

# Introduction to Atlas.ti

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# Logistics

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- ▶ You can use Atlas.ti 5.0 on most Harvard computers
- ▶ You can download it for free IF you have:
  - ▶ A PC, or a Mac that runs Bootcamp or Parallels
  - ▶ Windows 2000 or XP (not Windows 7)
  - ▶ The Keyserver Client and a VPN client to connect to the Harvard network
  - ▶ If you want to do this, please contact FAS-IT for help  
<http://downloads.fas.harvard.edu/download?platform=win>
- ▶ You can also buy a student copy for \$99 by providing them with your student ID  
<http://www.atlasti.com/students.html>



# Why should I use it?

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- ▶ Categories that cut through your data *horizontally*
  - ▶ Think about how researchers used to do data analysis
- ▶ Build an inventory of quotations
- ▶ Allows concepts to emerge from the data inductively



# Qualitative Data Analysis (QDA)

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- ▶ In many ways, the Qualitative Data Analysis (QDA) process operates in an opposite direction than quantitative data analysis does
  - ▶ In quantitative analysis, we usually come up with a theory, and then test it with our data
  - ▶ In qualitative analysis, we often want to allow concepts to emerge organically from our data



# Grounded Theory

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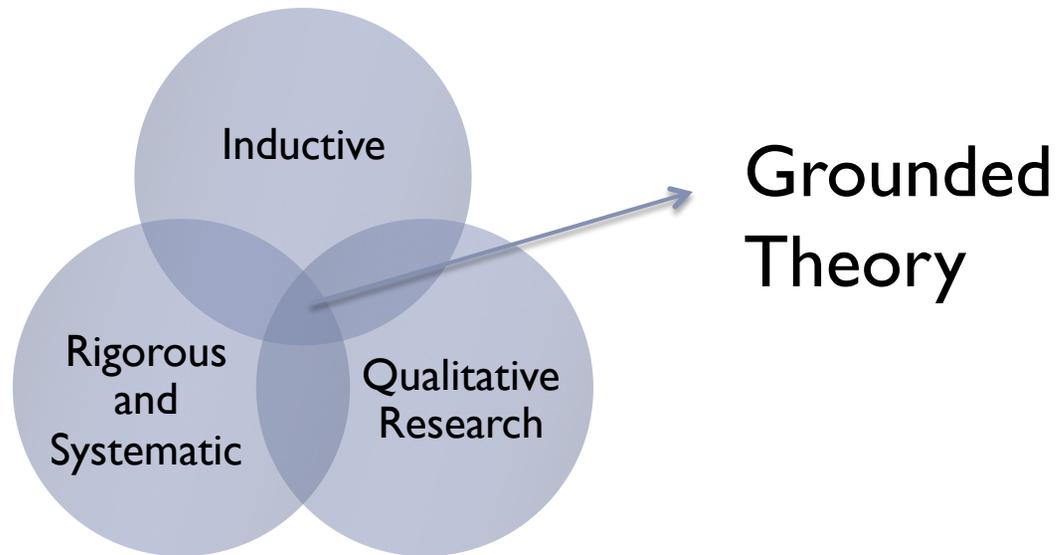
- ▶ Inquiry is shaped by the aim to discover social *processes* (Strauss and Corbin)
- ▶ Data collection and analysis phases of project proceed simultaneously
- ▶ Analytic processes employed prompts theory discovery and development (*inductive*), rather than verification of previous theories (*deductive*)
- ▶ *Theoretical sampling* refines, elaborates, and exhausts conceptual categories, and happens simultaneously
- ▶ Systematic application of grounded theory analytic methods will progressively lead to more abstract analytic levels (Charmaz 1983, 125).



# Grounded Theory

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- ▶ Glaser and Strauss (1967). *The Discovery of Grounded Theory*.
- ▶ Over-emphasis on use of data for theory verification
  - ▶ In contrast to Merton's (1957) traditional positivist inquiry which forces data into predetermined theoretical categories
- ▶ Under-emphasis on use of data for conceptual discovery



# Stages of Coding

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- ▶ **Strauss and Corbin**

- ▶ **Open Coding** – open-minded procedure for developing categories of information, based on what is in the data
- ▶ **Axial Coding** – procedure for interconnecting the categories
- ▶ **Selective Coding** – procedure for building a story that connects the categories producing a discursive set of theoretical propositions

- ▶ **Charmaz**

- ▶ 2 stages



# Important Best Practices for Atlas.ti

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- ▶ **Do not move files and out of your textbank**
  - ▶ If you are using Atlas.ti on a Harvard computer, you should store all of your files in one folder on a flash drive
- ▶ **Do not edit files in your textbank in their native software**
- ▶ **Each day when you begin work in Atlas, save your HU under that day's date.**
  - ▶ There is no “undo” in Atlas
  - ▶ This way, if you make a big mistake, you can at least revert back to the way it looked at the beginning of the day
- ▶ **Always use Copy Bundle to backup, copy, or migrate projects**
  - ▶ Since HUs are just “containers” you will have to follow a special procedure if you want save ALL your work in one file.



# Preparation documents for Atlas.ti

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- ▶ **Word files** > convert to **.rtf**
- ▶ **Formatting**
  - ▶ Regular spacing
  - ▶ Uniform font
  - ▶ Clearly differentiated speakers
  - ▶ Attention to single hard returns
- ▶ If you are using photos, audio files, or any other media we can talk about this one-on-one



# Opening Atlas.ti

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- ▶ Programs > Scientific Software > Atlas.ti 5.0
- ▶ You also go into your project folder (wherever it is) and open your HU.



# Basic Terms and Concepts

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1. **Hermeneutic Unit (HU)**
2. **Primary Documents (PD)**
3. **Quotations**
4. **Codes**
5. **Networks**
6. **Object Managers**



# 1. Hermeneutic Unit, or HU

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- ▶ To understand how Atlas.ti handles data, visualize your entire project as an intelligent “container” that keeps track of all of your data. This container is the ATLAS.ti project file, called the **Hermeneutic Unit**, or **HU**, for short.
- ▶ The **HU** maintains the pathways to your source data and stores the codes, code families, network views, etc. that you develop in the course of your work. Opening a HU automatically activates all associated material, thus streamlining your data and enabling you to work with a single entity.



## Exercise: Create textbank and save HU

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1. Create a folder called “**textbank**” on your flash drive
2. Create a new HU by saving your HU to this **textbank** folder (the extension will be **.hpr5**)



# Data Source Management

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- ▶ Save your **HU** and **documents** in the same folder
- ▶ Convert Word files into Rich Text Format (.rtf)
  - ▶ .rtf files can be edited in Atlas whereas Word files cannot
- ▶ Store all your .rtf documents in the “textbank” folder that you created
- ▶ Keep your original documents in a separate folder
  - ▶ Do not edit the files in your **textbank** in their native program



## 2. Primary Document

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- ▶ Your source data is entered into Atlas in the form of a **Primary document**
- ▶ Your source data can comprise:
  - ▶ **text documents** (such as interviews, articles, reports)
  - ▶ **images** (photos, screenshots, diagrams)
  - ▶ **audio** recordings (interviews, broadcasts, music)
  - ▶ **video clips** (audiovisual material)
  - ▶ **PDF files** (papers, brochures, reports)
  - ▶ **geodata** (locative data using Google Earth)
- ▶ Once you **assign** a data file to your project, it becomes a **Primary Document** which represents and contains additional information about its source counterpart (i.e. the assigned data file). The paths to your data are maintained as part of your project.



## Exercise: Assign PD's to HU

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- ▶ We will now assign a document to your HU
  - ▶ Documents > assign > select multiple files with control key > open
  - ▶ The names of the documents should now be listed in the drop-down list of your primary documents, as “P1,” “P2” etc.)
- ▶ You can also use memos as primary documents
  - ▶ Memo window > miscellaneous > assign as primary doc
- ▶ To load a PD, double click on the name of the document



# Rearranging PDs

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- ▶ The ID of a PD determines its position in the list of PDs when in default sort order.
- ▶ To rearrange PDs (to change their IDs), use one of the following options:
  - ▶ Rearrange a selected PD only.
    1. Select the PD in the Document Manager whose list position should be changed.
    2. Choose DOCUMENTS/MISCELLANEOUS/CHANGE POSITION from the main menu.
    3. Enter a position number after which the selected document is to be moved.
  - ▶ Rearrange one or more PDs using drag & drop.
    1. Open the Document Manager.
    2. Select the PDs
    3. Start to drag the PDs.
    4. A dashed bar appears at the current list insertion point.
    5. Drop the PDs when you reach the desired location for the documents.
  - ▶ Renumber all PDs to make the current sort permanent while eliminating gaps in the numbering at the same time.
    - ▶ Select DOCUMENTS/MISCELLANEOUS/RENUMBER ALL from the main menu.



# Exercise: Editing PD's

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- ▶ Edit mode needs to be intentionally switched on for textual PDs.
- ▶ Entering Edit Mode
  - ▶ Load a rich text or plain text PD.
  - ▶ Click on the Edit button in the main toolbar, or select **Edit > Document Access > Enter Edit Mode** from the main menu
  - ▶ Make desired changes to document
- ▶ Leaving Edit Mode
  - ▶ Click on the down arrow next to the Edit button or select **Edit > Document Access** from the main menu and choose the **save and leave edit mode** or the **Discard changes and leave edit mode option** from the submenu
- ▶ **Save your HU!**



## Exercise: Create a Quotation

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1. Drag your cursor over the text you want to select while holding the left mouse button
  - ▶ Double click on a word to highlight it
  - ▶ Click again to highlight the sentence
  - ▶ Click again to highlight the entire paragraph
2. Click on the “ ” button on the vertical toolbar to create “free” quotation (you can assign a code to it later)
3. Any quotations attached to the primary document you are viewing are visible in the drop-down menu of the Quotation Manager.



# 3. Quotations

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- ▶ Your data.



## More on quotations

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- ▶ Brackets in the margin indicate that there is a quotation
  - ▶ Clicking on the bracket will highlight the quotation
  - ▶ If the quotation is attached to a code, it will appear next to the quotation
- ▶ If you need to change the text that is selected for a given quotation:
  1. Click on the quotation to re-highlight it,
  2. Highlight the correct selection,
  3. Then click on the “check” mark on the left tab.
- ▶ You can create quotations and attach codes to them in a single step – as we will see next.



## 4. Coding

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- ▶ Once your various documents are **assigned**, 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 objectives.
- ▶ Atlas has modeled this function to be like underlining, highlighting, and/or **annotating** text passages in a book or other document.



# Exercise: Create a code

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## ▶ **Open Coding**

1. Highlight a quotation or a piece of text
2. Right click > click **open code** > enter the name of the code or codes you want to attach to this quotation separated by |
3. The new code will now appear in the bracket to the right of your quotation, as well as in your **Code Manager**
4. You can also create an open code without assigning any quotations to it

## ▶ **In-vivo Coding**

1. Highlight a quotation or a piece of text
2. Right click > click **In-vivo code**
3. The new code will take on the name of the text that is selected and will now appear in your **Code Manager**



# Exercise: Coding cont.

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## ▶ **Code by List**

1. Open up the **Code Manager** so you can see your list of codes. If you do not have any codes, create one
  - ▶ Click on **Codes > Create new code**
  - ▶ At prompt enter your code(s): **CODE A | CODE B | CODE C**
2. Highlight a quotation or a piece of text
3. Drag your mouse from the code you want (in your code manager) to the highlighted text
4. OR, Right click on the selected text and go to **CODING > Code by List >** choose a code
5. The code will now appear next to the bracket, to the right of the quotation, in the margin.



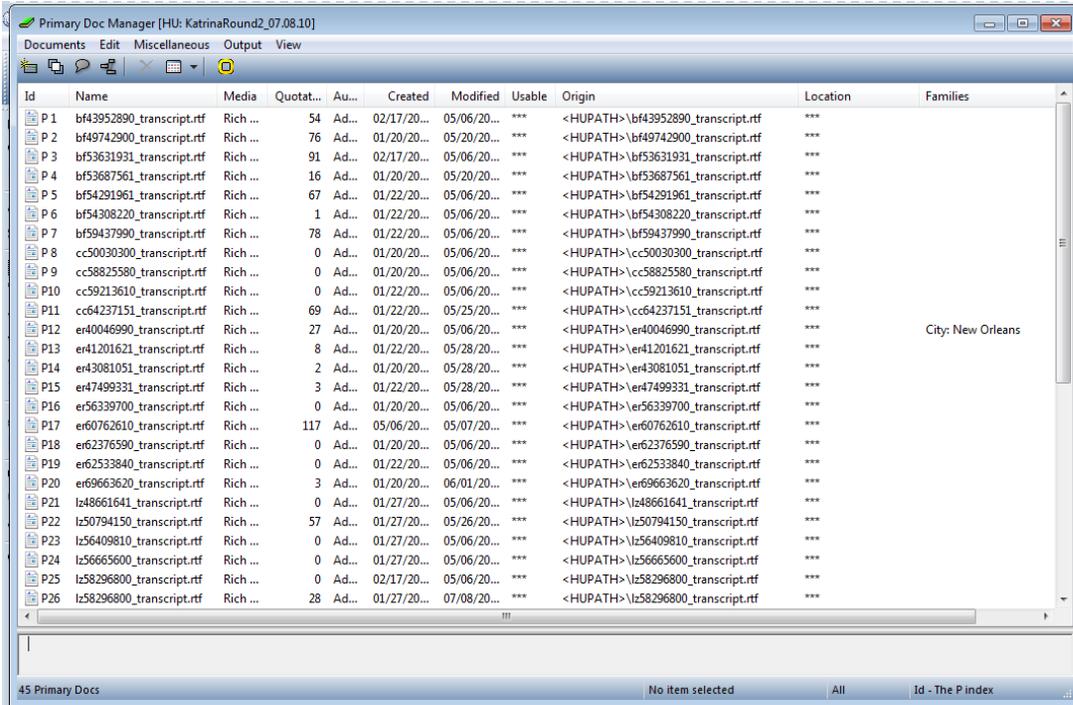
# Unlinking and Deleting Codes

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- ▶ If you change your mind about a code you have assigned to a specific quotation, it is better to **unlink** the code rather than **delete** the code, (deleting the code will delete it for the entire project you would also delete from anywhere else in the HU that you may have used it).
- ▶ To unlink
  - ▶ Right click on the bracket of the quotation coded with the unwanted code
  - ▶ Select **unlink code**
  - ▶ The quotation still exists (the bracket remains) but the code is gone from that quotation



# Density and Groundedness



The screenshot shows a window titled "Primary Doc Manager [HU: KatrinaRound2\_07.08.10]". The window contains a table with columns: Id, Name, Media, Quotat..., Au..., Created, Modified, Usable, Origin, Location, and Families. The table lists 26 documents (P1 to P26) with various metadata. The "Origin" column shows paths like <HUPATH>\bf43952890\_transcript.rtf. The "Location" column is mostly empty, with "City: New Orleans" appearing in the "Families" column for rows P12 through P26. The status bar at the bottom indicates "45 Primary Docs", "No item selected", "All", and "Id - The P Index".

Id	Name	Media	Quotat...	Au...	Created	Modified	Usable	Origin	Location	Families
P 1	bf43952890_transcript.rtf	Rich ...	54	Ad...	02/17/20...	05/06/20...	***	<HUPATH>\bf43952890_transcript.rtf	***	
P 2	bf49742900_transcript.rtf	Rich ...	76	Ad...	01/20/20...	05/20/20...	***	<HUPATH>\bf49742900_transcript.rtf	***	
P 3	bf53631931_transcript.rtf	Rich ...	91	Ad...	02/17/20...	05/06/20...	***	<HUPATH>\bf53631931_transcript.rtf	***	
P 4	bf53687561_transcript.rtf	Rich ...	16	Ad...	01/20/20...	05/20/20...	***	<HUPATH>\bf53687561_transcript.rtf	***	
P 5	bf54291961_transcript.rtf	Rich ...	67	Ad...	01/22/20...	05/06/20...	***	<HUPATH>\bf54291961_transcript.rtf	***	
P 6	bf54308220_transcript.rtf	Rich ...	1	Ad...	01/22/20...	05/06/20...	***	<HUPATH>\bf54308220_transcript.rtf	***	
P 7	bf59437990_transcript.rtf	Rich ...	78	Ad...	01/22/20...	05/06/20...	***	<HUPATH>\bf59437990_transcript.rtf	***	
P 8	cc50030300_transcript.rtf	Rich ...	0	Ad...	01/20/20...	05/06/20...	***	<HUPATH>\cc50030300_transcript.rtf	***	
P 9	cc58825580_transcript.rtf	Rich ...	0	Ad...	01/20/20...	05/06/20...	***	<HUPATH>\cc58825580_transcript.rtf	***	
P10	cc59213610_transcript.rtf	Rich ...	0	Ad...	01/22/20...	05/06/20...	***	<HUPATH>\cc59213610_transcript.rtf	***	
P11	cc64237151_transcript.rtf	Rich ...	69	Ad...	01/22/20...	05/25/20...	***	<HUPATH>\cc64237151_transcript.rtf	***	
P12	er40046990_transcript.rtf	Rich ...	27	Ad...	01/20/20...	05/06/20...	***	<HUPATH>\er40046990_transcript.rtf	***	City: New Orleans
P13	er41201621_transcript.rtf	Rich ...	8	Ad...	01/22/20...	05/28/20...	***	<HUPATH>\er41201621_transcript.rtf	***	
P14	er43081051_transcript.rtf	Rich ...	2	Ad...	01/20/20...	05/28/20...	***	<HUPATH>\er43081051_transcript.rtf	***	
P15	er47499331_transcript.rtf	Rich ...	3	Ad...	01/22/20...	05/28/20...	***	<HUPATH>\er47499331_transcript.rtf	***	
P16	er56339700_transcript.rtf	Rich ...	0	Ad...	01/20/20...	05/06/20...	***	<HUPATH>\er56339700_transcript.rtf	***	
P17	er60762610_transcript.rtf	Rich ...	117	Ad...	05/06/20...	05/07/20...	***	<HUPATH>\er60762610_transcript.rtf	***	
P18	er62376590_transcript.rtf	Rich ...	0	Ad...	01/20/20...	05/06/20...	***	<HUPATH>\er62376590_transcript.rtf	***	
P19	er62533840_transcript.rtf	Rich ...	0	Ad...	01/22/20...	05/06/20...	***	<HUPATH>\er62533840_transcript.rtf	***	
P20	er69663620_transcript.rtf	Rich ...	3	Ad...	01/20/20...	06/01/20...	***	<HUPATH>\er69663620_transcript.rtf	***	
P21	lz48661641_transcript.rtf	Rich ...	0	Ad...	01/27/20...	05/06/20...	***	<HUPATH>\lz48661641_transcript.rtf	***	
P22	lz50794150_transcript.rtf	Rich ...	57	Ad...	01/27/20...	05/26/20...	***	<HUPATH>\lz50794150_transcript.rtf	***	
P23	lz56409810_transcript.rtf	Rich ...	0	Ad...	01/27/20...	05/06/20...	***	<HUPATH>\lz56409810_transcript.rtf	***	
P24	lz56665600_transcript.rtf	Rich ...	0	Ad...	01/27/20...	05/06/20...	***	<HUPATH>\lz56665600_transcript.rtf	***	
P25	lz58296800_transcript.rtf	Rich ...	0	Ad...	02/17/20...	05/06/20...	***	<HUPATH>\lz58296800_transcript.rtf	***	
P26	lz58296800_transcript.rtf	Rich ...	28	Ad...	01/27/20...	07/08/20...	***	<HUPATH>\lz58296800_transcript.rtf	***	

- ▶ **Groundedness** = code frequency (# of quotations it is linked to)
- ▶ **Density** = number of links to other codes
- ▶ (this can be established in network view)

# Special Tools

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## ▶ Auto-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 like speaker turns in group interviews, or other sections that can easily be identified by a text search.
- ▶ Auto-coding allows you to quickly collect ideas that belong to a certain concept on the basis of words or patterns found in the text.

## ▶ Word-Cruncher

- ▶ This feature offers word “crunching” capabilities for a simple quantitative content analysis. It creates a list of word frequency counts for the selected or all (currently filtered) textual PDs. A stop list and a list of ignorable characters can be used to control the analysis.

## ▶ Object Crawler

- ▶ Use the Object Crawler to search for text and patterns in HUs, PDs, and all other entities that make up an HU. The search can be restricted to certain facets, like name, author, date, comments, and content.
- ▶ Unlike the Text Search tool, the Object Crawler can search through all objects and fields that contain text. The Text Search tool only searches primary text documents.



# Memos

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- ▶ Use for longer ideas about the data that you wouldn't want to put in a code
- ▶ They can be “free” or “attached” to various quotations
- ▶ Use memos to keep track of what you do each day:
  - ▶ Analytical ideas
  - ▶ Code changes
  - ▶ Where you leave off in coding
- ▶ You can make a memo a primary doc and code it as if it's an interview



# Object Explorer

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- ▶ Although the structures that can be created with ATLAS.ti are not necessarily restricted to hierarchical trees, the ATLAS.ti Object Explorer provides a hierarchical view of the HU and all of the objects that it references.
- ▶ Main purpose of the Object Explorer is to serve as a hierarchical content table, which may be used to navigate between the different parts of the HU.
- ▶ Unlike the “pure” Object Managers that display only one type of object, the Object Explorer allows an integrated and structured display of all heterogeneous objects that make up an HU.
- ▶ These are PDs, quotations, codes, memos, families, and networks. The display, though, is not strictly hierarchical. You will notice some redundancy when expanding the tree view. For instance, quotations are listed under each PD. As PDs can also be members of PD families, their quotations appear there as well.



# Query Tool

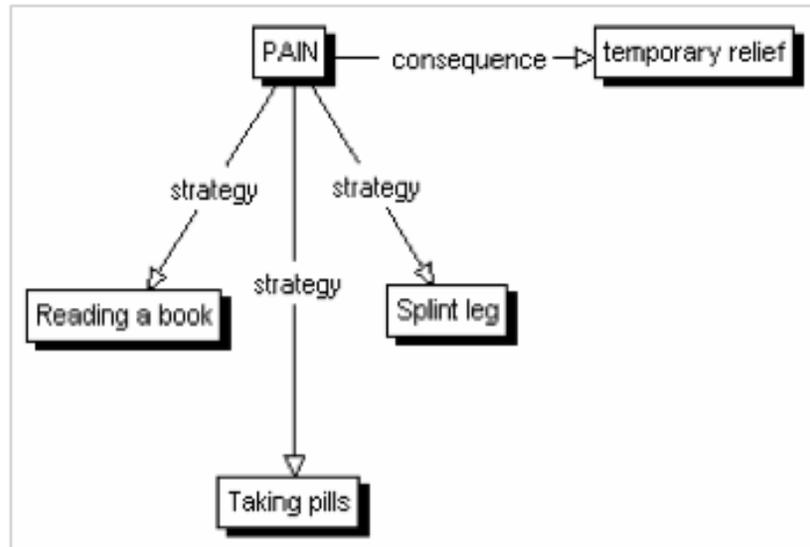
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- ▶ The Query Tool is used for retrieving quotations using the codes they were associated with during the process of coding.
- ▶ The simplest retrieval of this kind (“search for quotations with codes”) is what you frequently do with the Code Manager: double-clicking on a code retrieves all its quotations. This may already be regarded as a query, although it is a simple one.
- ▶ The Query Tool is more complex in that it can be used to create and process queries that include combinations of codes.
- ▶ A query is a search expression built from operands (codes and code families) and operators (e.g. NOT, AND, OR, etc.) that define the conditions that a quotation must meet to be retrieved (e.g., all quotations coded with both codes A and B).
- ▶ By selecting codes or code families – (i.e., the operands or descriptors) and operators, a query can be built incrementally which is instantaneously evaluated and displayed as a list of quotations. This incremental building of complex search queries gives you an exploratory approach toward even the most complex queries.
- ▶ A **supercode** = a saved query



# The Conceptual Level: **Network View**

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- ▶ In contrast with linear, sequential representations (e.g., text), presentations of knowledge in networks resemble more closely the way human memory and thought is structured. Cognitive "load" in handling complex relationships is reduced with the aid of spatial representation techniques. ATLAS.ti uses networks to help represent and explore conceptual structures. Networks add a heuristic "right brain" approach to qualitative analysis.
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# What is Network View?

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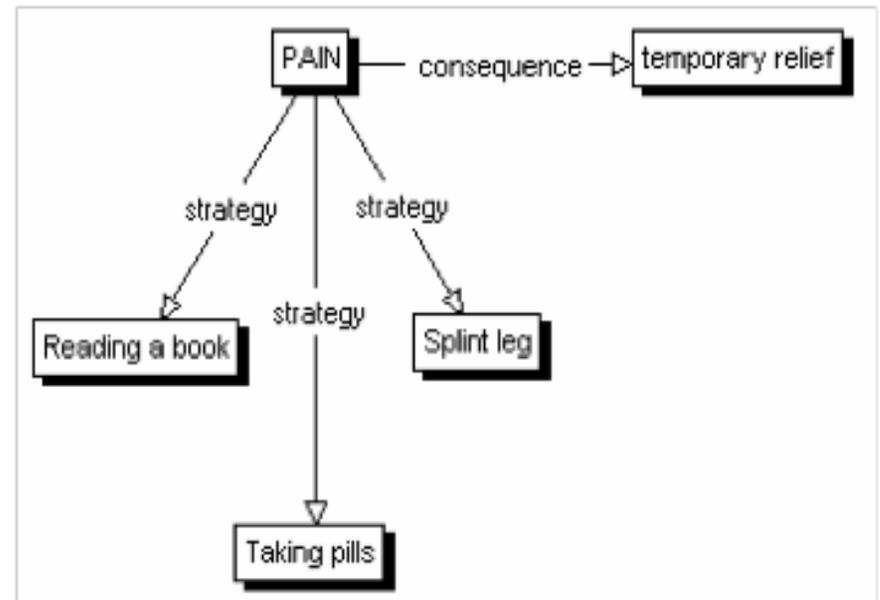
- ▶ Imagine **network view** as a *kitchen table* on which you can spread out and arrange your *notecards*
- ▶ A **network** can be created, edited, and seen, within the **Network View**
- ▶ The **nodes** of the network can be:
  - ▶ PD's
  - ▶ Codes
  - ▶ Memos
- ▶ The **links** are the relationships between the nodes
- ▶ A **relation** is a type of **link**



# A **relation** is a type of **link**

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- ▶ It is important to understand the difference between a relation (or a link type) and the link itself: There is only one "is part of" relation, but potentially many links using it. In the Network View to the right, the relation "consequence" is used only once, while the relation "strategy" is used four times.



# Relations

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1. *Transitive*: “is a cause of” (relations of causal links), “is a part of” (objects), “is a” (sub-concepts)
    - ▶ *Query Tool* – can only use transitive relations
    - ▶ Using this relation creates *parents*, and *siblings*
  2. *Symmetric* – arrow goes both ways
  3. *Asymmetric* – arrow goes one way
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- ▶ *Code-to-code relations editor* – to edit the types of relationships between codes
  - ▶ *Code Tree*
    - ▶ Code manager > miscellaneous > code tree
  - ▶ *Code Forest*
    - ▶ See all the codes and how they relate to each other



# The Role of Relations

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- ▶ 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*.
- ▶ 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."



# Network View

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- ▶ Create network view from scratch

1. Create new network

2. Import nodes you would like to include

- ▶ Method 1: Nodes > import nodes > select

- ▶ Method 2: drag objects from object managers into network manager

  - Click layout > Semantic layout > then continue to arrange objects

- ▶ Method 3: Right click on a code to open up a network view

  - If this code is already linked to another code or to a memo, then this will show up in network view

  - You can import related quotes through the dropdown right-click menu

- ▶ Changes you make in Network view (i.e. deleting, renaming, etc) are *global* in scope.

- ▶ Watch this instructional video for more information

  - ▶ <http://www.youtube.com/watch?v=caUo3zQtREU&feature=related>



# Coding Multimedia Files

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- ▶ It is possible to code multimedia files such as audio, video, and images
- ▶ In particular, you can “link” segments of audio to segments of a transcript – this can be very useful.



## Associate audio with text (in Atlas ti 6)

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- ▶ Steps
  - ▶ Assign audio as primary document
  - ▶ Go to Adocs, in main toolbar
  - ▶ Drag and drop rtf file and audio file from primary doc manager to the Association Editor
- ▶ Then create some anchors (Red dot indicates an anchor, eg association) using anchor tool
  - ▶ Use search tool to find a unique word from the audio in the text
- ▶ Then put into *synchro mode* and hopefully it will use these anchors to calibrate
- ▶ \*You can also selectively transcribe by using the anchors\*



# Copy Bundles

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- ▶ Portability and Data security

*Save all files*

- ▶ **tools > copy bundle > create copy bundle**

(your bundled file will have the extension “acb”)

*Install*

- ▶ **Tools > copy bundle > install bundle**



# Further Resources

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- ▶ Atlas.ti manual
  - ▶ <http://www.atlasti.com/manual.html>
- ▶ Online tutorials:
  - ▶ <http://www.atlasti.com/tutorials.html>

