td><td></td></tr> <tr><td>1</td><td>2</td><td></td><td></td><td>7</td></tr> </table>					8	1			1	1	9						8		2				10		1	2			7	<table border="1" style="width: 100%; text-align: center;"> <tr><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr> <tr><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr> <tr><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr> <tr><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr> <tr><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr> </table>					2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
10																																																																																										
						10																																																																																				
							10																																																																																			
								10																																																																																		
				10																																																																																						
8	1			1																																																																																						
1	9																																																																																									
		8		2																																																																																						
			10																																																																																							
1	2			7																																																																																						
2	2	2	2	2																																																																																						
2	2	2	2	2																																																																																						
2	2	2	2	2																																																																																						
2	2	2	2	2																																																																																						
2	2	2	2	2																																																																																						
2																																																																																										
3																																																																																										
4																																																																																										
5																																																																																										
	$D_o = 0$ and $\alpha = 1.000$					$D_o = 8, D_e = 40, \alpha = 0.800$					$D_o = 40, D_e = 40, \alpha = 0.000$																																																																															

Figure 186: Contingency table for a more complex example

The matrices with perfect and expected agreement/disagreement serve only as a benchmark. In this simple example you could have worked it out in your head, but in a real example in ATLAS.ti this is no longer possible. The numbers are much higher, and often also odd since the calculation is based on the number of coded / non-coded characters / seconds. Therefore, it is good to see the perfect and expected agreements as a point of reference.

In the example above, the tables represent a semantic domain with five codes. If all coders agreed, they would have applied the semantic domain codes to 10 units each. If they had been applied randomly, they would have been evenly distributed amongst 10 units each ($10/5 = 2$). In the observed contingency table, we can see that the coders agree in applying code 4. There is some confusion about the application of code 2 and even more for code 5. The coders have applied the latter to three different codes: 1, 3, and 5. For all codes, where there is confusion the code definition needs to be revisited. For code 5 for instance you need to ask why it was confused with code 1 and 3? Are there any overlaps in the definition? Why was it understood in different ways?

Methods For Testing ICA

ATLAS.ti currently offers three methods to test inter-coder agreement: Simple percent agreement, Holsti Index, and two of the Krippendorff's alpha coefficients. For scientific reporting, we recommend the later two. In version 2 of the ICA tool, planned to be released with version 8.4 of ATLAS.ti, all four of the above listed coefficients will be calculated. You will also be able to inspect and print the coincidence matrices.

All methods can be used for two or more coders.

Percent Agreement

Percentage Agreement is the simplest measure of inter-coder agreement. It is calculated as the number of times a set of ratings agree, divided by the total number of units of observation that are rated, multiplied by 100.

The benefits of percentage agreement are that it is simple to calculate and it can be used with any type of measurement scale. Let's take a look at the following example: There are ten segments of text and two coders only needed to decide whether a code applies or does not apply:

Segments	1	2	3	4	5	6	7	8	9	10
Coder 1	1	1	0	0	0	0	0	0	0	0
Coder 2	0	1	1	0	0	1	0	1	0	0

Table 1: Coding of two coders

Percent Agreement (PA) = number of agreements / total number of segments

$$PA = 6 / 10$$

$$PA = 0.6 = 60\%$$

Coder 1 and 2 agree 6 out of 10 times, so percent agreement is 60%. One could argue this is quite good. This calculation, however, does not account for chance agreement between ratings. If the two coders were not to read the data and would just randomly code the 10 segments, we would expect them to agree a certain percentage of the time by chance alone. The question is: How much higher is the 60% agreement over the agreement that would occur by chance? Below only the results are presented if chance agreement is taken into account. If you are interested in the calculation, take a look at Krippendorff (2004, p. 224-226). The agreement that is expected by mere chance is $(9.6 + 1.6) / 20 = 56\%$. The 60% agreement thus is not impressive at all. Statistically speaking, the performance of the two coders is equivalent to having reliably coded only 1 of the 10 segments, and have arbitrarily assigned 0s and 1s to the other 9 segments.

Holsti Index

Holsti's method (1969) is a variation of percentage agreement, as percent agreement cannot be used if the coders have not all coded the same data segments. When coders were allowed to create their own quotations and did not code pre-defined quotations, the Holsti index needs to be used. Please note, that also the Holsti index does not take into account chance agreement.

The formula for the Holsti Index is:

$$PA (\text{Holsti}) = 2A / (N1 + N2)$$

PA (Holsti) represents percentage of agreement between two coders,

A is the number of the two coders' consensus decisions, and N1 and N2 are numbers of decisions the coders have made respectively.

Percentage agreement and the Holsti Index are equal when all coders code the same units of sample.

Holsti, O. R. (1969). *Content analysis for the social sciences and humanities*, Reading, MA: Addison-Wesley

Cohens kappa

Cohen's Kappa (Cohen, 1960) is another coefficient used in the calculation of ICA and offered by other CAQDAS programs. We have been asked by users why ATLAS.ti does not offer it. Kappa is a modification of Scott's pi and according to Krippendorff (2018) and Zwick (1988) a rather unfortunate modification. There is a conceptual flaw in his calculation, as Kappa counts disagreements between observer preferences for available categories as agreements. In addition, both Cohen's kappa and Scott's P assume an infinite sample size. Krippendorff's alpha coefficient is sensitive to different sample sizes and can also be used on small samples.

Zwick, Rebecca (1988). Another look at interrater agreement. *Psychological Bulletin*, 103, 347-387.

Krippendorff's family of alpha coefficients – from the general to the specific

Inter-coder agreements can be measured at different levels. At the most general level, you get a value for relevance. That is, have the coders identified the areas relevant to the research question in a consensus manner? With reference to ATLAS.ti, this means agreement or disagreement at the level of the quotation, regardless of what was coded there.

At the next level, you get a coefficient for all semantic domains that are included in the analysis. This value takes into account the multiple-valued coding of codes from different semantic domains and is not just the average of the coefficients for all the semantic domains used in the analysis.

Next, you can see if encoders could identify the same semantic domain and how well they could distinguish between codes within the semantic domain.

All four coefficients will be implemented in version 2 of the ICA tool. This is planned for version 8.4.

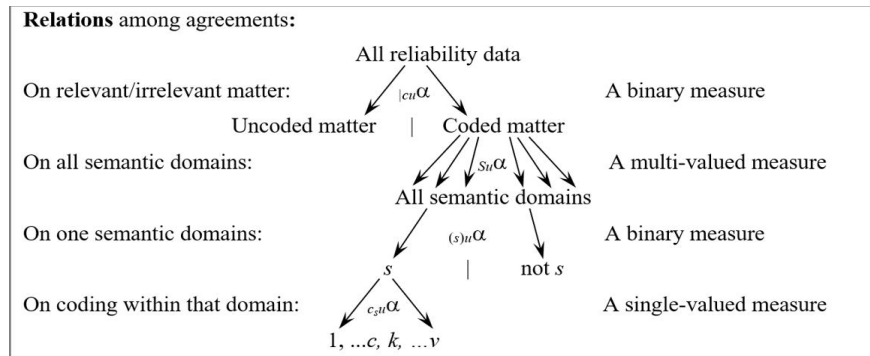


Figure 187: Krippendorff's alpha family - from the general to the specific

${}_{cu}\alpha$ indicates the extent to which coders agree on the relevance of texts for the research project (currently alpha binary)

${}_{su}\alpha$ indicates the extent to which coders agree on the presence or absence of semantic domains, (currently Cu-alpha)

${}_{(s)u}\alpha$ indicates the degree to which coders identify a particular semantic domain (currently cu-alpha)

${}_{csu}\alpha$ indicates the agreement on coding within a semantic domain (not yet implemented)

As background reading we recommend: Krippendorff, Klaus (2018). *Content Analysis: An Introduction to its Methodology*. Thousand Oaks, California: Sage.

Currently implemented are the c-alpha binary and the cu & Cu-Alpha coefficients:

Krippendorff's c-Alpha Binary

The C-Alpha Binary coefficient is a measure for the reliability of distinguishing relevant from irrelevant matter. It is applicable if the coders have created quotations themselves. The coefficient will tell you for each code whether the different coders have identified similar or the same areas in relation to a given meaning (code).

Krippendorff's cu-Alpha / Cu-Alpha

The ${}_{cu}\alpha$ coefficient omits all references to the gaps between valued units and assesses the reliability of coding relevant matter only. It can be used to infer the reliability of **each semantic domain**.

The ${}_{Cu}\alpha$ coefficient with a capital C calculates the reliability for **all selected semantic domains considered together**.

The calculations require that codes of semantic domains have been applied mutually exclusively. This means only one of the sub codes per domain is applied to a given quotation. If this rule is violated cu or Cu-Alpha cannot be calculated. In a future update, the coefficient will be calculated, but it will be indicated there is a problem that you should address.

Decision Rules

A number of decisions have to be made when testing for inter-coder agreement. For instance, how much data material needs to be used, how many instances need to be coded with any given code for the calculation to be possible, and how to evaluate the obtained coefficient.

Sample size

The data you use for the ICA analysis needs to be representative of the total amount of data you have collected, thus of those data whose reliability is in question. Furthermore, the number of codings per code needs to be sufficiently high. As a rule of thumb, the codings per code should at least yield five agreements by chance. Krippendorff (2018) uses Bloch and Kraemer's formula 3.7 (1989:276) to obtain the required sample size.

$$N_c = z^2 \left(\frac{(1 + \alpha_{\min}) (3 - \alpha_{\min})}{4(1 - \alpha_{\min}) p_c(1 - p_c)} = \alpha_{\min} \right)$$

e sample size for the three smallest acceptable reliabilities α_{\min} : 0.667 /

Smallest acceptable α Significance level	.667				.800				.900			
	.100	.050	.010	.005	.100	.050	.010	.005	.100	.050	.010	.005
codes per semantic domain												
10 codes or $p_c = .100$	104*	172	344	421	178	293	587	719	361	595	1190	1459
9 codes or $p_c = .111$	95	156	312	383	162	267	534	654	329	542	1083	1328
8 codes or $p_c = .125$	85	141	281	345	146	241	481	590	297	489	980	1198
7 codes or $p_c = .143$	76	125	251	307	130	214	429	526	265	436	872	1069
6 codes or $p_c = .167$	67	110	220	270	114	189	377	462	233	384	768	941
5 codes or $p_c = .200$	58	95	190	233	99	163	326	400	202	332	667	815
4 codes or $p_c = .250$	49	81	161	198	84	139	277	340	172	283	566	694
3 codes or $p_c = .333$	41	67	135	165	71	116	233	285	144	238	477	584
2 codes or $p_c = .500$	36	60	119	146	62	103	206	252	128	211	422	518

*number of codings for the semantic domain after merging

Table 2: Required sample size (adapted from Krippendorff, 2018)

If you have a semantic domain with 4 codes and each of the codes are equally distributed, you need a minimum of 139 codings for this semantic domain if the minimum alpha should be 0.800 at a 0.05 level of statistical significance. For a lower alpha of 0.667, you need a minimum of 81 codings at the same level of statistical significance. If the frequencies across the sub categories per domain are not equally distributed, you need to increase the sample size. By 4 codes in a semantic domain, the estimated proportion p_c of all values c in the population is .250 (1/4).

If the distribution is unequal, you need to make a new estimate for the sample size by using a p_c in the above formula that is correspondingly less than 1/4.

Acceptable level of reliability

The last question we need to discuss is when to accept or reject coded data based on the ICA coefficient. Krippendorff's (2018) recommendations are:

- Strive to reach $\alpha = 1.000$, even if this is just an ideal.
- Do not accept data with reliability values below $\alpha = 0.667$.
- In most cases, you can consider a semantic domain to be reliable if $\alpha \geq 0.800$.
- Select at least 0.05 as the statistical level of significance to minimize the risk of a Type 1 error, which is to accept data as reliable if this is not the case.

Which cut-off point you choose always depends on the validity requirements that are placed on the research results. If the result of your analysis affects or even jeopardizes someone's life, you should use more stringent criteria. A cut-off point of $\alpha = 0.800$ means that 80% of the data is coded to a degree better than chance. If you are satisfied with $\alpha = 0.500$, this means 50% of your data is coded to a degree better than chance. The latter sounds to me a bit like tossing a coin and playing heads or tails.

How To Calculate Inter-coder Agreement

Before you take just any data set and run the inter-coder agreement analysis, we strongly recommend that you read all of the above in this chapter on inter-coder agreement.

" To summarize the steps:

- The analysts develops the code system providing clear definitions for each code.
- The analyst creates a project bundle file for each coder that either contains only the documents to be coded and the code system, or the documents, the quotations, and the code system.
- The analyst trains the coders.
- The coders import the project bundle file and rename the project file by adding the coder name. In addition, they double-check under which user name they are logged in.
- The coders code the data independently. If they have questions or difficulties applying the codes, they write notes into a memo.
- Once the coders are done, they prepare a project bundle file for the analyst.
- The analyst imports the project bundle files from each coder and briefly checks the work of each coder and reads the comments they have written.
- The analyst starts the inter-coder agreement mode and merges the projects of the coders.
- The analyst runs the ICA analysis.

The step-by-step instructions below start with entering the ICA mode. All other steps are covered by the instructions for team work. See "Setting Up A Team Project". The following instructions assume 2 coders.

- Import the project of of coder 1. We recommend to rename it, so that the name indicates that this the version for testing inter-coder agreement (**PROJECT / RENAME**).

Enter inter-coder Agreement mode by selecting **PROJECT / INTERCODER AGREEMENT MODE**

Merge the project of coder 2: **PROJECT / MERGE PROJECT**. For detail see "Merging Sub Projects". If there are more than 2 coders, continue to merge other projects.

In ICA mode, the codings of all coders are added, so you can compare them in the margin area and the ICA tool. If you hover a coding with your mouse in the margin area, you see the coder name. See Figure 188.

A coding is the link between a code and a quotation. In ICA mode, you can see which coder has applied which code to a quotation.

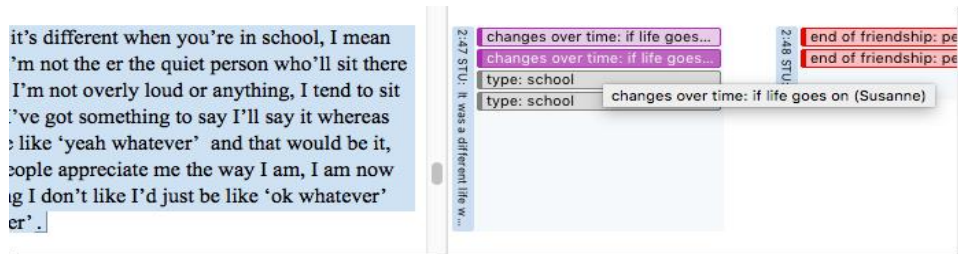


Figure 188: Display of the codings of different users

To start the ICA Analysis, select **ANALYSIS / CALCULATE INTERCODER AGREEMENT**.

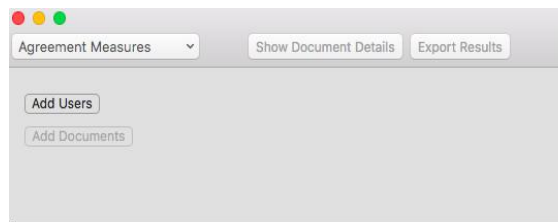


Figure 189: Opening screen of the ICA tool

Click on the **ADD USER** button and select two or more coders.

Show Document Details

Click on the **ADD DOCUMENTS** button and select the documents that should be included in the analysis. The default option is for all selected documents to be regarded as one continuum and all coded quotations of these documents will go into the calculation. You can, however, also view agreements / disagreements per document and get a coefficient for each document.

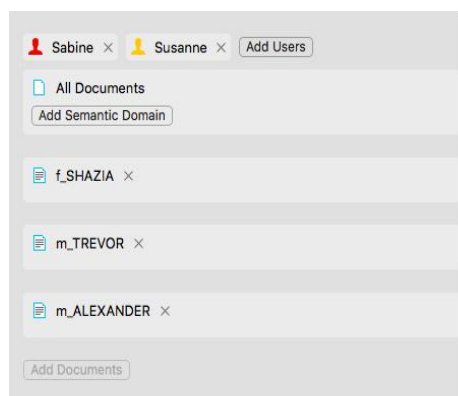


Figure 190: Adding codes, documents and codes for the ICA analysis

Click on the **ADD SEMANTIC DOMAIN** button and add one or more codes to the domain.

A semantic domain can also consist of only one code.

- ACTIVITIES
- activities: clubbing / going for a drink
- activities: going for a meal
- activities: going for coffee
- activities: leisure
- activities: miscellaneous
- activities: sports
- BENEFITS
- benefits: caring for each other
- benefits: helping each other
- benefits: learning from each other
- benefits: supporting each other
- BEST FRIENDS
- best friends: best (wo)man at wedding
- best friends: can have arguments with
- best friends: don't let you down
- best friends: friendship will endure
- best friends: having history together
- best friends: like family

Figure 191: User defined semantic domains

Repeat this process for each semantic domain.

As there currently is no function to define a semantic domain formerly, all codes that you are adding from the list will be considered to belong to a semantic domain. As you can see in Figure 191, semantic domains were already built indirectly in the process of developing the code system by adding the same prefix to all codes that belong to the same semantic domain like ACTIVITIES or BENEFITS. Please remember that all sub codes of a semantic domain (i. e., all codes with prefixes) must be applied to quotations in a mutual exclusive manner. If the quotation contains information about activities you do with friends and benefits of friendship, you can apply multiple sub codes of different domains.

If you apply multiple sub codes of the same semantic domain to a quotation, a Krippendorff's alpha coefficient cannot be computed.

After you have added coders, documents and codes, your screen looks similar to what is shown in Figure 192.

The quotations of the semantic domain are displayed on the right-hand side. When you select a quotation, the full content is shown in the preview and you can write comments. If you double-click, you can view the quotation in context.

If you click on one of the codes, only the quotations of the selected code and coder are shown in the quotation window:

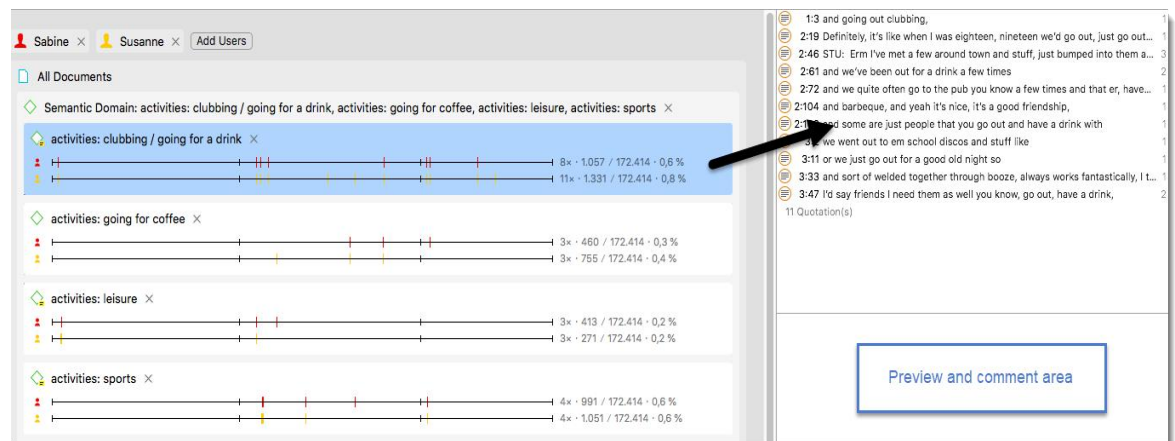


Figure 192: Review quotations for each code and coder

You can remove coders, codes or documents from the analysis by clicking on the X.



Figure 193: Descriptive statistics

To the right of each coder line you see some descriptive statistics:

The red coder has applied the code “activities clubbing / going for a drink” 8 times. The number of characters that are coded with this code are 1057 out of a total of 172.414 characters in all three selected documents, which is 0,6%.

The yellow coder has applied the code “activities clubbing / going for a drink” 11 times. The number of characters that are coded with this code are 1331 out of a total of 172.414 characters in all three selected documents, which is 0,8%.

To calculate ICA, select one of the four method. See “Methods For Testing ICA” for more detail.

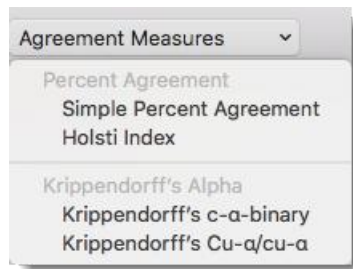


Table 3: Agreement measures

The c-alpha binary for the semantic domain 'activities' in Figure 194 is 0,896. This means that the reliability for identifying relevant from irrelevant matter related to the codes of this domain is high.

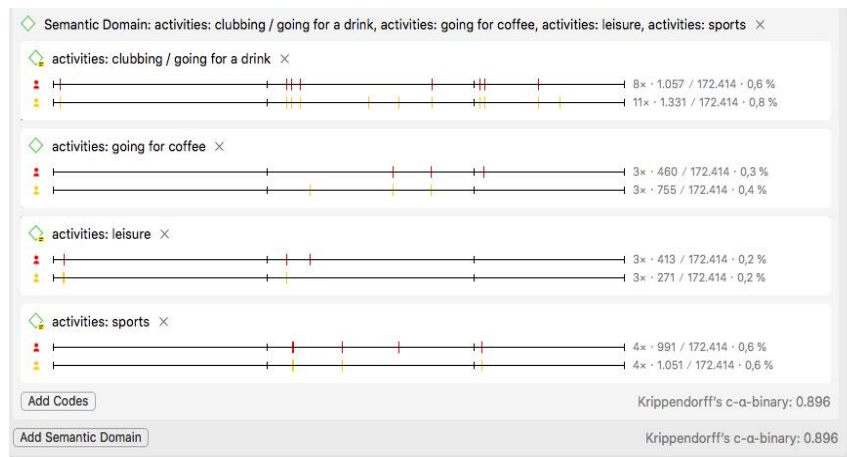


Figure 194: Display of results for c-alpha binary

The results for cu-alpha and Cu-alpha for the two selected domains are shown in Figure 195.



Figure 195: Display of results for cu-alpha and Cu-alpha

The difference between the two measures is that the lower case cu-alpha applies to one semantic domain only, the capital Cu-alpha applies to all selected semantic domains. It is not simply an average of all lower case cu-alphas, as sub codes from different domains can potentially be applied to one quotations. This is referred to as multi-valued coding. Figure 184 shows how multi-valued coding looks like in ATLAS.ti. The quotation is coded with codes from four semantic domains. Both coders

Tools For Basic And Advanced Analysis

Overview

The following options are at your disposal:

- Simple retrieval by code in the Quotation and Code Manager
- Code Cooccurrence Table
- Codes Documents Table
- Complex retrievals by a number of criteria, Boolean, semantic and proximity operators in all Managers
- The creation of smart codes also offering the full range of operators (Boolean, semantic and proximity operators).
- Applying global filters

For most of these options some basic knowledge on the available Boolean, semantic and proximity operators is necessary. Therefore, before explaining any of the tools, in the next section all operators are explained. We recommend that you first read this section. It will help you to better understand all further analysis tools.

Available Operators For Creating Queries

In this section the three main sets of logical operators are explained in detail. You need to know about them, what they mean and what they do in relation to a number of different functions in the software. For example, you will come across Boolean operators when creating smart document / code or memo groups ("Working With Smart Groups"). You need to know about all three set of operators when creating smart codes ("Working With Smart Codes"), or when creating queries in managers ("Creating Queries in Managers").

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.

Boolean Operators

- ∨ OR: Any of the following are true
- ⊕ Exactly one of the following is true
- ∧ AND: All of the following are true
- ¬ NOT: None of the following are true

Figure 198: Available Boolean operators

Four Boolean operators are available: XOR (exactly one), AND (All), OR (any) and NOT (none).

OR, XOR, and AND are *binary operators* which need exactly two operands as input. NOT needs only one operand. However, the operands themselves may be of arbitrary complexity. Codes, code groups, or other smart codes can be used as operands: "(A OR B) AND (NOT C AND D)."

XOR (Exactly one of the following is true): The XOR operator 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)."

AND (All of the following are true): 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.

OR (ANY of the following are true): 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 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'."

NOT (None of the following are true): 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 *not* 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."

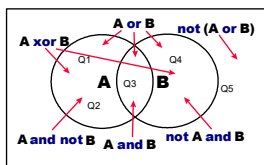


Figure 199: Boolean queries depicted as Venn diagrams

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 necessarily fit).

Venn diagrams are descriptive schemes for illustrating the different set operations associated with Boolean operators.

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 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., All Children of code (POSITIVE ATTITUDES)).

- ∨ OR: Any of the following are true
- ⊕ Exactly one of the following is true
- ∧ AND: All of the following are true
- ¬ NOT: None of the following are true

Figure 200: Available semantic operators

The **All parents of Code** operator looks at all directly linked codes and their quotations at higher levels.

The **All children of Code** 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 "The following can be defined: Cosmetic and descriptive as well as structural aspects of relations."); all others are types ignored. When building a terminology from your codes, use the ISA relation for sub-term links.

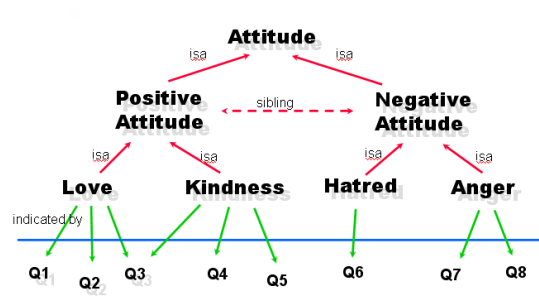


Figure 201: A hierarchy of concepts suitable for semantic retrieval

Like the OR (any) operator in the set of Boolean operators, the 'All children of Code' operator may produce large result sets. However, because you make use of a theory, the "precision" is likely better as compared to using OR (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.

The **Children of all parents of Code** operator finds all quotations that are connected to the selected code or any other descendants of the same parent code. Example: "All quotations coded with Love or any other Positive Attitude, here: kindness." See Figure 201 above.

With such a network of codes the following queries would make sense (Q1 to Q8 = quotations):

All children of Code (Positive Attitude) => {Q1, Q2, Q3, Q4, Q5}

All children of Code (Negative Attitude) => {Q6, Q7, Q8}

All children of Code (Attitude) => {Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8}.

Because of non-commutativity, every proximity operator comes in two versions.

Proximity Operators

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.

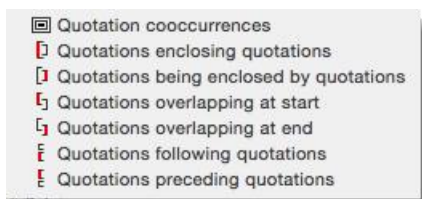


Figure 202: Available proximity operators

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.

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.

Quotations enclosing quotations: A ENCLOSES B retrieves all quotations coded with A that contain quotations coded with B.

Quotations being enclosed by quotations: A being enclosed by B (WITHIN) retrieves all quotations coded with A that are contained within data segments coded with B.

For example, if you want to retrieve all segments for "give: joy" related to the code "#fam: have children" (see Figure 203), you would need to enter the query as follows:

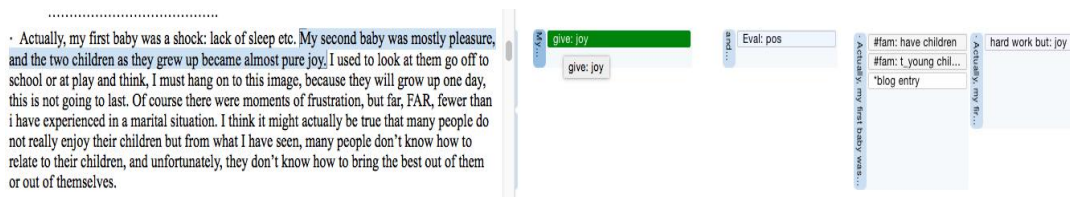


Figure 203: Visualizing the spatial relations between segments



Figure 204: Being enclosed operators

If you were to enter the query the other way around (i.e., the code 'fam: have children' first), the query tool would not deliver any results.

If you enter: Quotations enclosing quotations: "#fam: have children," "give joy, the the larger segments coded with "#fam: have children" are retrieved:



Figure 205: Enclosing operators



From the above example we learn that you begin with the code whose content you are most interested in. **Overlap Operators**

The *overlap* operators describe quotations that overlap one another:

Quotations overlapping at start: A OVERLAPS B retrieves all quotations coded with A that overlap quotations coded with B



Quotations overlapping at end: A OVERLAPPED BY B retrieves all quotations coded with A that are overlapped by quotations coded with B.

If you are interested in data segments coded with "Happiness: effect of wanting children" that co-occur with "hard work but," you click: "Happiness: effect of wanting children," "hard work but" COCCUR. If you want to read the "hard work but" segments, you enter the query the other way around, i. e. starting with the "hard work but" code.

The Co-occurrence Operator

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 **Quotation cooccurrence** operator. Co-occurrence is essentially a short-cut for a combination of the proximity operators discussed above, plus the operator AND (all). AND is a Boolean operator, but also finds cooccurrence, namely if coded segments overlap 100%.

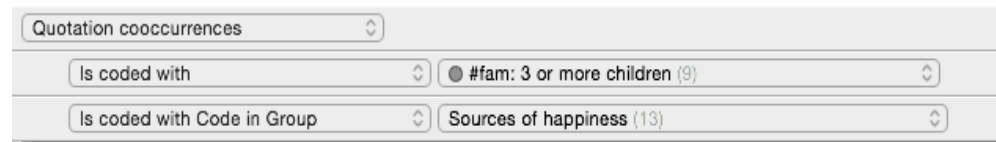


Figure 206: Example of a quotation cooccurrence query

The query shown in Figure 206...retrieves all quotations [text missing?] coded with '#fam: 3 or more children' that cooccur with quotations coded with codes in the code group 'Sources of happiness' in whatever way.

The more general cooccurrence operator is quite useful when working with transcripts. In interviews, people often jump back and forth in time or between contexts, and therefore it often does not make much sense to use the very specific embedding or to overlap operators. With other types of data they are however quite useful. 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. The WITHIN operator comes in very handy in such instances. The same applies when working with pre-coded survey data. ATLAS.ti pre-codes your questions, followed by manual or further selected auto 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 disjointed quotations.

Quotations following quotations: A FOLLOWS B retrieves all quotations coded with A that follow quotations coded with B.

Quotations preceding quotations: A PRECEDES B retrieves all quotations coded with A followed by quotations coded with B.

When selecting any of the two operators, you can specify a maximum distance. Possible base units are characters and paragraphs for text, milliseconds for audio files, frames for video data and pixels for images.

Simple Quotation Retrieval

Quotation Retrieval in the Code Manager

Full quotation preview:

Select a code in the Code Manager. The full content of all quotations is shown in the preview area at the bottom of the main window:

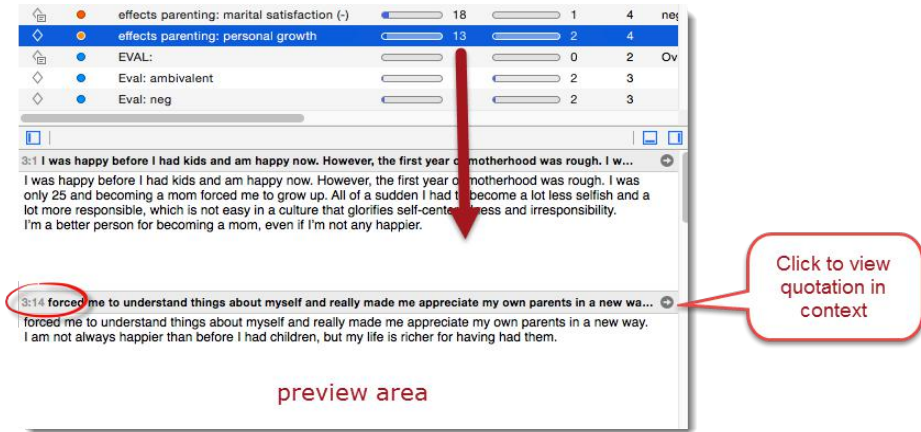


Figure 207: Preview quotations by code in the Code Manager

View quotation in context:

- Select a code in the Code Manager. If not opened, open the inspector on the right-hand side of the Manager. All linked quotations are listed in the bottom pane of the inspector.
- Click on the right-arrow to view each quotation in context.

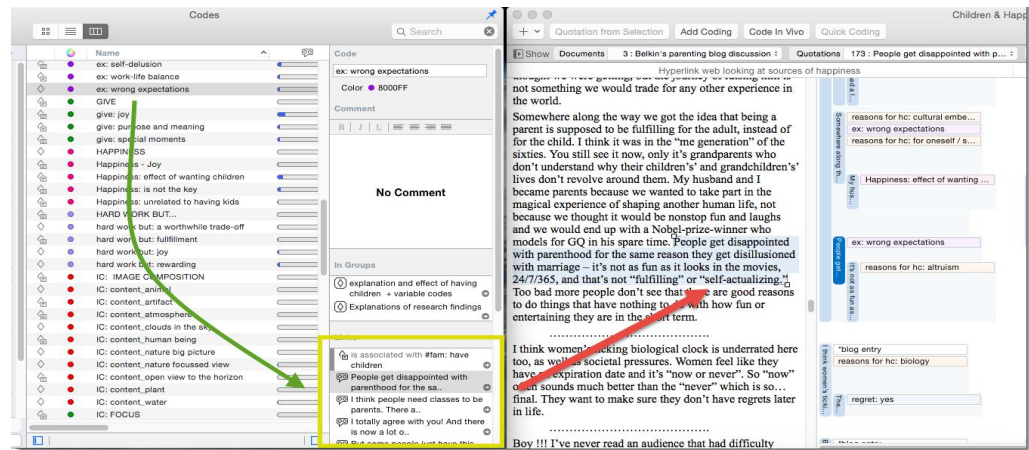


Figure 208: Simple Retrieval, access of quotations via Link section in inspector

- Or open the Code Manager and double-click on a code. The list of quotations coded by this code opens. Click on a quotation to view it full length and in context.

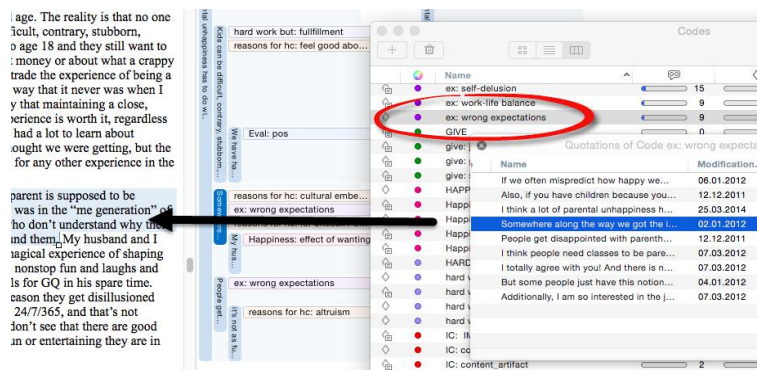


Figure 209: Simple Retrieval via double click on a code

Quotation Retrieval In The Quotation Manager

- Open the Quotation Manager.
- Select a code in the side panel on the left-hand side. This filters the list of quotations and only those quotations linked to the selected code are shown. Click on each quotation to view its content in the preview pane at the bottom.

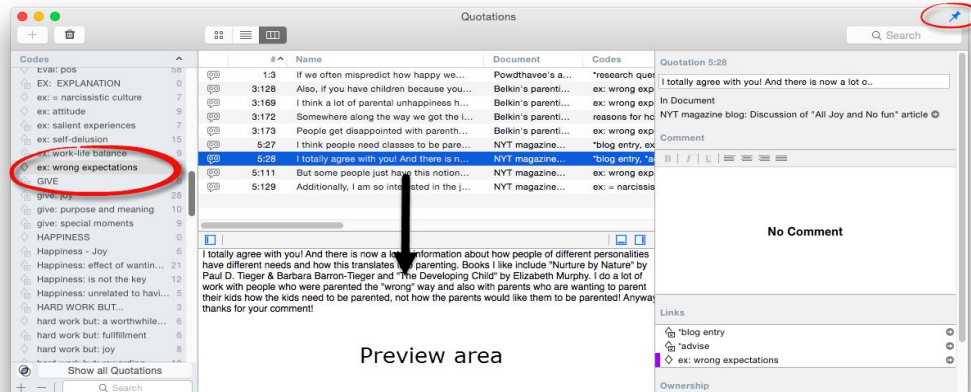


Figure 210: Quotation Manager

To view the quotations in context, make sure that the Quotation Manager stays on top by selecting the pin (top right). Double-click on each quotation to view it in context.

Simple Boolean Queries In The Quotation Manager

The simple retrieval option in the Quotation Manager can be extended to include also more than one code:

- Open the Quotation Manager.
- Select two or more codes holding down the **cmd** key.

Figure 286 shows the result of an example ALL query (i.e.: all criteria must apply). The two codes '#fam: 2 children' and '#fam:t-young children' have been selected holding down the **cmd** key. The quotation list displays the resulting 4 quotations that contain all comments written by parents that have two young children.

The quotation content is displayed in the bottom pane.

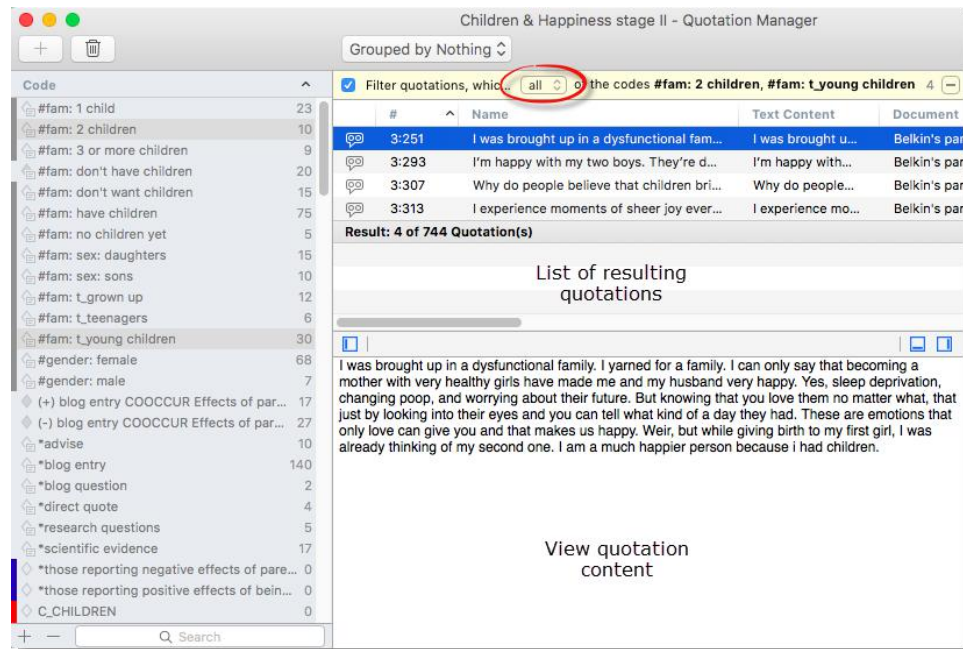


Figure 211: Running an ALL query in the Quotation Manager

Boolean operators are explained in detail in the section "Boolean Operators".

Complex Quotation Retrieval (Query Tool)

Those who are familiar with ATLAS.ti 7 for Windows, this is more or less equivalent to using the Query Tool. The Mac version however offers many more options to ask questions about your data. In addition to using the three group of operators (Boolean, semantic and proximity operators), you can combine a code-based search with a text search, or only search for a particular set of quotations that has comments or hyperlinks, or has been modified by a particular author, and so on. In addition, the "Grouped by" option allows you to view results by groups, which allows for an additional layer of analysis (see "The Grouped By Option" on page 64).

The following operations are available:

Quotation Number Name Comment Has Comment Text content Type	Quotation attributes and content
Creation date Created by Modification date Modified by	Time stamps / User
<input checked="" type="checkbox"/> Is coded with Linked with quotations Linked with memos Is in document	Linkages (coded / hyperlinked / linked to a memo / part of a particular document)
∨ OR: Any of the following are true ⊕ Exactly one of the following is true ^ AND: All of the following are true ¬ NOT: None of the following are true	Boolean operators
↓ Is coded with children of code (recursive) ↑ Is coded with parents of code (recursive) ↕ Is coded with siblings of code (recursive)	Semantic operators
<input type="checkbox"/> Quotation cooccurrences <input type="checkbox"/> Quotations enclosing quotations <input type="checkbox"/> Quotations being enclosed by quotations <input type="checkbox"/> Quotations overlapping at start <input type="checkbox"/> Quotations overlapping at end <input type="checkbox"/> Quotations following quotations <input type="checkbox"/> Quotations preceding quotations	Proximity operators

Figure 212: Query options for quotations

Quotation attributes: The options in the first block allow you to search for specific aspects of your quotations or for particular words contained in a quotation (text content), or for particular words in the quotation name (Name)

Time stamp / User: The time options allow you to query for creation and modifications dates or for the user that has created or modified a quotation

Linkages: In the next group you find options related to the type of entities a quotation can be linked to like codes, other quotations, memos or documents.

This is followed by the three groups of standard operators. For a detailed description see here: "Available Operators For Creating Queries" on page 125.

Video tutorial: [ATLAS ti Mac-Filtering and Querying the Data](#)

Building A Query In The Quotation Manager

The examples presented below are based on the "Children and Happiness" project.

You can download the project file [here](#).

If you are not yet familiar with this sample project, here is a short description: The idea for this project was sparked by a journal article that summarizes relevant literature on the relationship between happiness and having children. The results based on statistical analysis show a negative correlation between measures of happiness and having children. This was picked up by a person writing a parenting blog and she posted it on her blog. The *New York Times Magazine* also published a long article about it. In turn, numerous people commented both on the blog and on the NYT article. These comments comprise one major part of the example project, and we can examine the reaction of readers being confronted with the statement: Children make you unhappy. As the documents contain responses from many different individuals, respondent characteristics like family status ore gender have been coded.

Furthermore, the project also contains fictional survey data imported via an Excel spread sheet. The survey data contain answers from 24 respondents to two open ended questions: Reasons for having and for not having children. As imported survey data in ATLAS.ti is case-based, the demographics of the respondents are represented by document groups.

Building Queries: General Principles

You start building any query by selecting the filter icon and adding one or more rules by clicking on the + button:

- Open the Quotation Manager and click on the filter icon.
- Click on the + button to begin adding rules.



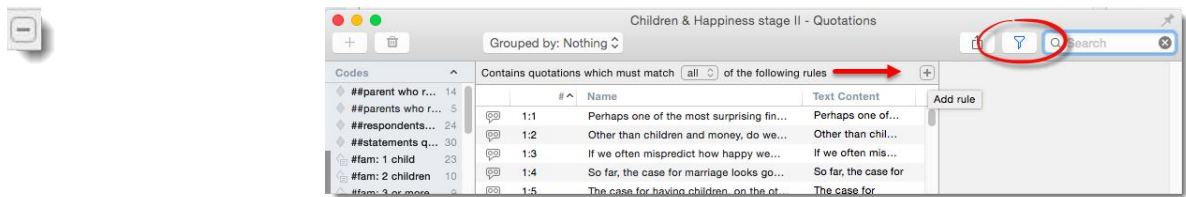


Figure 213: Add rules

To remove a rule, click on the minus (-) button.

To clear a query click on the (-) minus button.



All quotations that result from a query are displayed below the query and can be exported with a click on the Export button (see left). See also "Data And Project Export" on page 172.

On the following pages, a step-by-step instruction for a number of query options is provided in order to show by way of example how to build queries in the Mac version. As the possibilities are too numerous to show them all, the emphasis is on teaching you the logic behind building queries, so that you can transfer this knowledge after a bit of practicing to your own projects.

Finding Quotations Coded With Two Or More Codes (OR)

There are two ways to click such a query:

Option 1

- Click on the filter icon to start the query.
- For an OR query you can simply change the first line to "any" and add the codes that are you interested in.
- Click on the plus sign and select "is coded with" "Code," then select a code.
- Repeat this for the second code.

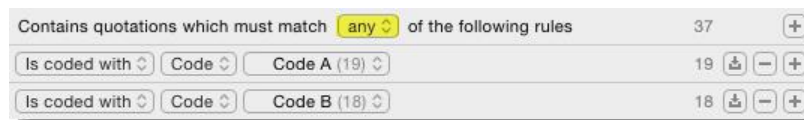


Figure 214: Simple OR query

Option 2

1. Set the rule in the first line to ALL.
2. Click on the + button to add a new line (= rule).
3. Select the operator "OR: Any of the following are true." Two new lines are added automatically.
4. Enter Code A and Code B into the third field of these two lines.



Figure 215: Simple OR query , option 2

Finding Quotations Coded With Codes Of A Code Group Containing A Particular Word



- Click on the filter icon to start the query.
- Set the first line option to "all."

- Click on + and select "is coded with."
- Click on the drop down arrow in the second field and select: "Code of Group."
- In the third field, select the code group. Click on + to add a new line.



Figure 216: Combining a text query with a code query

- As operator select "Text content." In the third field enter a word or phrase that should be contained in the quotation of the selected code group. The search can be case sensitive. Activate this option if desired.
- If you select "is" instead of "contains," the quotation needs to be exactly the same as the entered search term.

Finding Quotations Coded With Co-occurring Codes

The result of a query in the Quotation Manager are always quotations. As the overlap of two co-occurring quotations is in most cases not a quotation (exceptions are AND occurrences), the result list will give you the quotations of the first code entered, here: all quotations coded with #fam: have children.



- Click on the filter icon to start the query.
- Set the first line option to "all." Click on + to add a new rule.
- Select the operator "Quotation Cooccurrences." Two new lines are added automatically.
- Select a code, here: "fam: have children" and "children: >happiness."

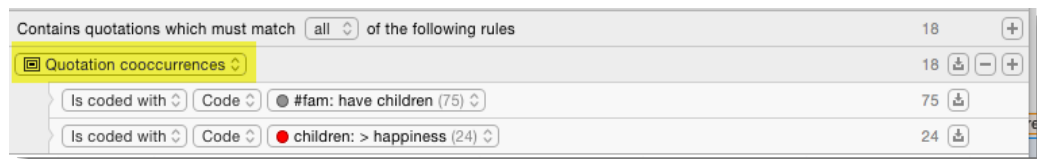


Figure 217: Looking for code co-occurrences

The 18 resulting quotations are coded with the code "#fam: have children" and within or somewhere overlapping are quotations coded with "children: >happiness." If you want to focus your reading on the quotations coded with "children:>happiness," you need to enter the query the other way around:



Figure 218: Pay attention to the order of codes when using proximity operators

When using proximity operators, the order of the codes may also have an effect on the resulting number of quotations. As you can see in Figure 217 and Figure 218, starting the query with "#fam: have children" results in 18 quotations; starting with the code "Children:>happiness" results in 19 quotations. For more detail, read the section: "Proximity Operators" on page 126.

Finding Quotations Coded With A Selected Code Restricted to A document group



- Click on the filter icon to start the query.
- Set the first line option to "all." Click + to add a new rule.
- Select the operator "is code with" / "code." Select a code in the third field. Click + to add the next rule.
- Select the operator "is in document."
- Change the second field to "Documents of group" by clicking on the drop-down arrow.

Select a document group in the third field.



Figure 219: Quotation query restricted to a document group

If you now want to check what other attributes apply to the 7 quotations, change the Grouped by option to "Grouped by Document Groups" as shown in Figure 220.

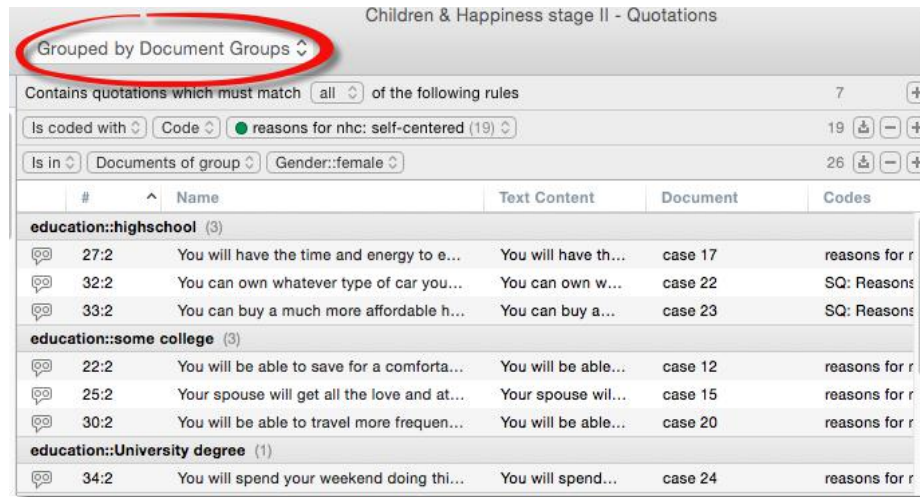


Figure 220: Results of a query sorted by document groups

Finding Quotations Coded With A Selected Code Restricted To Two (Or More) Document Groups

Let's assume you are interested in the quotations of the code "reasons for not having children: self-centeredness" in direct comparison between females and males. If you want to find all quotations of this code for both male and female (survey) respondents as in this case, the query needs to be clicked as follows:

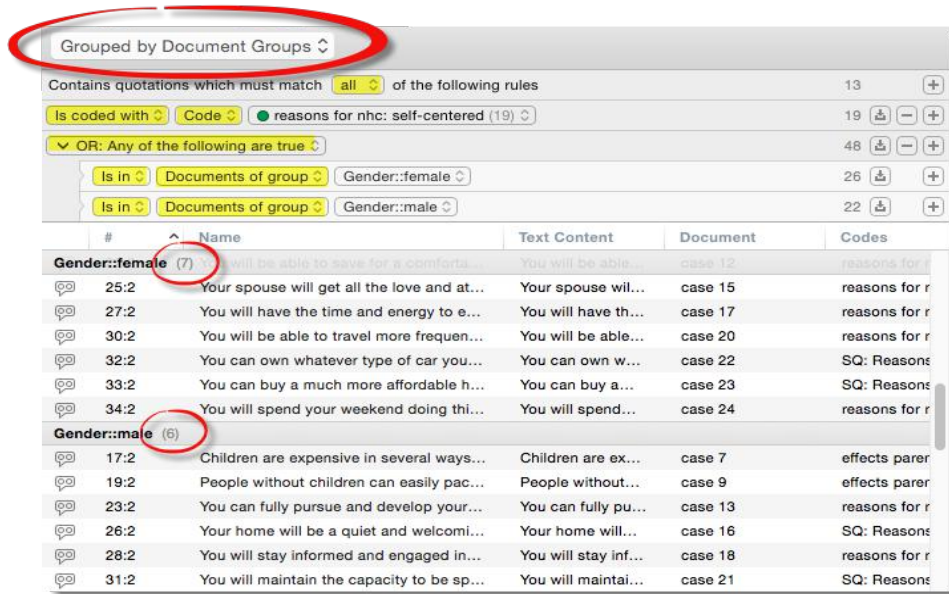


Figure 221: Comparing quotations of a code for two groups

- As view option select "Grouped by Document Groups" at the top of the window.
 - Click on the filter icon to start the query.
 - Set the first line option to "all." Click on the + sign to add the next line.
 - Select the operator "is coded with" / "code." Select a code in the third field. Click + to add a new rule.
 - Select the operator "OR: any of the following is true." This automatically adds two further lines.
 - In each line select "is in document" and then set the second field to "Documents of group." Select the desired document group, here "Gender::female" and "Gender::male" in the third field.
- Scroll the result pane to see the quotations of the two groups Gender::female and Gender::male.

Combining the various filter and grouping options available turn the Quotation Manager into a very powerful query tool.

Building A Query with An Embedded Term

Queries can be as simple or as complex as you like them to be. For most users it might be sufficient to build queries with two codes or code groups. To get used to the query logic, we recommend that you start with those simple queries and over time you will feel also be comfortable to click more complex queries. Below a few query examples are shown that use embedded terms.

EXAMPLE 1

Based on the Children & Happiness project, the following question can be asked: Identify those respondents who wrote a comment on the two blogs in the project and explained the research findings with self-delusion or having "wrong" expectations. Let's do this step-by-step:

Codes needed:

		*blog entry	<div style="width: 100%;"></div>	140	<div style="width: 100%;"></div>	1
		ex: self-delusion	<div style="width: 100%;"></div>	15	<div style="width: 100%;"></div>	1
		ex: wrong expectations	<div style="width: 100%;"></div>	9	<div style="width: 100%;"></div>	1

Figure 222: Codes needed for example query: embedded rule



We need to start with the #blog entry code, as its quotations enclose all quotations related to study design:

- To start the query, click on the filter icon. Set / leave the first line option to "all."
- Click + and select the operator "Quotations enclosing quotations." Two new lines are added.



Figure 223: Start the query by selecting the Enclose operator first

- Select the code "#blog entry" in the first line.
- Next we need to embed an OR term: Click on the embed rule button and select the operator OR:

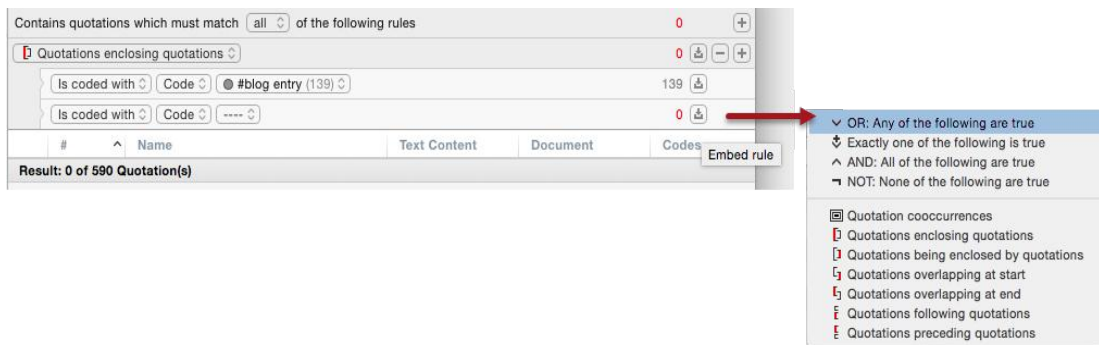


Figure 224: Adding an Embed Rule

- Select the codes "ex: self-delusion" and "ex: wrong expectations" to fill in the arguments for the OR query:

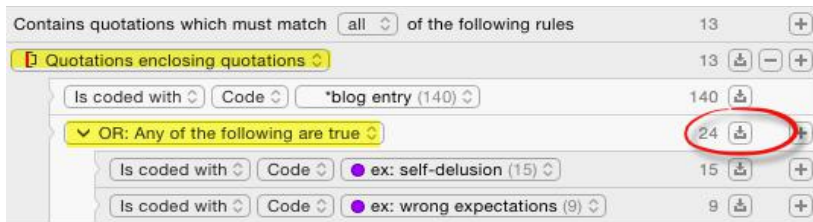


Figure 225: After the operator for the embedded rule is selected, the codes can be filled in

ATLAS.ti found 13 quotations that match this query.

EXAMPLE 2

The following query finds all quotations where respondents write about both positive and negative effects of parenting in the same blog post:

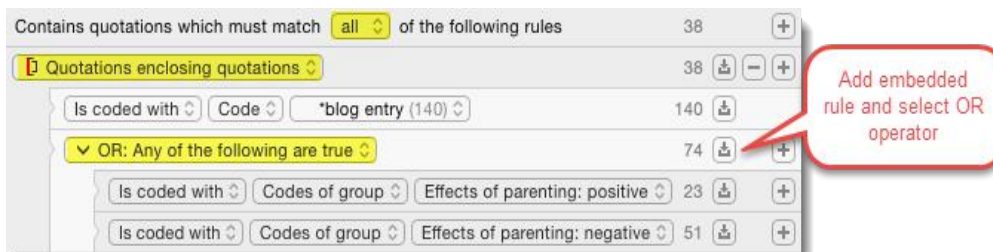


Figure 226: More complex query in ATLAS.ti Mac

- Start by selecting the enclosing operator **QUOTATIONS ENCLOSED QUOTATIONS**.
- Next, enter the code `blog entry`.



- Then an embedded rule needs to be added by clicking the **EMBED RULE** button and selecting the **OR** operator.
- Lastly the two code groups `effects of parenting: positive` and `effects of parenting: negative` are added.

EXAMPLE 3

The aim of the next query is to find all quotations coded with any of the codes in the code group "sources of happiness" of those respondents who also wrote something about reasons for having children in the same blog comment. In a second step, the query results are further filtered by document groups.



- To start the query, click on the filter icon. Set / leave the first line option to "all."
- Click + and select the operator "Quotations cooccurrence."
- Two new lines are added. Change the second field to code group and select the group "Sources of happiness."



Figure 227: Query 2 with embedded rule - step 1



- Click on the Embed Rule button and select the operator "Quotations enclosing quotations."
- Two new lines are added. In the first line select the code "blog entry."



Figure 228: Example query 2 with an embedded rule

- Change the second field in second line to code group and select the group "reasons for having kids."

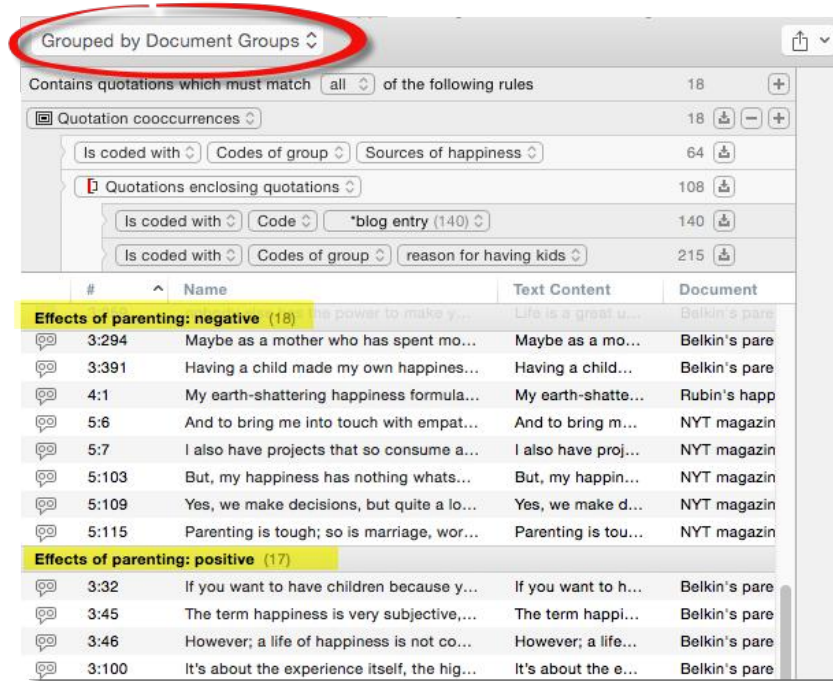


Figure 229: Results of the embedded query sorted by document groups

The query result shows 18 quotations. If you now group the results by document groups, it can for instance be seen which of the quotation is contained in documents where respondents write negatively or positively about the effects of parenting. If you work with interview data, your document groups are likely to represent demographics characteristics like gender and you may want to compare female and male respondents, age groups, geographic locations, or any other characteristic you are interested in.

Creating Queries in Managers

How To start



Open the Manager and click on the filter icon.



Click on the + button to begin adding rules.

<ul style="list-style-type: none"> ✓ Document Number Name Comment Has Comment Text content Type 	Document attributes and content
<ul style="list-style-type: none"> Creation date Created by Modification date Modified by 	Time stamp / User
<ul style="list-style-type: none"> Is in group Document contains Contains codes 	Linkages: document groups, quotations, codes
<ul style="list-style-type: none"> ∨ OR: Any of the following are true ⊕ Exactly one of the following is true ∧ AND: All of the following are true ¬ NOT: None of the following are true 	Boolean operators

Figure 230: Query options for documents

Document Queries

For documents, the following query options are available:

The results of all document queries are documents.

Figure 230 shows as example an AND query. The aim was to retrieve all documents from married female respondents.

Contains documents which must match		all	of the following rules	7	+
^ AND: All of the following are true					
Is in	Group	marital status::	married	7	[-] +
Is in	Group	Gender::	female	10	[-] +
Is in	Group			13	[-] +
# ^	Name	Type	Quotations	Comment	
18	case 8	Text	2	imported survey data	
21	case 11	Text	2	imported survey data	
22	case 12	Text	2	imported survey data	
24	case 14	Text	2	imported survey data	
25	case 15	Text	2	imported survey data	
27	case 17	Text	2	imported survey data	
30	case 20	Text	2	imported survey data	
Result: 7 of 38 Document(s)					

Figure 231: Example document query

<ul style="list-style-type: none"> ✓ Code 	
<ul style="list-style-type: none"> Name Comment Has Comment Has color Is smart 	Code attributes
<ul style="list-style-type: none"> Creation date Created by Modification date Modified by 	Time stamps / user
<ul style="list-style-type: none"> Linked with quotations Linked with memos Is in group Used in documents 	Linkages: links to quotations, memos, code groups, used in a selected document
<ul style="list-style-type: none"> ∨ OR: Any of the following are true ⊕ Exactly one of the following is true ∧ AND: All of the following are true ¬ NOT: None of the following are true 	Boolean operators
<ul style="list-style-type: none"> ↓ Children of code (recursive) ↑ Parents of code (recursive) ↕ Siblings of code 	Semantic operators

Figure 232: Query options for codes

Code Queries

For codes, the following query options are available:

The results of a code query are always codes.

Code Query Combined With The "Grouped By" Option

As has been described for quotations, this can also be combined with the "Grouped by" option. Figure 233 shows a query for all codes of the code group *reasons for having kids* grouped by document groups that represent various educational levels.

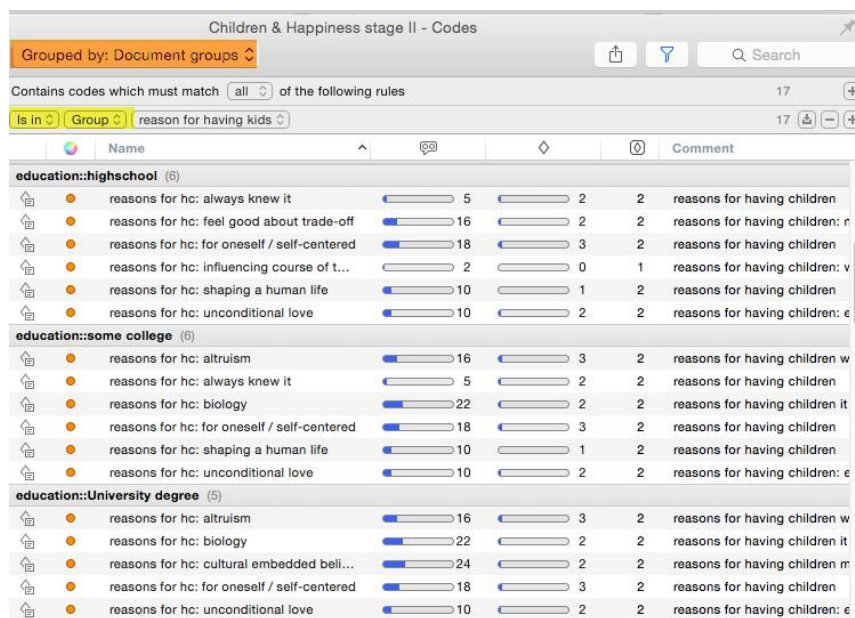


Figure 233: Code query combined with a "grouped by" option

Finding Codes Linked To A Quotation Query

A code query can also be combined with a quotation query - however different from a quotation query, the results are codes, namely those linked to the quotations that would come up as a result of the quotation query. This is how it works:

You select the **LINKED WITH** option plus the option **QUOTATIONS OF QUERY**. In the next step you enter the quotation query as has been explained above. The query options are the same as available in the Quotation Manager, see Figure 212 on page 132.

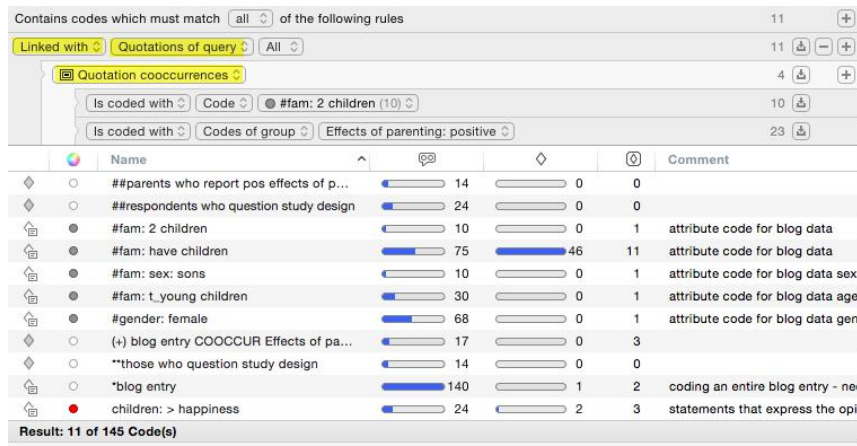


Figure 234: Code query combined with a quotation query

Endless Possibilities

The possibilities are endless. If you were to click on the *is coded with* button, the whole range of quotation operators is at your disposal again. The following example (Figure 235) shows a code query that asks for all codes that are linked to quotations that contain the word *happiness* and occur in document *Rubin's happiness project*.

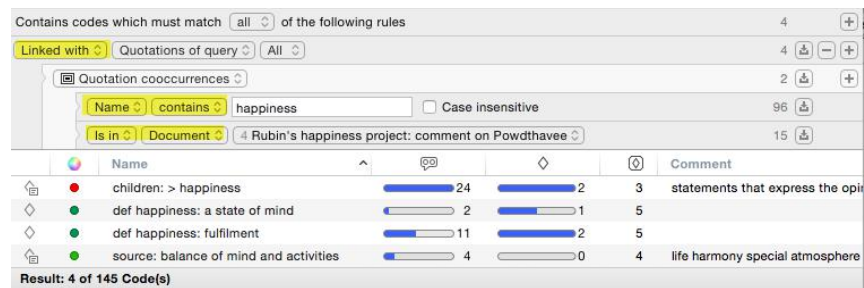


Figure 235: Endless options to query your data

Instead of *Is in Document*, you can also select *Is in Document Group* or *Is in Document of Query...* and follow up by entering a document query, and so on.

Memo Queries

For memos, the following query options are available:

Memo	
Name Comment Has Comment	Memo attribute
Creation date Created by Modification date Modified by	Time stamp / user
Linked with codes ✓ Linked with quotations Linked with memos Is in group	Linkages: to codes, quotations, memos and memo groups
<ul style="list-style-type: none"> ✓ OR: Any of the following are true ⚡ Exactly one of the following is true ^ AND: All of the following are true ¬ NOT: None of the following are true 	Boolean operators

Figure 236: Query options for memos

As for quotations and codes, the results of a memo query are always memos.

When selecting *Linked with Code*, further options are *Codes of group* and *Codes of query*. If you select *Codes of query*, all query options for codes become available.

Contains documents which must match of the following rules 7

^ AND: All of the following are true 7

Is in Group marital status::married 10

Is in Group Gender::female 13

#	Name	Type	Quotations	Comment
18	case 8	Text	2	imported survey data
21	case 11	Text	2	imported survey data
22	case 12	Text	2	imported survey data
24	case 14	Text	2	imported survey data
25	case 15	Text	2	imported survey data
27	case 17	Text	2	imported survey data
30	case 20	Text	2	imported survey data

Result: 7 of 38 Document(s)

Figure 237: Example document query

Similarly, if you select *Linked with Quotations*, you can also select *Quotations of Query*. In the latter case, all query options for quotations are at your disposal.

Working With Smart Codes

"Intelligent" Smart Codes compute their quotations "on demand."

Overview

Smart codes are a convenient way to store queries. They are very similar in look and feel to normal codes, with one important difference: Instead of "hardwired" connections to quotations, smart 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 smart code based on a query like (Code A | Code B) COOCCUR Code C and you add or delete quotations linked to either Code A, B or C, then the quotations linked to the smart code will be automatically adjusted.

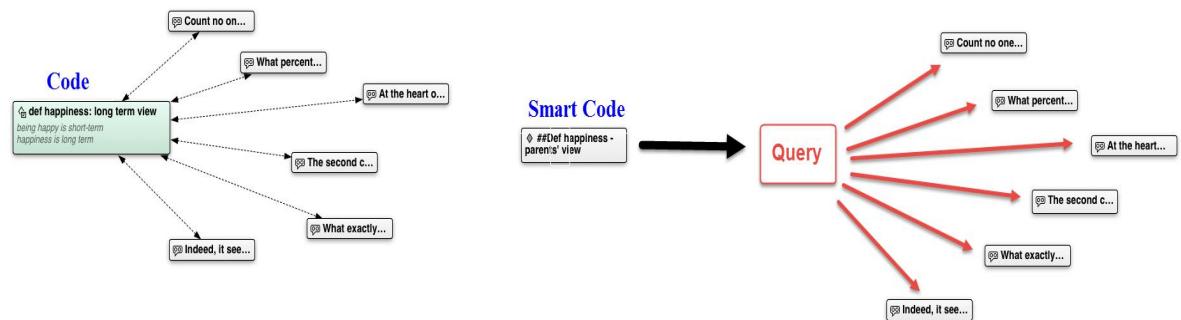


Figure 238: difference between a code and smart code: Codes are directly linked to quotations; smart codes are a stored query



Smart Codes can be selected in a code list (either in the Code Manager or the navigator) like any other code and they will display their quotations in an identical way. They can be recognized by the filled icon (see left). The list of quotations associated with a smart code can be displayed with a double-click, just as for any other code.

Smart Codes are *not* displayed in the margin area and as they are stored queries they can *not* be used for coding.

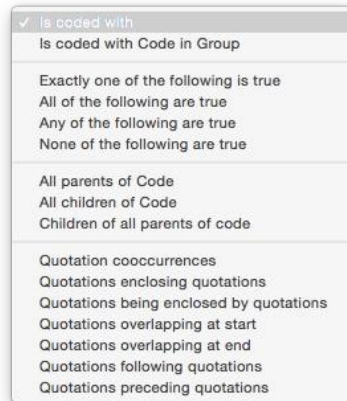


Figure 239: List of available options to build a smart code

Smart Codes can, however, be added to code groups, to networks, and, last but not least, as powerful operands in other queries, allowing you to incrementally build complex queries.

Video Tutorial: [ATLAS.ti Mac: Smart codes](#)

Creating Smart Codes

To create a new smart code, select **CODE / NEW SMART** from the main menu. Enter a name for your smart code and click **CREATE**.

This opens the smart code editor where you can define the conditions for your smart codes. Please review the section "Complex Quotation Retrieval (Query Tool)" for instructions on how to build queries. In the Smart Code Tool the same principles and rules apply. Below an example is shown where first a smart code is created in order to use it in other queries.

Example 1: Using Proximity Operators

Question: Do parents who report positive aspects of parenting also talk about negative aspects?

Codes needed:

- #fam: have children
- code group: effects parenting: negative
- code group: effects parenting: positive

OPTION 1

To find an answer to this question, we first create a smart code that contains all comments on positive effects of parenting written by those who have children. In a second step, creating a second smart code that uses the first one, we look for all comments by parents who write something positive and negative.

Open the smart code editor: **CODE / NEW SMART CODE**. Enter a name, e.g. "##parents who report pos effects of parenting" and click **CREATE**.

Leave the first line option to "all."



Figure 240: Smart code example 1: step 1

A line for the first rule is already open. Change the operator to "Quotation cooccurrence." Two new lines are added.

Select the code "#fam:have children" in the first line. In the second line, change the second field to "Codes of group" and select the code group "effects of parenting:positive."



Figure 241: Smart code example 1: creating the first smart code steps 2 to 4

As we want to find statements about negative aspects of parenting within the same response, we need to start the query with the code '#fam: have children'. This quotation covers the full comment that the person has written (see "Proximity Operators" on page 126).

Close the smart code editor.

Open the smart code editor again: **CODE / NEW SMART CODE**. Enter a name, this time: "## parents who report both pos and neg effects of parenting." Click **CREATE**.

Next we look for statements about negative effects of parenting that occur within the comments that also include a positive effect:

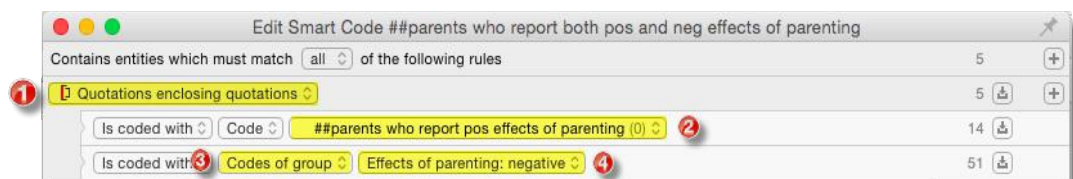


Figure 242: Smart code example 1: Creating the second smart code steps 1 to 4

Select the operator "Quotations enclosing quotations." Two lines are automatically added.

In the first line, select the smart code "##parents who report pos effects of parenting."

In the second line change the second field to "Codes of group" and select the code group "effects of parenting: negative."

This results in a total of 5 quotations.

You may have noticed that the smart code name begins with two hash signs (##). As the codes are sorted in alphabetic order, this pushes the codes on top of the code list. Otherwise they "disappear" in the list of all other codes. They are recognizable by the filled-in code icon. You may also add a color (here: bright green) to recognize them easier. Another option is to add them to a code group (here: *smart codes) for quick access. The effect of the asterisk * in the code group name is that the code group 'smart codes' is on top of the list.

Another option is to use the "Grouped by:" option to sort the code list by smart codes.



Figure 243: Quick access to smart codes

OPTION 2

Without the in-between step creating the smart code "##parents who report pos effects of parenting," the question can also be answered by building just one smart code. In order to do this, an "embed rule" needs to be used (see also "Building A Query with An Embedded Term")

Given example 1, one needs to start with the "enclosing operator," which needs to **embed** the following rule: #fam: have children COOCCUR with code group 'effects of parenting: positive'. The second term for the enclosing operator is the code group 'effects of parenting: negative.' Let's do this step-by-step:

Open the smart code editor: **CODE / NEW SMART CODE**. Enter a name, e.g. "##parents who both report pos effects of parenting EB" and click **CREATE**.

As operator select "Quotations enclosing quotations." Two new lines are added automatically.

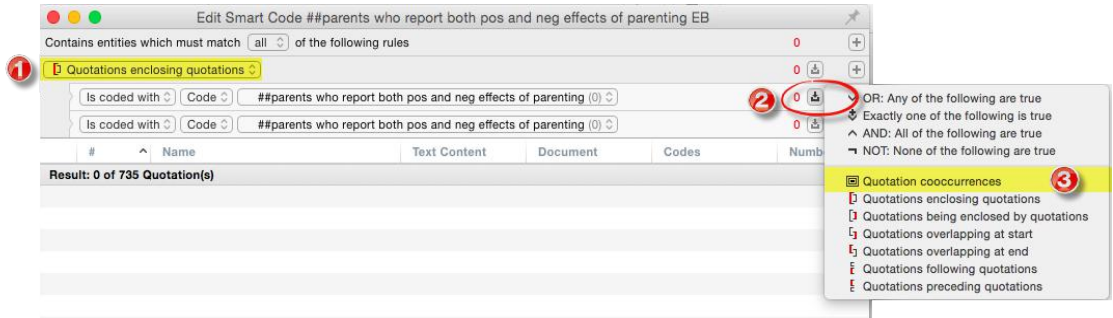


Figure 244: Smart code example 1: embedded query steps 1 to 3

Click on the embed button at the end of line one and select the operator "Quotation cooccurrences" In line three, the operator "Quotation Cooccurrences" is added and two new lines are added automatically.

Next, select the two terms that should cooccur: the code "#fam: have children in the first line, and the code group "effects of parenting: positive in the second line. Remember to change the second field to "Codes of group."

For the second enclosing term, set the second field to "Codes of group" and as code group select "effects of parenting: negative."



Figure 245: Smart code example 1: embedded query steps 4 to 8

If you think this is still too difficult, as you have to think through the entire query before you start clicking, use the two step option described above. With a bit of practice, formulating embedded queries probably becomes easier.

Example 2: Combining Boolean And Proximity Operators

Question: Identify those respondents who wrote a comment on the two blogs explaining the research findings with self-delusion or having wrong expectations (see also "Example 3").

OPTION 1

Let's do this step-by-step again before we show you how to put it all in one query using an embedded rule:

Codes needed:

		*blog entry	140	1
		ex: self-delusion	15	1
		ex: wrong expectations	9	1

Figure 246: Codes needed for Smart Code example 2

We first need to find all statements coded with "ex: self-delusion" and "ex: wrong expectations":

Open the smart code editor: **CODE / NEW SMART CODE**. Enter a name, e.g. "##explanation: self-delusion or wrong expectations" and click **CREATE**.

As operator select "OR: Any of the following is true." Two new lines are added automatically. Select the codes "ex: self-delusion" and "ex: wrong expectations" in line 1 and 2 respectively.

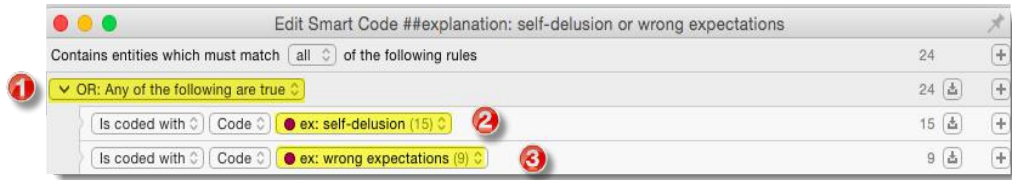


Figure 247: Smart code example 2: smart code 1, steps 1 to 3

- Close the Smart Code editor.
- Open the smart code editor again: **CODE / NEW SMART CODE**. Enter a name, e.g. "##blog comments: ex_self-delusion or wrong expectations" and click **CREATE**.
- As operator select "Quotations enclosing quotations." Two lines are added automatically.
- In line 1, select the code **"*blog entry,"** in line 2, select the smart code **"##explanation: self-delusion or wrong expectations":**



Figure 248: Smart code example 2: smart code 2, steps 1 to 3

- Close the Smart Code Editor.

OPTION 2

As in example 1, this query can also be solved by creating just one smart code. In order for this to work, an embed rule needs to be used again:

- Open the smart code editor: **CODE / NEW SMART CODE**. Enter a name, e.g. "##smart code example 2: using embed rule" and click **CREATE**.
- As operator select "Quotations enclosing quotations." Two lines are added automatically.
- In the first line, select the code **"*blog entry"**
- At the end of the second line, click on the **embed rule** button and select the operator "Or: Any of the following are true"

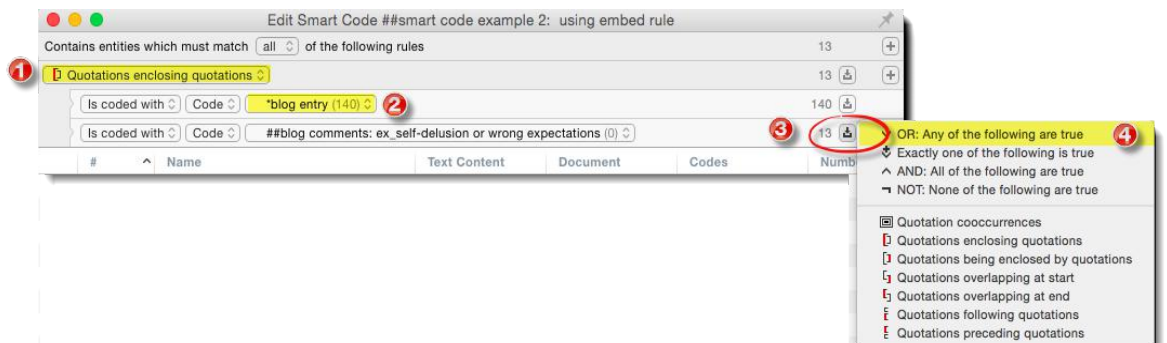


Figure 249: Smart code example two (embedded): steps 1 to 4

- The OR operator will be inserted on line 3 and two new lines are added. Select the codes "ex: self-delusion" and "ex: wrong expectations" as arguments for the OR query.

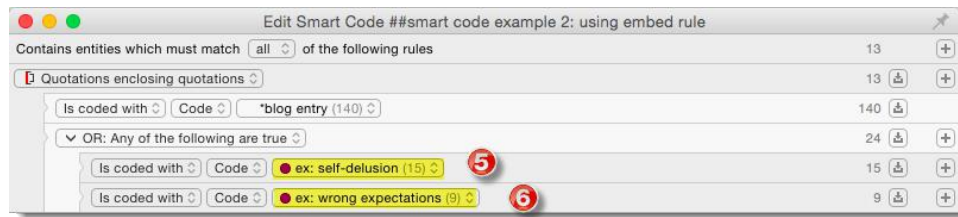


Figure 250: Smart code example two (embedded): steps 5 to 6

As above, the number of resulting quotations is 13.

Editing Queries

If you want to modify a query, open the Code Manager and right-click on a smart code. Select the option **EDIT QUERY**.



Figure 251: Editing smart codes



Figure 252: Quick access to smart codes

Code Co-Occurrence Tools

The Code Cooccurrence tools allows to ask a different type of questions. Using this tool, you can ask ATLAS.ti to show you all codes that cooccur across all of your primary documents. The result is a cross-tabulation of all codes.

As compared to the Query Tool where the user has to determine and select codes or code groups and the appropriate operator, 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.

Code Cooccurrences can be displayed in a tree view ("Code Co-Occurrence Explorer," or as a data matrix ("Code Co-Occurrence Table")The Explorer in addition to code cooccurrences also displays documents and their quotations and codes.

Code Co-Occurrence Explorer

To open the tool, from the main menu select **ANALYSIS/ CODE COOCCURRENCE EXPLORER**.

After opening the tool, you only see the root objects.

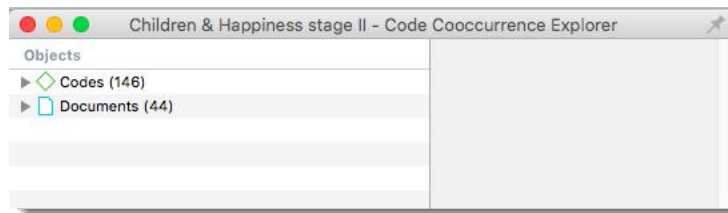


Figure 253: Code Co-Occurrence opening window

Open the branches by clicking on arrow in front the root for Codes or Documents.

You will see the list of codes on the first level, if you expand the tree further, you see all co-occurring codes, and on the third level the quotations.

When you open the Documents branch, you see all project documents on the first level, followed by codes that have been applied to the document on the second level and the quotations coded with those codes on the third level.

CODE CO-OCCURRENCE TREE

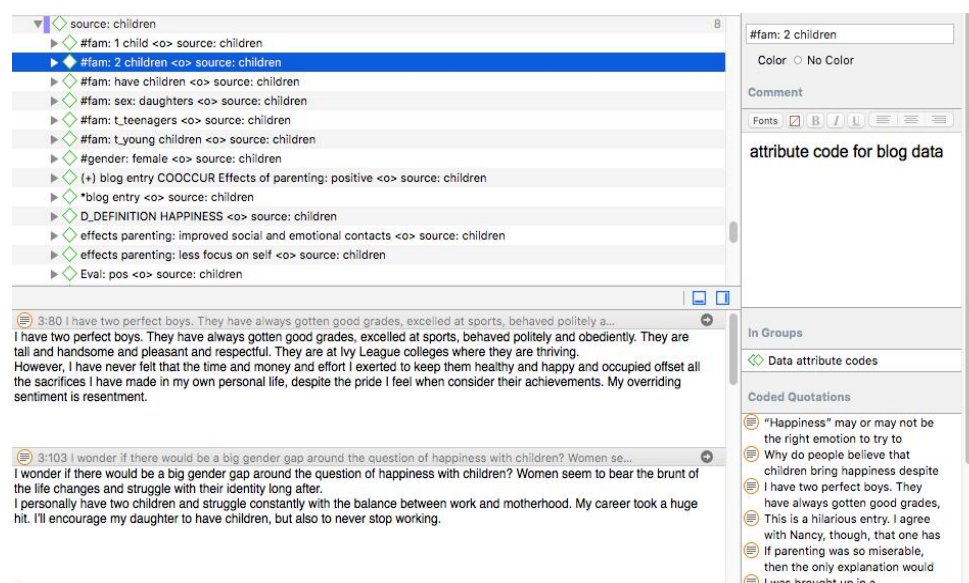


Figure 254: Code Co-Occurrence Tree expanded to the co-occurrence level

In the above example, you can see all codes that cooccur with the code '*source (of happiness): children*'. We can see that it was mentioned by p those with 1 or 2 children, by female respondents, by those who have daughters, teenagers and young children, and so on.

To see the data that were coded with a co-occurring codes, select it and read its quotation in the preview area.

With a double-click on a quotation in the quotation list in the inspector, it is displayed in the context of the document.

If you want a count of the number of hits (= co-occurring quotations), we recommend to use the "Code Co-Occurrence Table".

Use the Code Co-Occurrence Explorer to get a quick overview where there might be interesting overlaps in your data.

DOCUMENT TREE

The document tree shows all codes that have been applied to a document. If you expand the tree further, you see the quotation coded by these codes. The example shown in compares the coding of case 2 and case 3, which are responses to two survey questions.

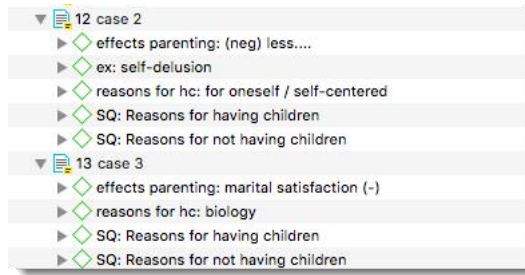


Figure 255: Exploring documents and their coding

Code Co-Occurrence Table

You find the Code Cooccurrence Table under the **ANALYSIS** menu. In Figure 256 below you see an example query comparing the answers provided by respondents with and without children (column codes) with regard to a number of different issues (row codes):

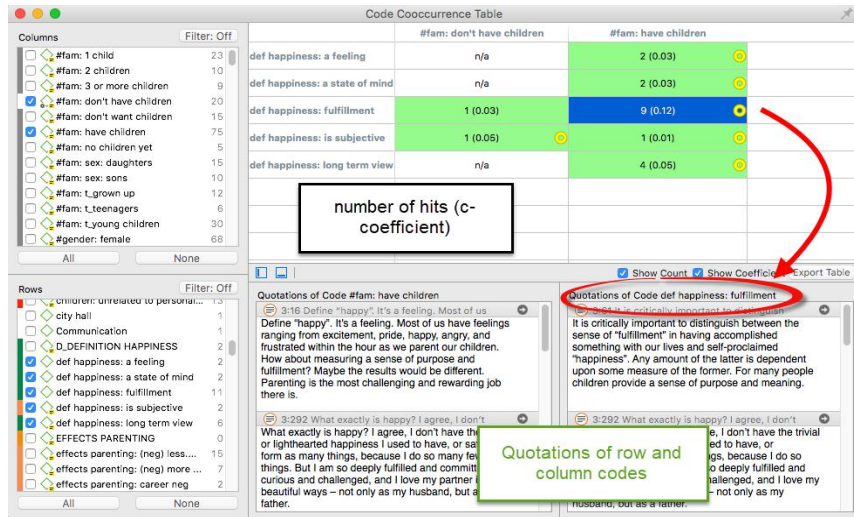


Figure 256: Code Co-occurrence Table

The operators that are used to calculate code cooccurrences are enclosing / being enclosed / overlapping at start / overlapping at end / All of the following are true. For further information on these operators see "Proximity Operators".

To create a table as shown in Figure 256 select column and row codes on the left-hand side by ticking the boxes in front of the codes. The table fills in automatically when selecting row codes. The first number is the number of hits – how often do the code and column codes co-occur; the second number is the c-coefficient (see below for further information).



Figure 257: Available filter options in the code co-occurrence table

Filtering The List Of Codes

It is also possible to filter the list of codes that you want to select from. To do so, click on the Filter button and then on + to create the filter you want. Below two examples are shown.

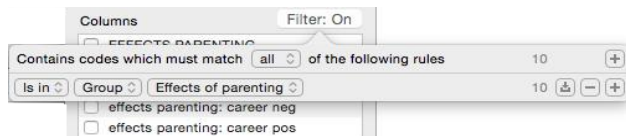


Figure 259: Selected filter: Show only codes that are in the code group "effects of parenting"

Figure 257 shows all available options to create a filter in the Code Co-occurrence Table. For a detailed explanation of Boolean and semantic operators (last two sections), see "Boolean Operators", and Proximity Operators".

What Is Displayed

By default the number of hits and the c-coefficient are displayed. You can however chose which number you want to see. The c-coefficient only makes sense and can be meaningfully interpreted with specific type of data and higher case numbers.

- The hits count and the c-coefficient can be activated or deactivated at the bottom right of the table.
- Click on a cell in the table to view the resulting quotations in the two panes at the bottom. Click on the right arrow to access a quotation in context .

NUMBER OF HITS AND NUMBER OF INVOLVED QUOTATIONS

The co-occurrence frequency does not count single quotations it counts co-occurring „events.“ If a single quotation is coded by two codes, this would count as a single co-occurrence. In case of overlap, thus when each of the two quotations is coded by one of the codes, this also counts as a single co-occurrence. Therefore two lists of quotations are displayed when you select a cell: the quotations of the column code and the quotations of the row code.

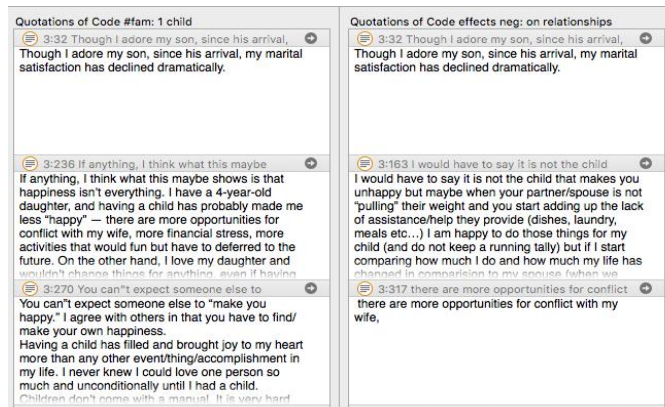


Figure 260: Quotations resulting from two co-occurring codes

The first co-occurrence is a 100% overlap, thus an AND occurrence as the two codes code the same quotation: 3:32.

The second and third cooccurrence is an overlap as the quotation Ids are different for both codes. In the context of the data, the overlaps for the third co-occurrence is as shown in Figure 260. Quotations 3:317 is embedded in the larger quotation and 3:236):

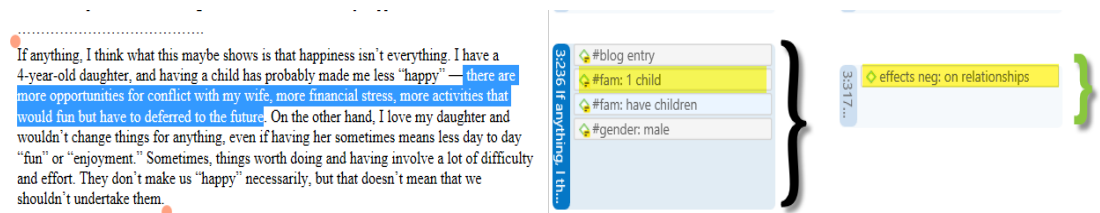


Figure 261: Code-Cooccurrence in the margin

The number of quotations can also be different in each list. This is the case if one code occurs two or more times within another one.

The C-Coefficient

The calculation of the c-coefficient is based on approaches borrowed from quantitative content analysis. Thus, interpreting such a coefficient is only meaningful with a sizable data set and not for an interview study with 10 respondents.

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:

$$c = n12 / (n1 + n2 - n12)$$

n12 = co-occurrence frequency of two codes c1 and c2, whereby n1 and n2 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.

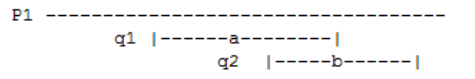


Figure 262: Out of range example 1

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.

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.

Using the formula: $c = n_{ab} / (n_a + n_b - n_{ab})$, we get:

$$\begin{aligned} n_{ab} &= 1 \text{ one co-occurrence of a and b} \\ n_a &= 1, n_b = 1 \text{ a and b each code exactly one quotation.} \\ c &= 1 / (1 + 1 - 1) = 1 \end{aligned}$$

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.

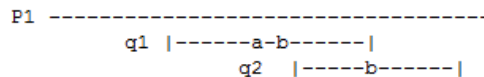


Figure 263: Out of range example 2

$n_{ab} = 2$. q1 alone counts for a co-occurrence event and the overlapping q1*q2 for another.

$$\begin{aligned} n_a &= 1, n_b = 2 \\ c &= 2 / (1 + 2 - 2) = 2!! \end{aligned}$$

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.

Color Indicators

Red circle: When the c-index exceeds 1 (see "Out Of Range").

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 cooccurrence. For instance, if you had coded 100 quotations with code "depression" and 10 with "mother" and you had 5 co-occurrences:

$$\begin{aligned} n_{dep} &= 100, n_{mother} = 10, n_{dep-mother} = 5 \\ c &= 5 / (100 + 10 - 5) = 5 / 105 = 0.048 \end{aligned}$$

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% cooccur with code "mother."

If the ratio between the codes frequencies exceeds a certain threshold (currently 5) 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.

Orange Circle: The orange circle is simply a mixture of the red and yellow conditions.

Export Table

The Code Co-Occurrence Table can be exported to Excel and OpenOffice. You find the export option at the bottom right of the table. The exported table contains what you see in the table. If you have only selected the hits count, or the c-coefficient, it will only contain those. If you have selected both, both numbers will be exported.

Code Document Table

Video Tutorial: [ATLAS.ti Mac: Code Document Table](#)

To open the tool, select **ANALYSIS / CODE DOCUMENT TABLE** from the main menu.

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 question in your mind. This will guide you to create the code and document groups you need to construct your query. Based on the Happiness Stage II project that can be downloaded from our website: [Download](#).

We can compare for instance the view of males and females regarding some of the reasons for not having children. For this purpose four code were selected and the two document groups gender::female and gender::male. The table shows the number of quotations for each code by the selected document groups. If you select a cell, the quotations are listed at the bottom of the window. If you click on the right-arrow, you can view the quotations in context.

	Gender::female	Gender::male	Quotations
reasons for nhc: being there for others	3	0	3
reasons for nhc: not worth the trade-off	1	1	2
reasons for nhc: self-centered	7	6	13
reasons for nhc: state of the world	1	1	2
Quotations	11	7	18

Figure 264: Code-Documnt Table

The table can be exported to Excel.

By default the table shows the frequency count for each code or code group (=number of coded quotations) per document or document group. You have the following options:

Include: Row totals
 Column totals

Show Frequencies: Absolute Row-relative
 Column-relative Table-relative

Count: Quotations
 Words
 Normalize

Orientation: Codes in rows
 Codes in columns

Cancel OK

Figure 265: Code-Documnt Table options

- You can select to display row and column totals.
- In addition to the absolute frequencies, you can select to display relative column, row or table frequencies.
- If the documents are of unequal length of the document groups of unequal size, you can normalize that date (see below).
- You can count quotations, or the number of words that are coded.
- You can switch the orientation of rows and columns similar to the Pivot option in Excel.

Normalization and Relative Frequencies in the Code-Document Table

Relative frequencies are useful for comparing code distributions across or within groups (cases) as percentages are easier to comprehend. If documents are of unequal length, or if document groups have an unequal number of members, it is recommended to normalize the counts as absolute counts may distort the results.

COLUMN RELATIVE FREQUENCIES

In the example below the two document groups gender::female and gender::male are compared. As indicated by the red numbers (not displayed by ATLAS.ti), there are more females than males. Thus, for a comparison across groups we need to normalize the data. For comparing the distribution of codes within a group, this is not necessary. We can use the column relative frequencies for this.

Which relative frequency count you select depends on how you display the table. If the two document groups were listed as rows and the codes as columns, you would need to use row relative frequencies for a within group comparison.

	Gender::female (13)	Gender::male (11)	Quotations
reasons for nhc: being there for others	3 25,00 %		3 13,64 %
reasons for nhc: not worth the trade-off	1 8,33 %	1 10,00 %	2 9,09 %
reasons for nhc: responsibility		2 20,00 %	2 9,09 %
reasons for nhc: self-centered	7 58,33 %	6 60,00 %	13 59,09 %
reasons for nhc: state of the world	1 8,33 %	1 10,00 %	2 9,09 %
Quotations	12 100,00 %	10 100,00 %	22 100,00 %

Figure 266: Code-Document Table displaying absolute counts and column relative frequencies

You must read this table from top to bottom along the columns. It shows the distribution of the selected codes within the two document group. The results of the table could be summarized as follows: As reasons for not having children, women have mostly mentioned "self-centered" (58%) and "being there for others" (25%). For men, "self-centered" was also the main reason (60%), followed by "responsibility" (20%) and "not worth the trade-off" and "state of the world" (both 10%). Apart from the fact that these data are completely fictitious, this summary shows that percentages can inflate the results quite a bit. There is only one quote for "not worth the trade-off" and "state of the world". In terms of percentage, it looks like a lot more. Use this option with care. It is very useful for larger data sets and if you have a higher number of quotations.

ROW RELATIVE FREQUENCIES

To compare the distribution across the two groups, we get more accurate results if we normalize the data first:

	Gender::female	Gender::male	Quotations
reasons for nhc: being there for others	3,00		3,00
reasons for nhc: not worth the trade-off	1,00	1,20	2,20
reasons for nhc: responsibility		2,40	2,40
reasons for nhc: self-centered	7,00	7,20	14,20
reasons for nhc: state of the world	1,00	1,20	2,20
Quotations	12,00	12,00	24,00

→

	Gender::female	Gender::male	Quotations
reasons for nhc: being there for others	3,00 100,00 %	1,20 54,55 %	3,00 100,00 %
reasons for nhc: not worth the trade-off	1,00 45,45 %	1,20 100,00 %	2,20 100,00 %
reasons for nhc: responsibility		2,40 100,00 %	2,40 100,00 %
reasons for nhc: self-centered	7,00 49,30 %	7,20 50,70 %	14,20 100,00 %
reasons for nhc: state of the world	1,00 45,45 %	1,20 54,55 %	2,20 100,00 %
Quotations	12,00 50,00 %	12,00 50,00 %	24,00 100,00 %

→

Figure 267: Table after normalization. Bottom table displays row relative frequencies

The first table in Figure 266 shows the absolute frequencies of the codings after normalization. The codings for the document group gender::male have been multiplied by $12/10 = 1,2$ so that the totals for each group are the same.

This table must be read from left to right. It allows you to compare the application of codes across documents or document groups. If we for example compare males and females with regard to how often they mentioned "self-centered" as reasons for not having children, than males mentioned it slightly more (50,7% as compared to 49,3% for females). The absolute count would let us conclude that they mention it slightly less (6 times as compared to 7 times for women).

Let's consider one more example. Document 3 is about twice as long as document 5 in the Children & Happiness sample project. Thus, the number of codings regarding a specific topic can be expected to be higher as well in document 3. If we compare how often positive and negative effects of parenting were mentioned in both documents, normalizing the data will give a more accurate picture.

Based on absolute frequencies

	Belkin's parenting blog...	NYT magazin blog:...	Totals
effects of parenting negative	18 69,23 %	8 30,77 %	26 100,00 %
effects of parenting positive	17 73,91 %	6 26,09 %	23 100,00 %
Totals	35 71,43 %	14 28,57 %	49 100,00 %

After normalization

	Belkin's parenting blog...	NYT magazin blog:...	Totals
effects of parenting negative	18,00 47,37 %	20,00 52,63 %	38,00 100,00 %
effects of parenting positive	17,00 53,12 %	15,00 46,88 %	32,00 100,00 %
Totals	35,00 50,00 %	35,00 50,00 %	70,00 100,00 %



Figure 268: Effects of normalization

Looking at the data without normalization it looks like that the readers of the NYTM article mention much fewer positive and negative effects of parenting. After normalization, this interpretation needs to be adjusted. The reader of the NYTM article mentioned more negative effects of parenting as compared to the readers of parenting blog (55% as compared to 45%) and only slightly less positive effects (47% as compared to 53%).

TOTAL RELATIVE FREQUENCIES

If you select total relative frequencies, the calculation is based on the total number of codings all all selected codes in the table. In the example below, these are 174. When comparing how much readers of the parenting blog and the NYTM article have written about reason for having and not having children, then the distribution is as follows: readers of the parenting blog have given 68 / 174 = 39% of the reasons for having children and 11% of the reasons for not having children: readers of the NYTM article have contributed 25% of the reasons for having children and 25% of the reasons for not having children (the data have been normalized). Thus, comparatively, the readers of the NYTM articles have given quite a bit more reasons for not having children, which fits the results reported above that they also wrote more about negative effects of parenting.

	Belkin's parenting blog...	NYT magazin blog:...	Totals
reasons for having children	68,00 39,08 %	43,50 25,00 %	111,50 64,08 %
reasons for not having children	19,00 10,92 %	43,50 25,00 %	62,50 35,92 %
Totals	87,00 50,00 %	87,00 50,00 %	174,00 100,00 %

Figure 269: Display of table relative frequencies (data are normalized)

You can display all values: absolute frequencies and all relative frequencies in one table by selecting all options. It depends on the purpose for which you want to use the table. For interpreting the data, it is probably easier if you look at each of the relative frequency counts separately. But for a comprehensive report for an appendix, you may want to export the table with all options included.

Working With Global Filters

Overview

Global filters are a powerful tool to analyze your data. As compared to local filters that you can invoke in each manager, global filter have an effect on the entire project. If you set a document group as global filter, also the results of the code-document table or the code-cooccurrence table will also be effected. For example, if you cross-tabulate a code category ACTION with another code category OUTCOME, you can see which actions are related to which outcomes for all of your respondents. If you set the document group: 'gender: female' as global filter, the results of the table will change only showing which actions are related to which outcome for all female respondents.

In a code document table, it allows you to combine two variables without having to create a smart group. Given the above example, a code-document table including all ACTION codes by document groups "have children", "do not have children", the results will show the quotation frequency of all action codes for 'female respondents with children' vs. 'female respondents without children'.

In network, all entities that do not pass the filter criteria will be faded out. Or, if you select the 'import neighbor' or 'import co-occurring' options, you can control the process by only importing entities that pass a given filter criteria.

An additional benefit is that you can focus your analysis on certain aspects of your project. All selection lists become shorter and if you know that you only want to work with 5 out of your 15 categories for the moment, you create a code group that only contains the codes that you want to work with at the moment and set this code group as global filter. Similarly you can create document groups if you want to focus on only a sub set of your documents for a given analytic task.

Currently only groups can be set a global filter. Other entities will be added in the future.

Creating A Global Filter

Currently only groups can be set as global filter. Document groups as global filter filter out documents and their quotations. Code groups as global filter filter out codes, and memo groups as global filter filter out memos. If you set a single document or code as global filter, you need to create a group for it. This is a current work around until it is possible to also set single entities as global filter.

Setting Global Filters

Global filters can be set in each manager and the project explorer. Right click on a group and select the option **SET GLOBAL FILTER**. In the Project Explorer and Code Manager, you can also set a global filter for a single code, not only a code group.

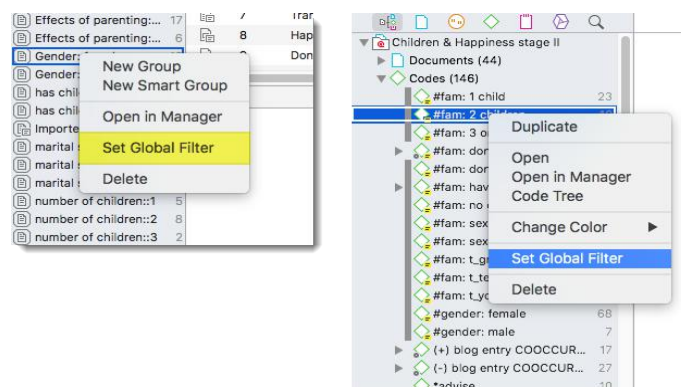


Figure 270: Setting a global document filter

Display of Global Filters

Similar to the visualization of local filters, global filters are also indicated by a colored bar. The choice of color at the moment may look arbitrary from a Mac user perspective – but soon the Mac interface will also be brightened up and will include colored icon as in the Windows version.

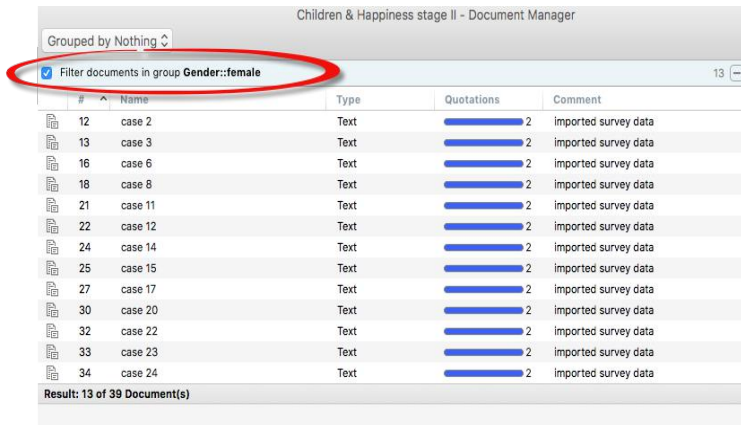


Figure 271: Indication that a global document filter as been set

- Global document filters are blue.
- Global quotations filters are orange.
- Global code filters are green.
- Global memo filters are magenta.
- Global network filters are purple

As mentioned above, document group filters have an effect on quotations. If you open the Quotation Manager and a document group is set as global filter, you will see an orange global filter bar on top of the quotation list.

In Figure 272 the global filter is combined with a local code filter (beige colored bar). This results in the following query: Show me all quotations of the code “reasons for nhc: self-centered” for all female respondents.



Figure 272: A global quotation filter combined with a local code filter

Figure 273 shows an example where a global code filter has been set for a group of codes that is relevant for a specific analytic task.

Filter codes in group for Quick Tour: Cooccurrence Example						
	Name					
○	#fam: don't have children	20	10	9		
●	#fam: have children	75	46	9		
○	*blog entry	140	1	2		
●	reasons for hc: altruism	16	2	2		
●	reasons for hc: always knew it	5	1	2		
●	reasons for hc: biology	22	1	2		
●	reasons for hc: cultural embedded beli...	24	1	2		
●	reasons for hc: feel good about trade-off	16	2	2		
●	reasons for hc: focusing illusion	7	1	2		
●	reasons for hc: for oneself / self-center...	18	3	2		
●	reasons for hc: personality	2	0	2		
●	reasons for hc: richer life	6	1	2		
●	reasons for hc: shaping a human life	10	2	2		
●	reasons for hc: unconditional love	10	2	2		
●	reasons for nhc: adoption	4	1	2		
●	reasons for nhc: being there for others	7	1	2		

Figure 273: Example of a global code filter

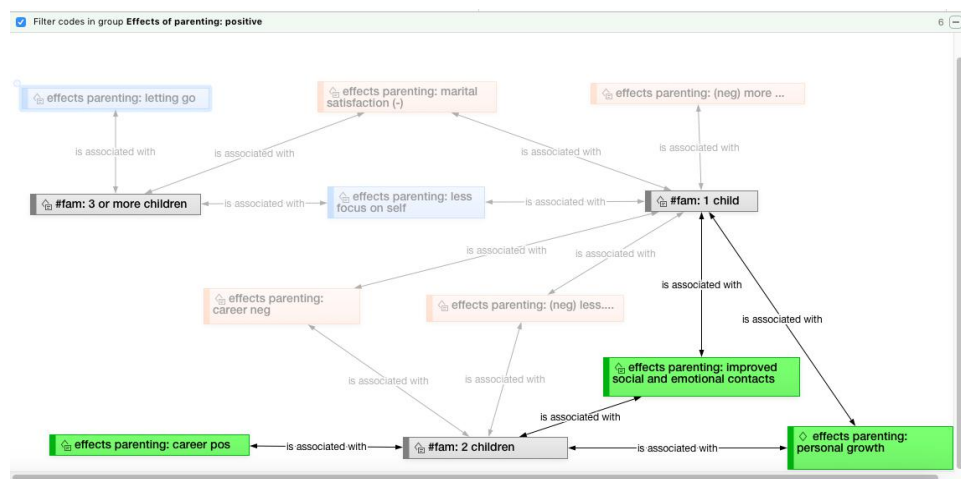


Figure 274: Network created with the support of global filters + filtered emphasize one area of interest

Figure 274 shows a network that has been created with the help of a global code filter. The question behind the network was: Which positive and negative effects of parenting have been mentioned by those with 1, 2 or 3 children. If you are not familiar with the sample data set – this information needed to be coded in two of the documents as they contained multiple cases, a total of 140 comments by different people. In order to filter out all other aspects, a code group was created and set as global filters that only contained the three attribute codes + the effects of parenting codes. The next step was to open a network for each attribute code and to import all co-occurring codes. As the global filter was set, only the effects of parenting codes were imported. These were linked with the attribute codes. Based on this a network with all three attribute codes were created. Next a global filter was set to emphasize all positive effects of parenting. All other effects are faded out in the background.

Global Filters In Combination With The Code-Cooccurrence Table

Figure 275 Shows two code co-occurrence tables. The first one shows the various opinions about the relationship between children and happiness of those respondents with and without children that commented on the parenting blog. The second table shows the same for those commenting on the New York Times Magazine article. If you deactivate the filter, you see the results for the entire data set. This applies to the table as a whole and to the quotation list that you get per code at the bottom of the window.

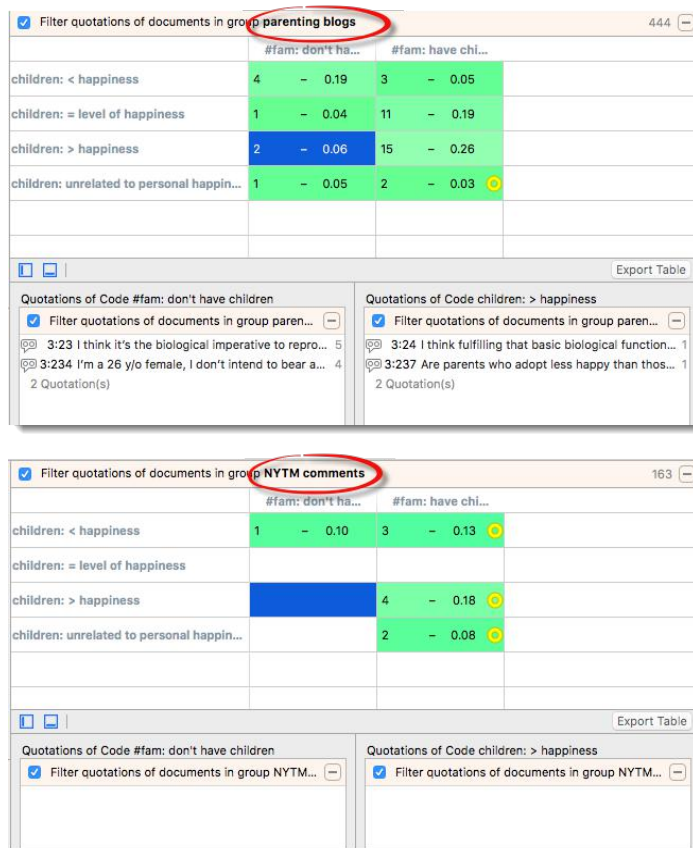


Figure 275: Global filters and code co-occurrence

Global Filters In Combination With The Code-Document Table

Figure 276 shows two code-document tables. Here the reasons mentioned for having and for not having children across different educational levels and gender are compared. In addition a code group filter has been set that contains codes that are only relevant for the research question considered at the moment. The comparison by gender in addition to educational level was facilitated by setting a document group as global filter.

Female Filter:

	education::highschool	education::some college	education::University...
reasons for hc: altruism		38	
reasons for hc: biology		38	31
reasons for hc: cultural embedded believes			
reasons for hc: for oneself / self-centered	36	45	
reasons for nhc: being there for others	43	21	18
reasons for nhc: self-centered	70	57	22
reasons for nhc: state of the world	39		

Male Filter:

	education::highschool	education::some college	education::University...
reasons for hc: altruism		23	24
reasons for hc: biology			18
reasons for hc: cultural embedded believes			12
reasons for hc: for oneself / self-centered			14
reasons for nhc: being there for others			
reasons for nhc: self-centered	22	101	93
reasons for nhc: state of the world			18

Figure 276: Global filter applied in the code-document table

Activating / Deactivating Global Filters

Given the above example, if you want to see all quotations coded with “reasons for nhc: self-centered”, you click on the check-box for the global filter.

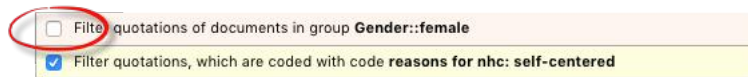


Figure 277: Deactivated global filter

Removing A Global Filter

If you change a global filter, the currently active filter is automatically reset.

If you want to remove a filter completely, click on the - button on the right.



Working With Networks

Overview

ATLAS.ti allows you to establish *named links* to more clearly express the nature of the relationships between concepts.

A default set of relations is provided. You may define your own.

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").

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 preset 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	Symbol	Short Name	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: relation name, symbol and a short name.

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" based on parent and child nodes (see "Semantic Operators" on page 126).

The following properties are user-definable: Full name, short name, symbol, the property of the relation (symmetric, asymmetric, transitive), the width and line style (solid or dashed), and the preferred layout direction. The preferred layout direction affects the layout of a network when ATLAS.ti automatically arranges the nodes.

Video Tutorial: [ATLAS.ti Mac: Working with networks](#)

Relations are like "styles" in a word processor. Changing the style will change all occurrences of its usage, in this case: the links

Link vs. Relation

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 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.

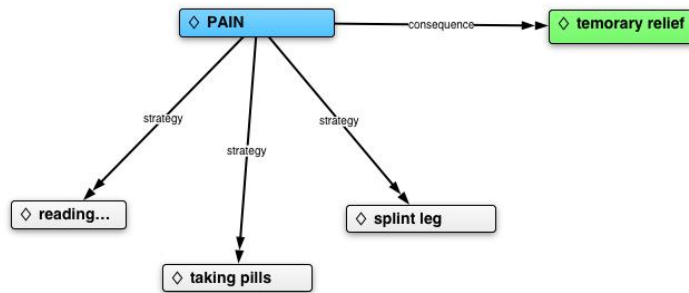


Figure 278: Four links using two relations, "strategy" and "consequence"

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.

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.

Define your own "epistemological primitives."

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

The Network Editor lets you visually connect codes and other entities to create semantic networks or hypertext webs.

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 entities 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 networks.

Network Characteristics

Networks have certain important characteristics:

- Several different networks on the same network are possible.
- Networks can be given names under which they are stored and accessed inside the HU.
- Networks can be commented.
- Networks are displayed and edited in the Network Editor.
- Networks allow individual layout of the nodes.
- As a node, a single entity can be a member of any number of networks, just like a code can be an element of more than one code group.
- An entity, e. g., a specific code, can only appear once in any network.

networks allow for a flexible but logically consistent display of the network of entities, 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 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 will display any other relation between those two nodes.

If however, you want to link code A and B differently in a different network, 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.

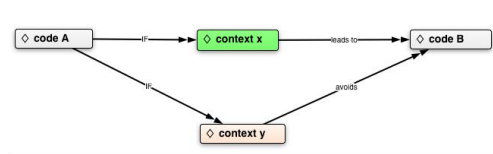


Figure 279: Using modifier codes for case-based networks

Node Types

The following entity 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 entities 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.

Documents As Nodes

Documents as nodes are useful sometimes, but in the presence of quotations may clutter the view by myriad links. However, Document Previews as nodes make a nice graphical content table for graphical primary documents (see "The following view options for networks are available:" for further detail).

Quotations As Nodes

Quotations and codes have one thing in common that is not true for the other entities. 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 supports the construction and inspection of hyperlink structures.

If you add image or video quotations, their content can be displayed if you set the view option to "Show Quotation Previews." See also page 168.

Networks As Nodes

Networks as nodes allow the inclusion of networks in other networks. To open the network in a new tab, right-click and select **OPEN NETWORK**.

Groups As Nodes

Groups are a useful device to group codes, memos, or documents. Instead of displaying all of the codes belonging to the concept, the Code group may be displayed. Or you display the group with all of its members.

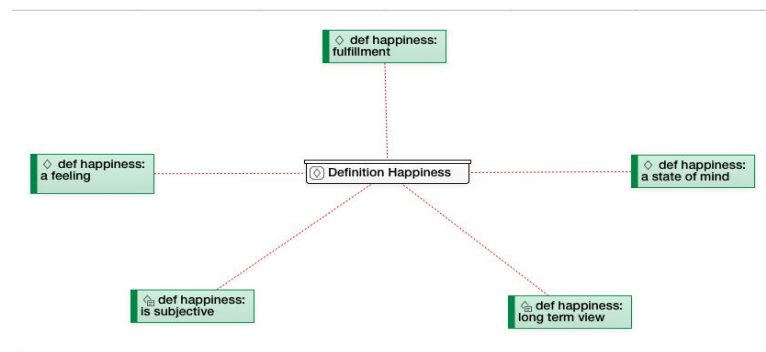


Figure 280: Display of a code group with its members in a network

Creating A New Network

To create a new network, select **NETWORK/NEW NETWORK**. This opens a tab with now content. The name network 1 / network 2 / network 3, etc is generated automatically. If you decide that you want to keep a particular network, you can rename it later in the network Manager (**NETWORK/SHOW NETWORK MANAGER**).

In the network manager you can enter a comment for each network. Use it for a description.

Adding Nodes To A Network

You can add nodes via the **ADD NODES** option or via drag and drop.

ADDING NODES USING THE SELECTION LIST

Click on the **ADD NODES** button in the tools bar above the network.



Figure 282: Add nodes from a selection list

This opens a selection list that is dogged to the left-hand side of the network (see Figure 281). At the bottom of the selection list you see the comments of an entity. The search fields helps you to find faster what you are looking for.

Select the entity type and then the entities that you want to add to the network. Depending on the type you have selected you see the preview of the selected document, the quotations linked to a selected code, or the content of the selected memo. As usually, you see the comments in the inspector on the right-hand side of the screen.

Click **Add** to add the selected nodes to the network..

If you do not need to add anything further to your network, you can close the selection list.

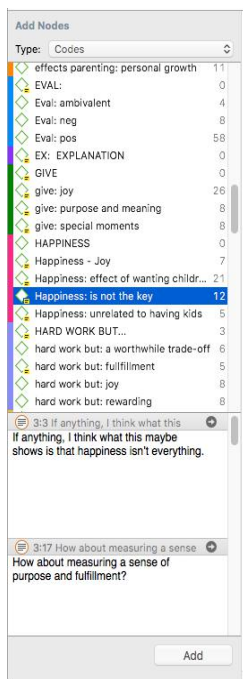


Figure 281: Add nodes from a selection list

ADDING NODES VIA DRAG & DROP

You can add nodes by dragging entities from Entity Managers, group manager, the margin, or the project explorer, or any of the browsers into the network editor.

- Open a network and position it next to the Project Explorer.
- Select the node(s) you want to import into the network and drag-and-drop them into the editor. If you want to make multiple selections, you need to open an entity browser or a manager and drag-and-drop from there.
- Drag the selected entities into the network editor, and drop them there.
- The node types (document, quotation, code, memo, network) can be recognized by their entity specific icon. If you right-click on a node, you see further options that are available.

Options for documents:

- Open Document
- Open in Manager
- Show Preview
- Show Comment
- Edit Comment
- Import Neighbors
- Remove from Network
-

Options for Quotations:

- Go to Quotation
- Open in Manager
- Show Preview
- Show Comment
- Edit comment
- Import Neighbors
- Remove from Network
-

Options for Codes:

- Rename
- Change Color
- Open
- Open in Manager
- Code Tree
- Show Comment
- Edit Comment
- Import Neighbors
- Import Co-occurring
- Remove from Network

Options for Memos:

- Open Network
- Open in Manager
- Show Preview
- Show Comment
- Edit Comment
- Import Neighbors
- Remove from Network

Options for Groups:

- Rename
- Show Group in Manager
- Show Comment
- Edit Comment
- Import Members
- Remove from Network

Options for Networks:

- Open Network
- Open in Manager
- Show Comment
- Edit Comment
- Remove from Network

Linking Nodes In Networks

The links between nodes in a network are real connections between the entities. Therefore, creating and removing links should not be regarded as solely "cosmetic" operations. Links make permanent changes to your entire project.



Figure 283: Linking two code nodes using a named (strong) links

Strong Links (First Class)

You can link almost all ATLAS.ti entities to each other. Qualified named relations can however only be created between two codes and between two quotations, the so called hyperlinks (see also "Working with Hyperlinks").

CREATING STRONG LINKS

To link, for instance, two codes to each other, select a code node. A circle appears at the top left corner of the node. If you begin to drag starting from the circle, a line appears. Drop the line on top of another code node. A list of relation opens. Select the one that best fits the relation between the two codes.

Another way to link either two quotations to each other or two codes is via drag and drop in the respective managers.

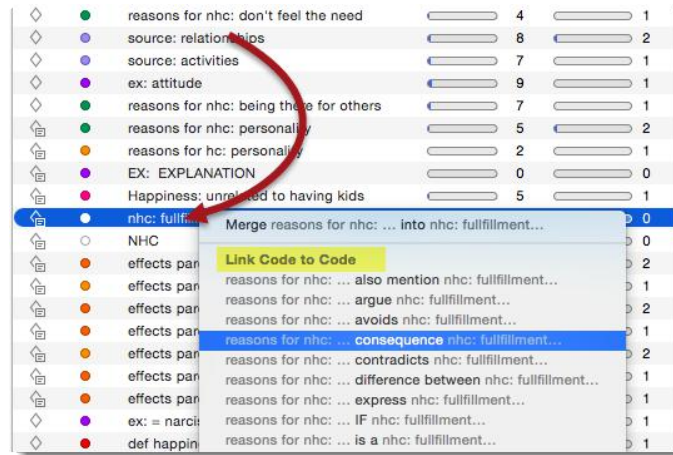


Figure 284: Code to code link

LINKING TWO NODES USING MOUSE AND KEYBOARD

A quick way to link two nodes.

- Place the mouse pointer over the source node.
- Hold down the ALT key on your keyboard.
- Hold down the left mouse button and drag the mouse pointer to the target node.
- Release the left mouse button and the ALT key.
- In case you create a strong link (code-code or quote-quote link), select a relation.

To create new relations, open the Relation Manager (see "Defining New Hyperlink Relations" and "Defining New Code-Code Relations.")

Weak Links (Second Class)

Other entities can be linked, but you cannot specify the relation between them. Therefore they are called "weak links" or second class links in ATLAS.ti. These are:

- Code - memo links
- Code - quotation links (this is the same as coding)
- Memo - memo links
- Memo - quotation links
- Groups and their members (see Figure 280 above).
- Documents and their quotations

Document-quotation links cannot directly be created by the user; they can only be displayed. It is possible to display the quotations that are contained within a document via the importing neighbor option (see below), but you cannot link a quotation to a document in a network. It would not make much sense. e. g. to link a quotation from document 5 to document 3, as it does not belong to it.

CREATING WEAK LINKS

To link for instance a codes to a memo, select a code node. A circle appears at the top left corner of the node. As you begin to drag, an arrow appears. Drop the arrow on top of the memo node and drop the line.

Defining New Code-Code Relations

The procedure for defining or editing code-code relations is equivalent to the methods described above for defining hyperlink relations (see "Defining New Hyperlink Relations").

Open the Relation Manager from the Code's main menu: **CODE / SHOW RELATION MANAGER**. Other options are to right-click on a relation in a network or in the Links section of the Code Inspector in the Code Manager and chose the option **OPEN RELATION IN MANAGER** from the secondary menu.

In the Relation Manager, click on the **+** button to add a new relation. Define the properties for the new relation and write a comment (optional). The various fields are explained in more detail below.

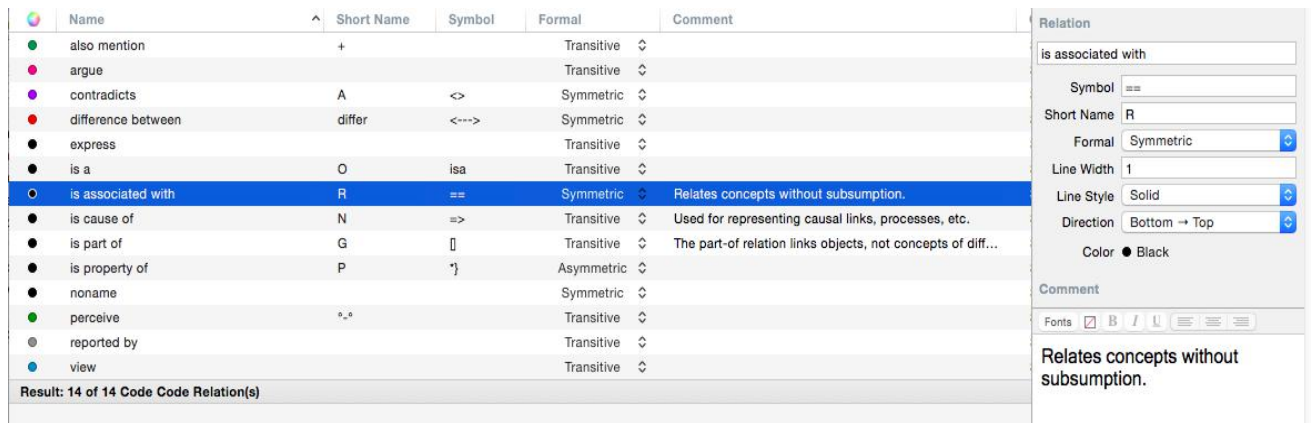


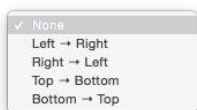
Figure 285: Available default code-code relations

Relation Properties

The following can be defined: Cosmetic and descriptive as well as structural aspects of relations.

COSMETICS

Cosmetic aspects include the name and the line. The relation name is shown when creating relations and in a network Editor. Once implemented, the symbol and short name can be used as an alternative display option in networks. Instead of a short name, you can for instance also use a different language as shown on the left. Also, you can define the width and line style and add a color.



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 (children / parent), transitive relations need to be used.

PREFERRED LAYOUT DIRECTION

A more sophisticated "cosmetic" property is the preferred layout direction. By using this relation characteristic, the user can assert some control over the automatic layout algorithm. Indeed, this option justifies the name "semantic layout."

COMMENT

As with all entities in ATLAS.ti, a comment can be attached.

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 quotations. When writing a comment for this link, the meaning is local and explains why two quotations were connected using this relation.

The Code-Code Link Manager

The Code-Code Link Manager gives you an overview of all code links you have created. You can review and export your links, change relations, flip the direction, unlink two codes and access the list of quotations of either the source or target code with a double-click.



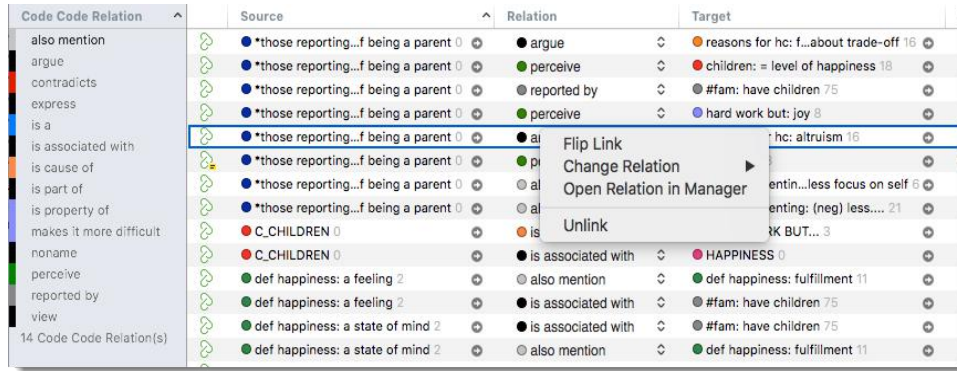


Figure 286: Review and edit links in the Code-Code Link Manager

The Network Manager

The Network Manager gives an overview of all networks that you have created. You can group networks, e.g. by themes or where do you intent to use them in your report. You can write comments to describe them, create reports, filter them, open them from the Network Manager, or delete them. The handling is the same as for all other managers.

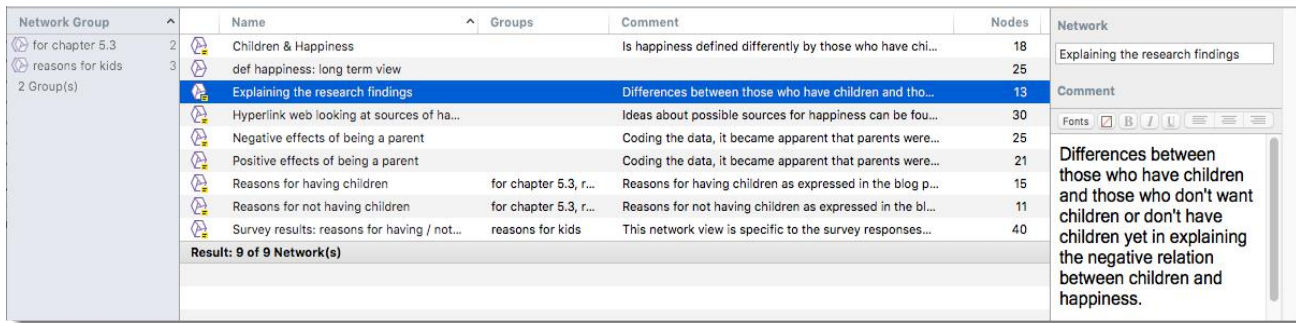


Figure 287: Network Manager

Network Actions

Selecting Links

To select a link or a relation, simply click on the link. It turns blue. To open the context menu to either delete or flip the link, right-click.

Modifying Links

The type of a link (e. g., its relation) can currently only be changed in the Link Manager. Further options will follow.

- Open the appropriate Link Manager via **QUOTATION / SHOW LINK MANAGER** or **CODE / SHOW LINK MANAGER**
- In the Relation column, click on a relation and select a different relation (compare Figure 177).

Selecting Multiple Or All Nodes

To select all or a selected group of nodes, you can either draw a frame around all nodes with your mouse or hold down the **CMD** key and click on each node that you want to select.

Moving Nodes

By moving nodes to different positions, you can modify an initial layout created by the automatic layout procedure. To move a single node, just drag it with the mouse to the desired position.



To MOVE MULTIPLE NODES

Create a multiple selection of nodes as described above. Then grab one of the selected nodes with the mouse and move the entire group of selected nodes to a different position.

Removing Nodes From Networks

Removing nodes from the view simply takes the nodes out of a network. The nodes remain in your project. Removed nodes can be "re-imported" at any time.

Select the nodes to be excluded from the view. Right-click and select the option **REMOVE FROM NETWORK**.

Opening Existing Networks

You can access networks via the network Manager and via the navigator on the left hand side of your screen.

Select **NETWORK / SHOW NETWORK MANAGER**.

Open the navigation pane and select the network tab (see left).

View Options

The following view options for networks are available:

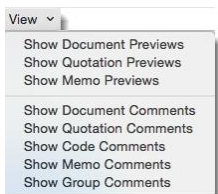


Figure 288: View options for networks

Document And Quotation Previews

When selecting **SHOW DOCUMENT OR QUOTATION PREVIEWS**, "thumbnail" images of the documents are displayed. This also applies to image and video files and quotations. The content of video and also audio files can be started from within the network and previewed.

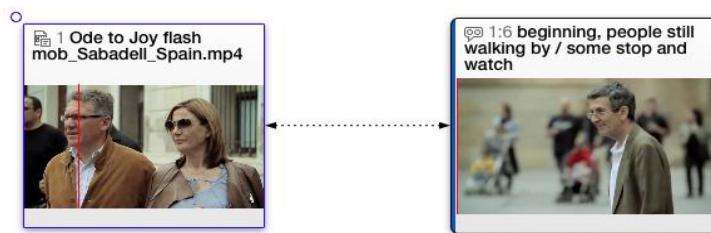


Figure 289: Preview of video documents and video quotations

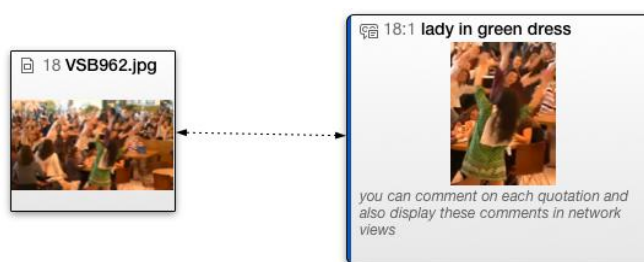


Figure 290: Preview of graphic documents and graphic quotations

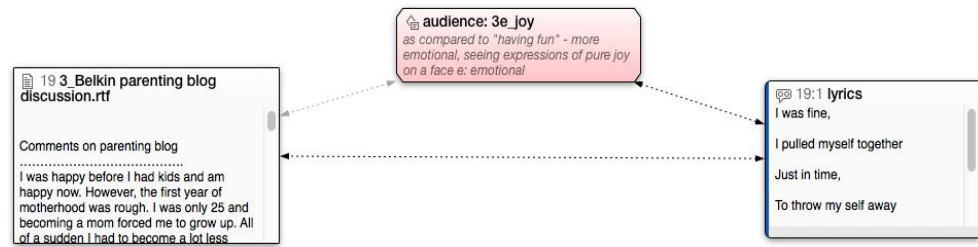


Figure 291: Preview of a text document and quotation

Video Tutorial: [ATLAS.ti Mac: Previews in Networks](#)

Layout and Alignment Options

A number of layout options are at your disposal (see left).

Further you have the option to remove multiple nodes from a network. To do so, select a number of nodes either by drawing a frame around them with your mouse, or by holding down the SHIFT key. Next click on the button "Remove Selected Nodes."

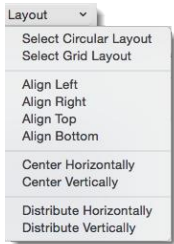


Figure 292: network layout options

Show Code-Document Connections

Code-Document connections are virtual links as they do not really exist. They can be displayed or hidden.

Just activate or deactivate the option in the tool bar, depending on what you want to see in a network.

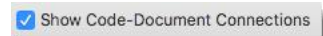


Figure 293: Activate to show Code-Document Connections

Code-Document connections are displayed as dotted gray lines. You can use this option to compare the coding of documents. An example is shown Figure 294. Four of the six topics are discussed in both documents 3 and 5; the effects of parenting on careers is only discussed in document 3. The equivalent quantitative tool is the Code Document Table (see page 153).

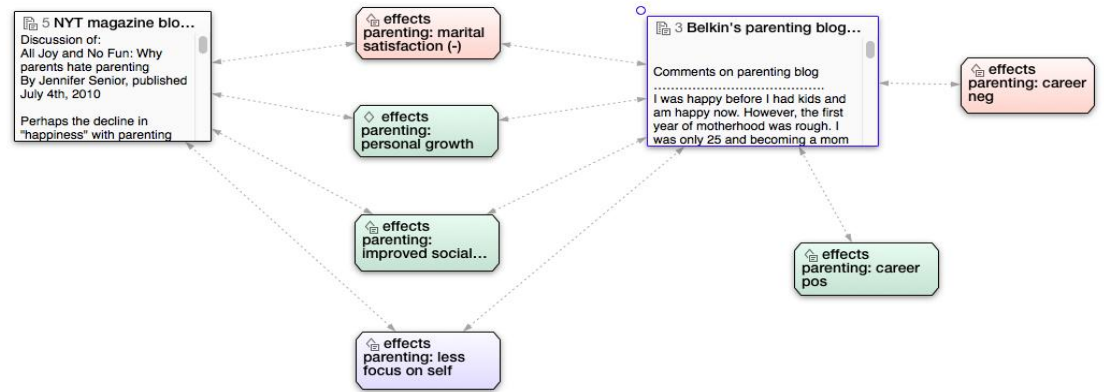


Figure 294: Compare coding by document (cases) displaying virtual code-document links

Printing Networks

Open the network you want to print or save as external file first.

- Select **PROJECT / PRINT**. If you click on Show Detail, you have the following options:

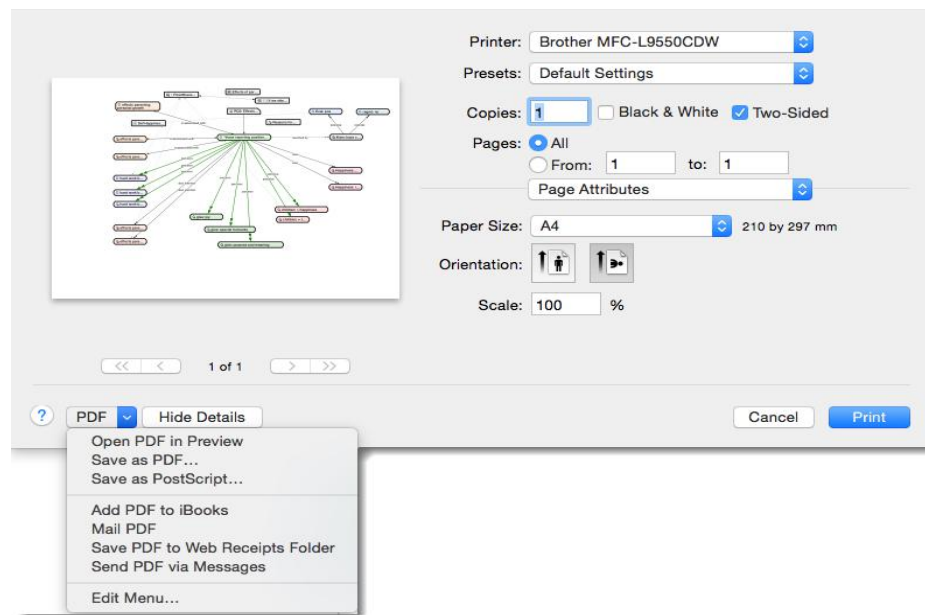


Figure 295: Printing networks

Analytic Functions In Networks

Import Node Neighbors

This method imports all direct neighbors of the selected nodes into the network. This option is currently available from the node's context menu. Importing direct neighbors allows you to construct a *connected* network step-by-step. (In a connected graph, there is always a direct or indirect path between any two nodes.)

Import common Neighbors imports all directly linked entities. All other options let you specifically select which entities you want to import. Below the options for the various entities types are listed:

Quotations - Common Neighbors are:

- *Import Codes*
- *Import Memos*
- *Import Hyperlinks*

Documents / Codes / Memos - Common Neighbors are:

- *Import Code*
- *Import Memos*
- *Import Quotations*
- *Import Groups*

Groups - Common Neighbors are:

- *Import Members*

- Select the node(s) whose neighbors are to be included in the network.
- Right-click and select **IMPORT NEIGHBORS** from the context menu and make your choice.

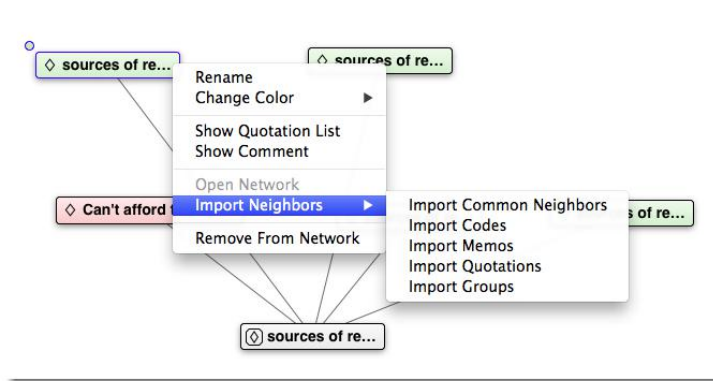


Figure 296: Importing code neighbors

Creating Case-Based Networks

Importing a document's codes neighbors allows to create case-based networks. You can ask questions like: Which of the codes have been applied in which document (and where do they not occur). ATLAS.ti automatically draws light gray dashed lines between codes and the primary documents. This is how you do it:

- Create a new network: **NETWORK / NEW NETWORK**.
- Drag-and-drop two or more document nodes into it, e.g. from the navigator.
- Right-click on each document node and select the option **IMPORT NEIGHBORS / IMPORT CODES**. Don't forget to do it for all document nodes, even if results pop up immediately.

Usually a lot of different codes have been applied to a document. Therefore this option works best, if you apply a global filter for codes. See "Working With Global Filters".

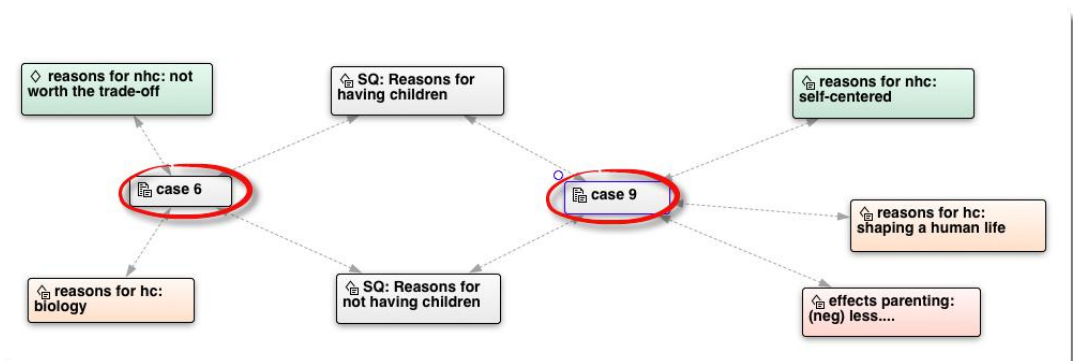


Figure 297: Case-based comparison using the import codes option for documents

The example below compares two respondents from a survey (case 6 and 9). The survey only included two open-ended questions and therefore the number of codes is still comprehensible.

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. For more information about these operators, see "Proximity Operators".

To import co-occurring codes:

- Right-click on a code node in a network and select the option **IMPORT CO-OCCURRING**.

This import all codes that co-occur at least once with the selected code. The codes are not yet linked to each other, unless they were linked previously.

This operation can result in a very crowded network. To control the process, apply a global code filter first. See "Working With Global Filters" for more detail.

Data And Project Export

Overview

■ Video tutorial: [ATLAS.ti Mac-Reports in Word](#)

Exporting Documents

You can export all documents that you have added to an ATLAS.ti project.

PDF and multimedia files (audio, video, images) are exported in their original format.

Text documents are exported as Word (docx) files. The formatting of the exported document may differ from the original, as all text documents are converted to html when they are imported.

To export documents:

- Open the Document Manager and select all documents that you want to export.
- From the main menu select **DOCUMENT / EXPORT DOCUMENT(S)**.
- Select a folder in which to save the documents.

Export As Report (Word/PDF)

You find an export button in each of the managers (entity managers and group managers). If cclick on the Export button and open the drop-down menu, you can select between *Export as Table* and *Export as Report*. If you want to create Word or PDF reports:

- The first step is to select, what you want to export in form of a report. The report contains all items listed in the manager. If you want to create a report of selected items, either select the items you want in the list, or set a filter. This means, you either select an item in the side panel, e.g. a code in the Quotation Manager or a code group in the Code Manager, on the left hand side, or by clicking on the filter button. Filtering the items in the list means you formulate a query, e.g. all quotations coded with codes of a particular code group; or all quotations containing a particular word.

For a step-by-step instruction, see the following sections: "Quotation Retrieval In The Quotation Manager"

- Next click on the drop-down menu of the Export button and select the option: **EXPORT AS REPORT**.
- A preview window opens. It shows the list of items as contained in the manager. On the right-hand side, you can make further selection to extend the content included in the report. Further you can specify how the items should be grouped in the report.



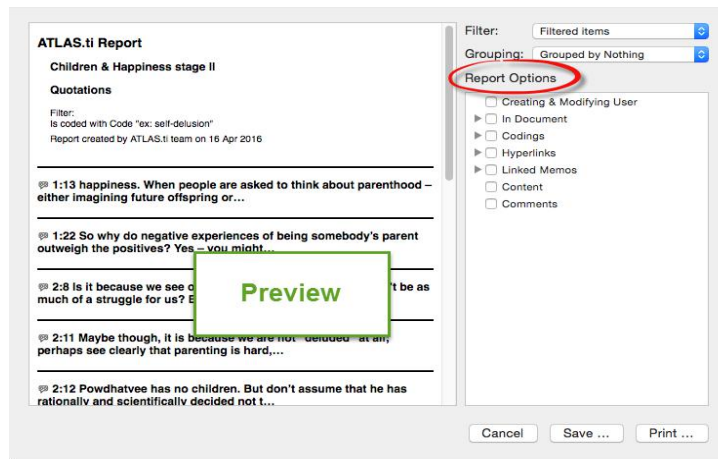


Figure 298: Report preview

The preview above contains quotation names of the code "ex: self-delusion" and was created by the user "ATLAS.ti team" in April 2016. This information is contained in the report header on top.

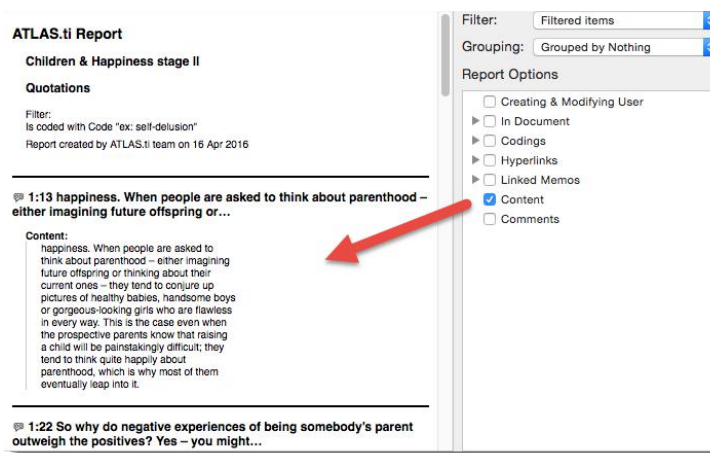


Figure 299: Report including quotation name and content

In order to include the full quotation content, select content on the right-hand side under Report Options. The preview changes and now also shows the full quotation content:

If you want the report to contain more detail, you can continue to select more options. All options with an arrow in front of them can be extended further and more options become available. In the addition to the quotation name and content, the preview in Figure 300 below also shows the other codes linked to the same quotation, the creating and modifying user & date, the list of documents where these codes are contained and the linked codes:

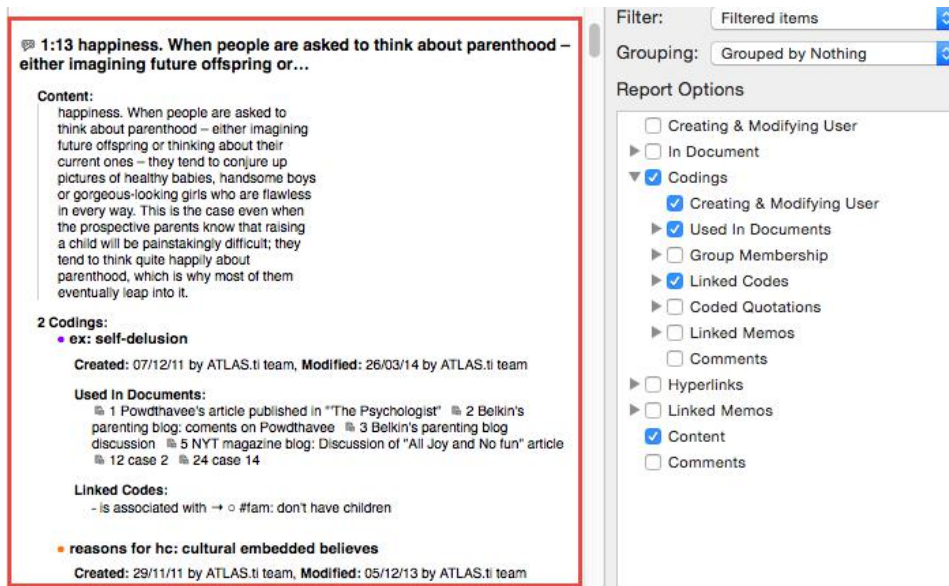


Figure 300: Report preview including more details

Figure 301 shows about half of the options available for creating reports for quotations. Basically, you are pretty much free in building the kind of report that you want and need for various purposes.

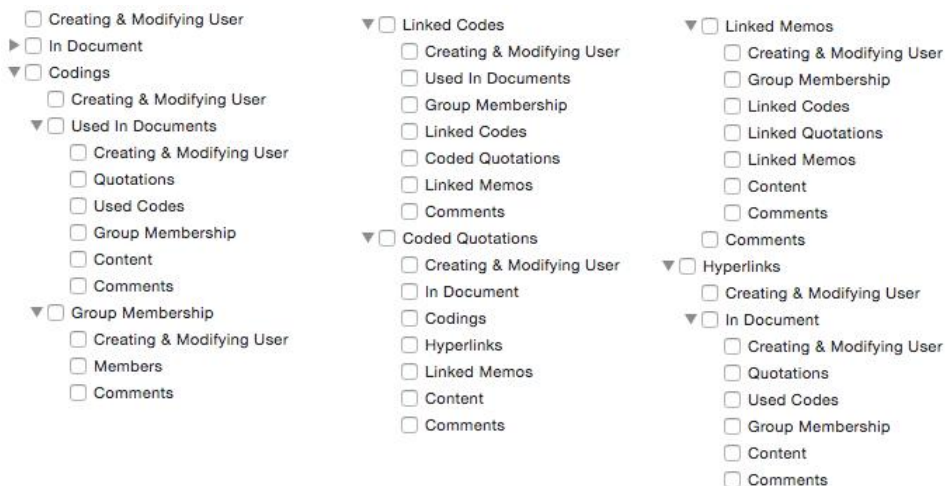


Figure 301: Just some of the options available for creating Quotation Reports

After you have made your selection and checked it in the preview, click on **SAVE** or **PRINT**. The Print option allows you to save the report in PDF format as well. When you select the Save option, you can save the report in doc, docx or odt format (Figure 302).

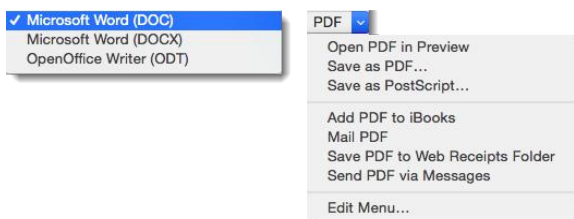


Figure 302: Save and print options for reports

Sample Quotation Report Using Grouping

The sample report should contain all quotations that are coded with codes of the code group "effects of parenting" that contain the words "joy" or "stress."

The first step is to click the query as shown in Figure 303. For more details on how to click quotation queries, see page 131.



Figure 303: Quotation query as filter for quotation report

Next, click on the Export button and select **EXPORT AS REPORT** from the drop-down menu. In the report header, the filter is spelled out in words:

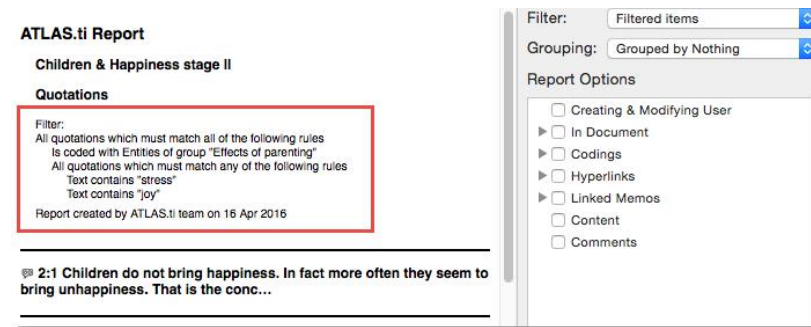


Figure 304: Sample report preview showing filter in header

Figure 305 shows the report including quotation content grouped by codes. In addition it was selected to also show the code comments:

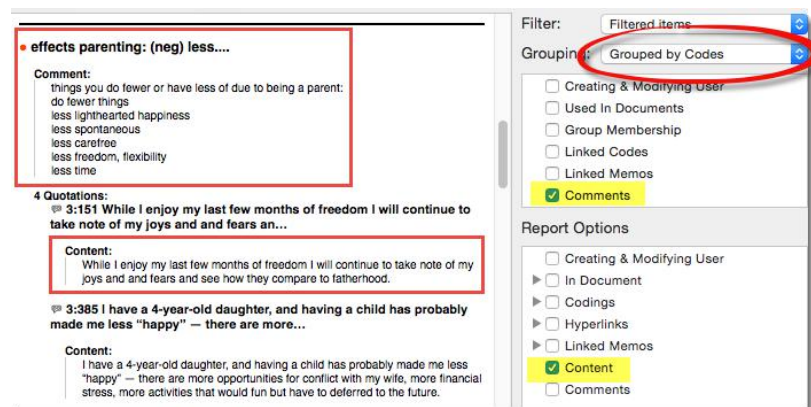


Figure 305: Quotation report grouped by codes, showing code comments and quotation content

Sample Code Report

The following code report preview shows:

- All codes included in the code group "Study Design" + code comments
- Grouped by documents + document comments
- Plus the coded quotations for each code and their content

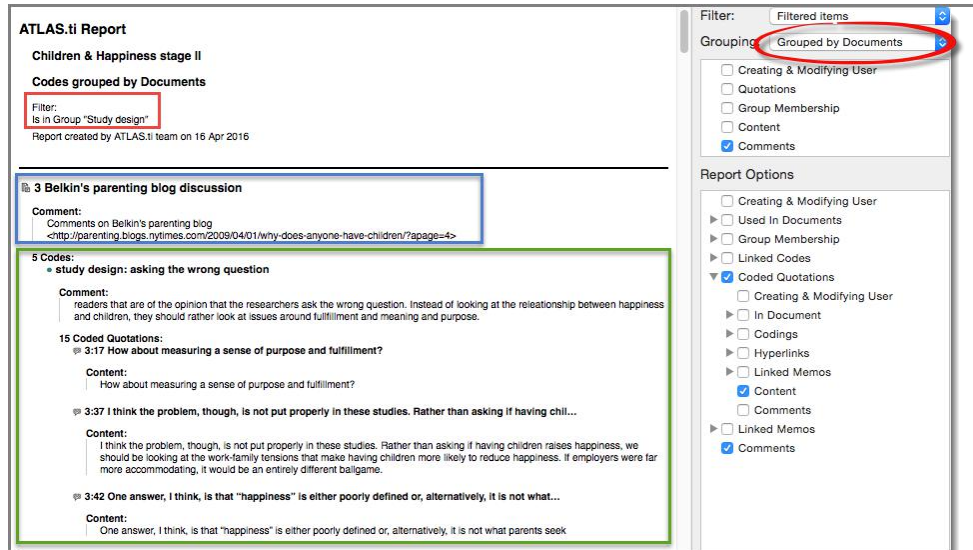


Figure 306: Sample code report (preview)

Video Tutorials:

- [ATLAS.ti Mac: Creating an Output of the Codebook](#)
- [ATLAS.ti Mac: Creating Outputs of All entities](#)
- [Creating output based on the entire project](#)
- [ATLAS.ti Mac: Creating a code book](#)

Export As Table (Excel)

You can export the content of all four managers (document, quotation, code and memo) to Excel or OpenOffice Calc. If you no make no selection, all items are exported. If you only want to export selected items, you need to filter the content of the managers. The simplest option is by selecting a group in the side panel and possibly combine it with a "grouped by" view; or you formulate a more complex query by clicking on the filter icon (see left).



Click on the Export icon. Enter a file name or leave the default name. Select a location for the file and chose the desired format.

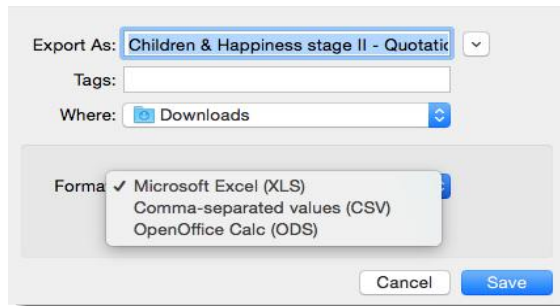


Figure 307: Exporting the content of managers to Excel / Open Dice Calc

Video Tutorials:

- [ATLAS.ti Mac: Output of quotations by code](#)
- [ATLAS.ti Mac: Outputs in Excel of Document Information](#)

Exporting The Project In XML Format

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.

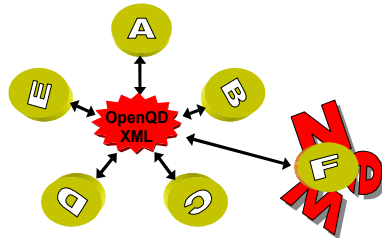


Figure 308: XML is a universal data interchange format, allowing programs to exchange data

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.

You find an output option under the main menu of each entity type: Document, Quotation, Code, Memo and Network.

■ To export your ATLAS.ti project as XML file for use in other applications, select **PROJECT / EXPORT PROJECT TO XML**.

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 HTML code (right-click and select "View Source" when browsing any 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 prescribed 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 would be either 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, there are countless sources online.

Export Documents With Codes

You can print the documents with the codes on the right-hand side as you see it on your screen. The report creates a WYSIWYG printout of coded documents (What You See Is What You Get). Instead of printing the document, you can also save it as PDF file, mail the PDF file or add it to iBooks, etc. See Figure 309 for available options.

The print documents with codes option is available for textual primary documents, PDF and image documents.

The printout resembles the screen display at the time of creating the output. Only those margin entities are included that are currently displayed in the margin. If not everything that you want to be visible is included, adjust the margin area. To change the type of entities that are displayed, right click on a white space in the margin area to open the context menu and select the entities to be included in the output.

- Load the primary document that you want to print.
- Select **PROJECT / PRINT** from the main menu.
- The printer dialogue window opens. Select *Show Detail* to to see all option as shown in Figure 309. Make your choices. Select landscape view if your codes spread over several columns. If you change the settings the preview adjusts automatically. If you do not want to print the entire document, select start and end page. The pages are shown in the preview.

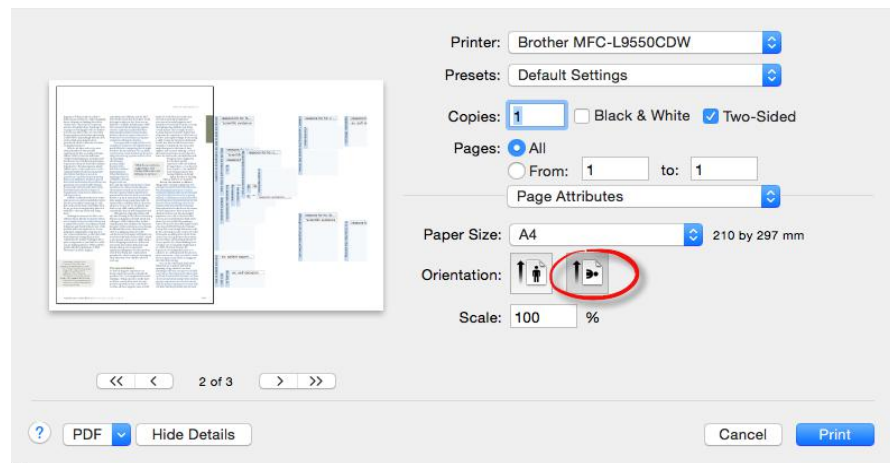


Figure 309: Print with margin settings

- Prior to printing the document, you can also open a PDF preview or select other options. See Figure 310).

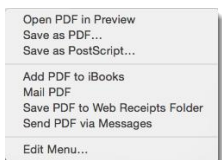


Figure 310: Print with margin options

Export Networks

- Open the network you want to print or save as external file first.
 - Select **PROJECT / PRINT**.
- See page 169 for further detail.

Export Project

- Select **PROJECT / EXPORT PROJECT**. Save the file to your hard disk, an external or a cloud drive.
- See page 26 for further detail.

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.

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).

ATLAS.ti exports quotations as cases. You can use SPSS features to use primary documents as cases.

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), author, media type and date of creation.

There are two variables for the start position (SY and SX) and two variables for the end position (EY and EX) for a quotation. Depending on the media type, they are used for different start and end coordinates.

	SY (start)	SX (start)	EY (end)	EX (end)
Text (rich text)	paragraph	Column character, quotation based	paragraph	Column character, quotation based
PDF	page	Character count, page based	page	Character count, page based
Audio	---	milliseconds	---	milliseconds
Video	---	milliseconds	---	milliseconds
Image	SX and SY indicate the position of the upper left hand corner of the image		EX and EY indicate the position of the lower right hand corner of the image	
Geo	---	---	---	---

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 'Mixed Data for SPSS'.

* SPSS Syntax file generated by ATLAS.ti 8.2.0.
* SPSS Generator Version 1.0
* Date: 2018-04-12T14:48:05.

DATA LIST RECORDS=2
  /1 CASENO (F6.0) D (F6.0) QU (F6.0) AUTHOR (A16) SY (F8.0) SX (F8.0)
    EY (F8.0) EX (F8.0) TI (F10.0)
  /2 C1 to C8 1-8.

VARIABLE LABELS D 'Document'.
VARIABLE LABELS QU 'Q-Index'.
VARIABLE LABELS SY 'Start y-Pos'.
VARIABLE LABELS SX 'Start x-Pos'.
VARIABLE LABELS EY 'End y-Pos'.
```


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 "evaluation" 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:

You can use string or 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.

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: dichotomous.

Use comments for an explanation of scaled code's values

Do not assign mutually exclusive codes to the same quotation!

Do not assign more than one scaled variable value (e. g., 'evaluation %good' and 'evaluation %bad' 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 Groups

Treatment Of Code Groups

Code groups 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 CG1 = C10 + C11 + C12 + C13 + C14 + C15.
VARIABLE LABELS CG1 'CG_Investigation'.
```

Scaled codes are ignored in the computation of code groups variables.

Treatment Of Document Groups

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:

```
* DG1 Description of Victims.
COMPUTE DG1 = 0.
IF (D = 5 or D = 6 or D = 8 or D = 9 or D = 10) DG1 = 1.
VARIABLE LABELS DG1 'DG_Description of Victims'.
```

Creating SPSS Output

- From the **Project** menu select **EXPORT SPSS**
- The SPSS Job Generation Window opens:

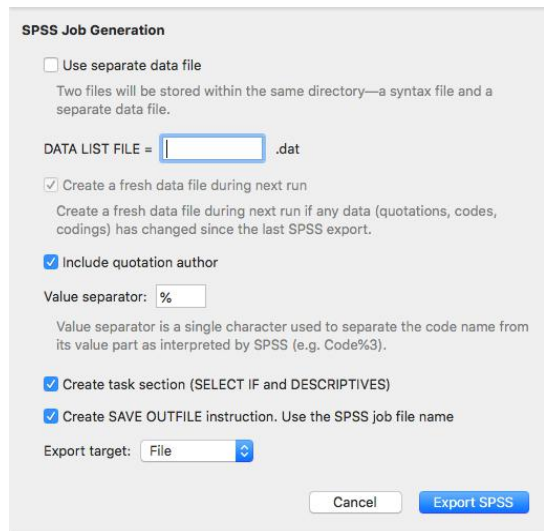


Figure 311: Property window for SPSS job

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.

DATA LIST FILE. 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.

Include quotation's author. Check if you want to export an additional variable that indicates the author for each quotation. This is for example useful if you want to use SPSS to calculate inter-coder reliability.

The value separator is % by default, but can be changed to something else. See "Scaled vs. Dichotomous Codes."

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.

Export target: Select whether you want to export the SPSS syntax file as file or open its content in an editor.

Specify all desired properties and click **EXPORT SPSS**.

You can now run the file in SPSS, or make some changes to the syntax file before you run it.

ny regular expression your formulate on this web site: <https://regex101.com/>

Margin Area

Display Of Entities In The Margin Area

You can select what you want to display in the margin area, by right-clicking somewhere on an empty space in the margin area. You can display codes, memos, hyperlinks, code groups, memo groups or networks.

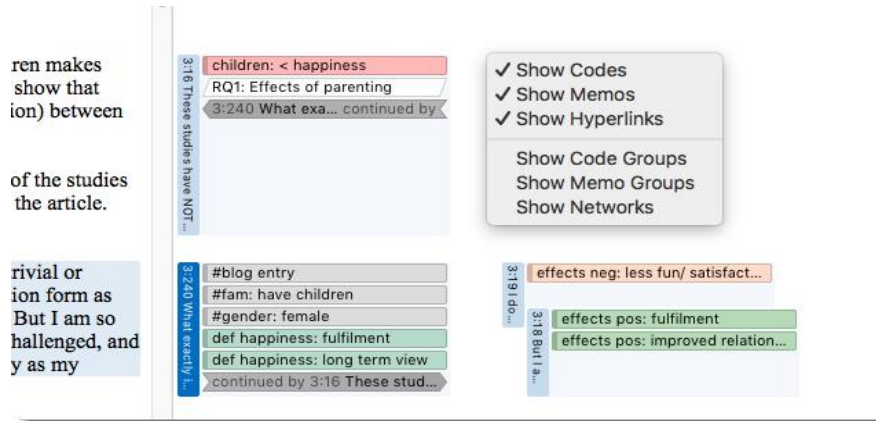


Table 4: Select what you want to display in the margin area

Margin Drag-And-Drop

All entities populating the margin area (i. e., "margin entities") support drag & drop. The bar visualize quotations segmenting the document, and - depending on the context - the entities attached to the bars represent themselves or the link with the quotation.

The effect of a drag & drop operation depends on the entities that are involved as drag sources (those that are dragged) and targets (those onto which entities are dropped). A large variety of entities from the margin area can be dropped into the margin area. Furthermore, entities can also be dragged from other entity managers and browsers.

Move Linked entities

When a code, memo, or a quotation is dropped on a quotation bar, a new link is created between the entity and the quotation represented by the bar. You can for instance drag-and-drop quotations, codes and memos from the navigator or any of the managers.

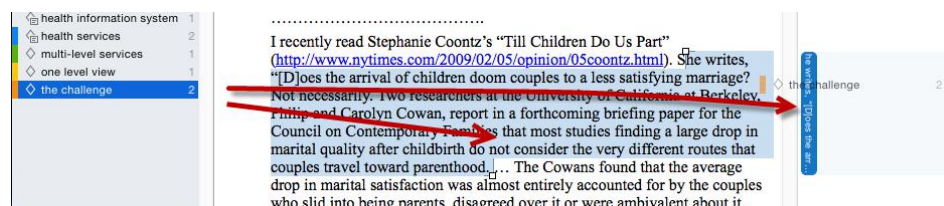


Figure 312: Coding via drag and drop from the navigator

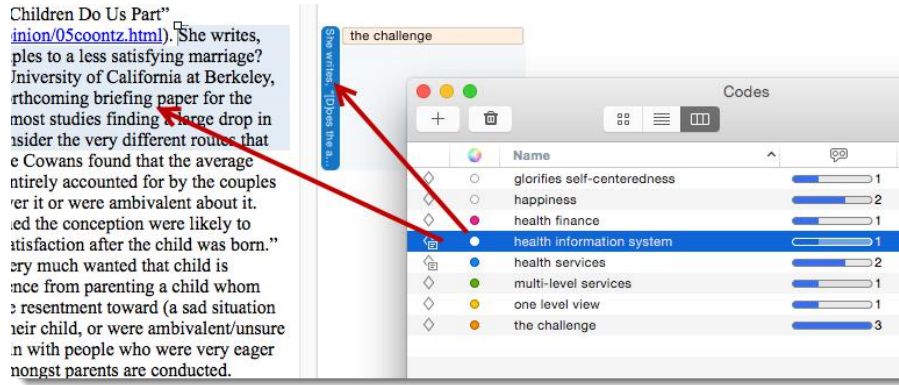


Figure 313: Coding via drag & drop from the Code Manager

Copy Linked entities

An entity in the margin is unlinked from its original quotation when it is dropped on another quotation bar. To keep the entity from unlinking from its original place, hold down the **alt**-key when dropping. This resembles dragging entities from managers and browsers into the margin area, which does not change existing links.

You will see a green button with a plus sign if an entity is copied and not moved.

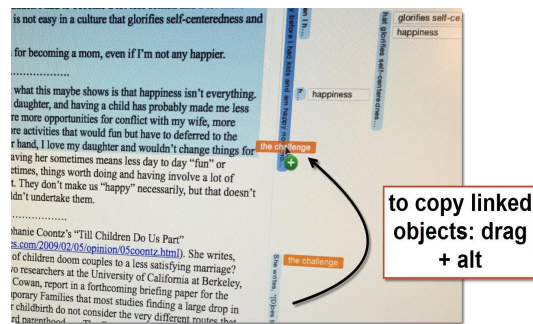


Figure 314: When copying linked entities, hold down the alt key

Linking Quotations

Dragging a quotation bar onto another quotation bar creates a hyperlink between the two quotations.

- Open two documents side-by-side (see "Multiple Document View").
- Drag the quotation bar from one document onto the quotation bar in another document. A list of relations opens to choose from. Select one of the offered relations. If none of the existing relations adequately reflects the relation between the two quotations, you can create new relations in the relation manager (see "Defining New Hyperlink Relations"). After selecting a relation the two quotations are linked and the hyperlink is displayed in the margin area (see Figure 175).



Figure 316: Creating a hyperlink across documents when opening two documents side-by-side

Appendix

Zooming

The following keys are supported for zooming: cmd -, cmd + and shift-mousewheel (anywhere except in text documents).F

Useful Resources

The ATLAS.ti Website

■ <https://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

■ <https://quicktour.atlasti.com>

To get started, we recommend to work your way through the Quick Tour. In about two 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 "Short Manual"(see below) as your continuing guide.

ATLAS.ti 8 - What's New

■ [What's New in ATLAS.ti 8](#)

This document is intended specifically for users who already have experience using the previous version, ATLAS.ti 7, and who are making the switch to the newest generation.

Manuals and Documents

■ <https://manual.atlasti.com>

Find the Quick Tour, How To Documents like installation instruction, information on project exchange, and team work, the sample projects, our research blog and the library on this page.

Video Tutorials

■ <https://tutorials.atlasti.com>

If you enjoy learning via video tutorials, we offer a range of short videos on topics such as: Features and Interface; Getting started on a project; Coding; Visualizing - Working with networks and Hyperlinks. -- Under the link below you find a playlist of video tutorials specifically on some of the basic operations, including How to create a project; how to add documents; how to add codes; how to create groups, etc.: [Quick Tour ATLAS.ti 8 Mac - English](#)

Research Blog

■ <https://blog.atlasti.com/>

The ATLAS.ti Research Blog plays a very important role in the development and consolidation of the international community of users. Consultants, academics, and researchers publish short and practical articles highlighting functions and

procedures with the software, and recommending strategies to successfully incorporate ATLAS.ti into a qualitative data analysis process. We invite you to submit short articles explaining interesting ways of making the best use of ATLAS.ti, as well as describing how you are using it in your own research. To do so, please [contact us](#).

Social Media

YOUTUBE

■ <https://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.

FACEBOOK

■ <https://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

■ <https://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

■ <https://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.

User Conference

■ <https://conference.atlasti.com>

The biannual international ATLAS.ti User Conference is a fantastic opportunity for users to meet developers, trainers, experts, and other users from all over the world to learn from one another.

Publications

- Woolf, Nickolas H. and Silver, Christina (2017). *Qualitative Analysis Using ATLAS.ti. The Five-level QDA method*. Routledge.
- Friese, Susanne (2014, 2ed). *Qualitative Data Analysis with ATLAS.ti*. London: Sage.
- Susanne Friese & Thomas Ringmayr, eds., *ATLAS.ti User Conference 2015: Qualitative Data Analysis and Beyond. Conference Proceedings*. Universitätsverlag TU Berlin. August 2016. [Online](#)

Getting Support

■ <https://support.atlasti.com>

The easiest way to contact the Support Center is via the main menu option **HELP / ATLAS.TI HELP**. Or access the Support Center directly via the above URL.

Frequently Asked Questions

■ <https://kb.atlasti.com>

Frequently asked questions are collected in our knowledge base on our website.

Get In Touch

Under **HELP / SEND FEEDBACK** you can send suggestions. We invite you to make use of these options.

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.

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.