

# Introduction to NVivo: Qualitative Coding & Text Analysis

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Digital Integration Teaching Initiative

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Class LPSYC52101 Research Methods in Psychology

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# Agenda

- What is qualitative coding?
- What is NVivo?
  - Important NVivo-specific vocabulary and functions
  - NVivo demonstration
  - Understand how to use NVivo as a research tool
  - Learn the differences between NVivo file types and why knowing this is important

# Qualitative Coding

Qualitative coding is when you create a list of themes, or a **schema**, that you want to highlight in a set of primary/secondary sources. Then, you go through all your sources and highlight particular moments from the text according to those themes.

# Getting started: Qualitative Coding with NVivo

# What is NVivo?

- NVivo is a **text analysis** and **research organization** software that is available through [Northeastern's Student Hub](#) > Resources > IT Services > Software Downloads.
- NVivo provides methods for you to annotate and code documents with user-created tags (codes), summarize and visualize these codes, and organize research materials.

# What is NVivo Useful For?

NVivo is particularly helpful for organizing and annotating research materials such as:

- **Primary sources:** any primary sources you may be analyzing such as letters, field notes, or documents from an archive
- **Secondary sources:** scholarly articles, newspaper articles, book chapters.
- **Your own notes** about your project (you can even compose in NVivo!)

# Other functions of NVivo

- Create projects that store, organize, and code documents/files
- Provide a method for you to code your documents with a user-created coding schema (codes)
- Query, summarize, organize, and visualize information about your coding
- Conduct forms of computational text analysis, like word counts, on the documents, themselves
- Conduct social network analysis with social media datasets

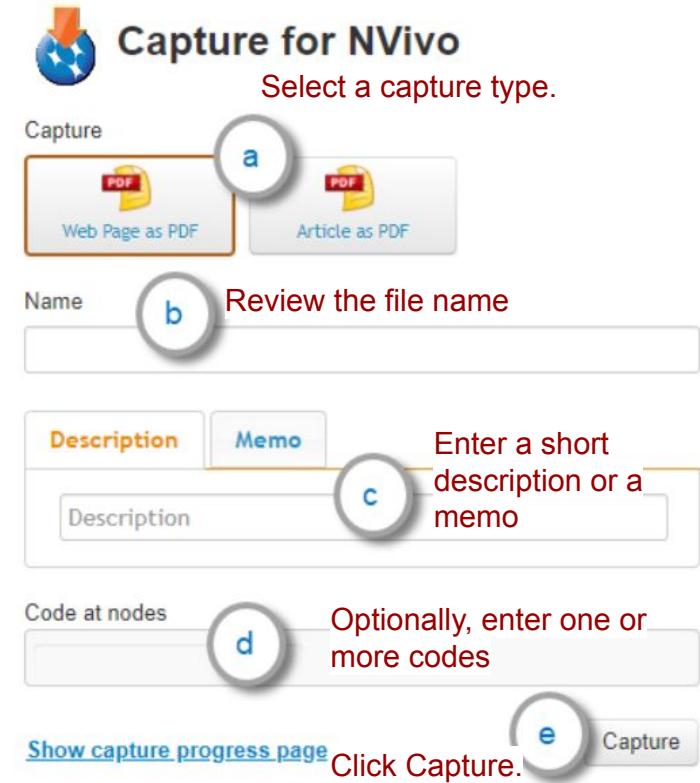
# NVivo Vocabulary

Full definitions available [on the handout](#)

- **Data:** your research documents & files
- **Codes:** the ways to annotate the themes/concepts in your research.
- **Nodes:** the themes/concepts that are user-created (NVivo 12 and older only)
- **Relationships:** coding connections between two data items
- **Cases:** units of analysis for your research.
- **Maps:** visualization tool to see connections between the cases and codes
- **Query:** a flexible way to explore and analyze your files, cases, and codes

# NCapture

- NCapture is a free Chrome extension to capture web pages, online articles, Facebook and Youtube content and add annotations, memos, and codes. The captured content is saved as an NCapture file (.nvcx) which you can import into your NVivo project.
- Please be mindful of obtaining consent for individual information you are capturing. Be aware of the current website terms and conditions when capturing data.



# Querying

Querying, or asking something from your data, in NVivo provides multiple ways to explore both your codes and your text.

- **Word Frequency:** Counts the number of times words (with stopwords removed) appear in one or more files. Stopwords have non-significant meaning and appear frequently, like “the”, “a,” “is,” etc. They can inflate word frequencies without adding meaning, and are typically removed.
- **Coding:** Shows the number of codes, text that was coded, and the files.
- **Crosstab:** cross reference codes and case classifications. For example, you might want to know how often a particular code appears in both scholarly articles and your primary texts.

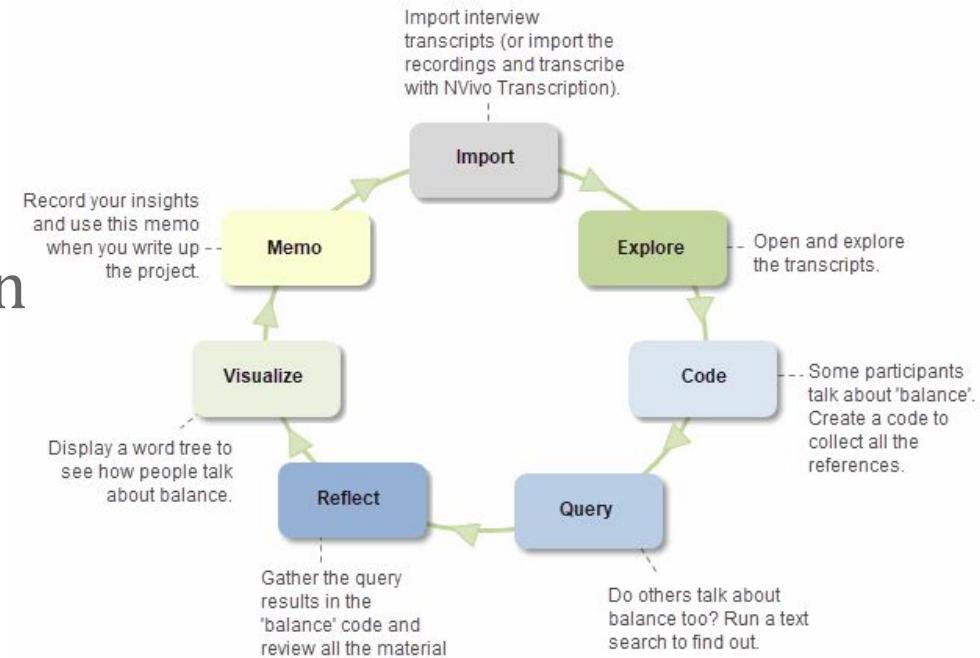
# Coding & Organizing Literature Reviews

You can import reference files from EndNote, Zotero, and other citation management tools to organize a literature review. In your citation management tool, export the library as an XML (EndNote) or RIS file (Zotero).

1. Select the XML or RIS file from your directory.
2. Choose to display references by Author and Year, or Title.
3. Select the option to assign data to the Reference classification, or to other classifications (book, journal article, etc).
4. Select the option to replace attributes or memos with file notes, abstract, and keywords.
5. Click Import.

# Making effective codes

The codes you create are themselves **arguments**; you are choosing what information you value and want to extract from the transcripts. This is often an iterative process.



Source: Lumivero - Workflow Overview

# Codes

The list of themes or codes you will use to code your files. The “codes” folder will be empty until you add your own! You can add codes and sub-codes.

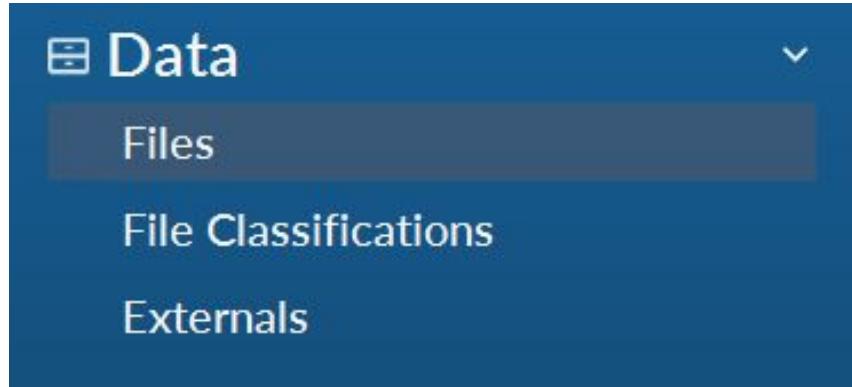
The screenshot shows a software interface for managing data and codes. On the left, a sidebar has 'Data' expanded, showing 'Files', 'File Classifications', and 'Externals'. Below that is an 'ORGANIZE' section with 'Coding' expanded, showing 'Codes', 'Auto codes', 'Melaleuca 2017 survey', 'Melaleuca 2018 survey', 'Sub-Codes', 'Sentiment', 'Relationships', and 'Relationship Types'. To the right is a main panel titled 'Coding' with a list of codes and their counts:

Code	Count	Count
mental-emotional wellb	13	54
OWN involvement	19	97
personal-individual facto	1	1
physical health	17	36
social connection	24	232
societal context	0	0
talking about ...	0	0

At the bottom of the main panel, there is a placeholder text: "Drag selection here to code to a new code".

# Data

The “Data” in NVivo are all the research materials you are using (scholarly articles, transcriptions, newspapers, research notes, etc.).



“Files” will be where you can access all the research materials you have imported into this project.

# Important Reminders

- NVivo can import all types of files, including .docx, .pdf, .doc, .csv, .png, .jpeg, .txt, video/audio files, and more.
- You should always **save** your original documents on your local computer or in cloud storage, even if these documents are imported into NVivo. NVivo can store documents, but it is more of an organization and analysis tool, rather than a storage option.

# NVivo is NOT crossplatform friendly

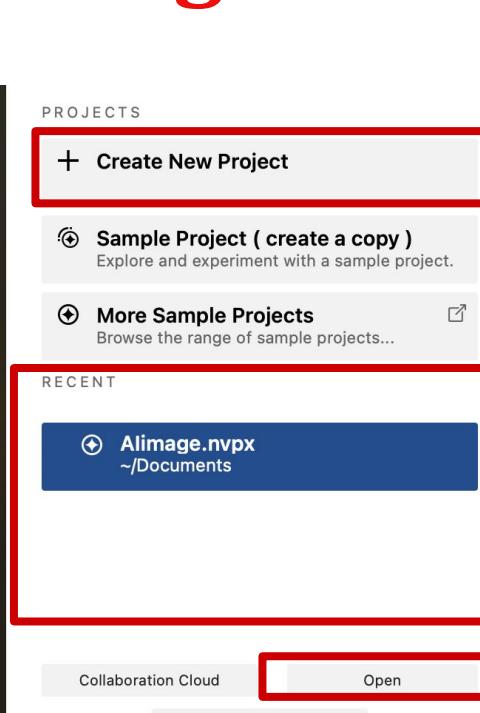
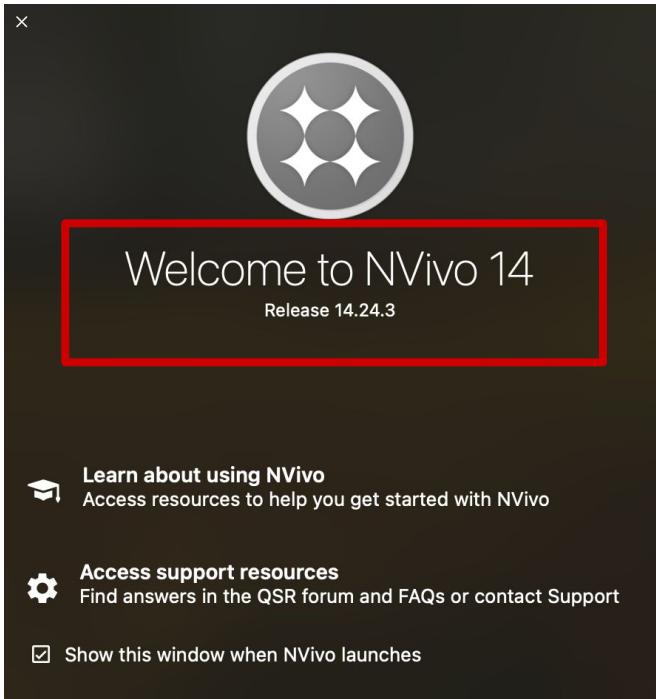
The Mac and PC versions of Nvivo—as well as the version numbers—are different and have different file types.

- Mac NVivo projects end in .npvx and can only open that file project type
- Windows NVivo projects end in .npv, but can open both .npv *and* .npvx
- Version numbers (11, 12, 14) also impact which projects can be opened on which platform

# Anatomy of Nvivo: Mac

# Anatomy of NVivo: Opening on Macs

Your version number (you should have version **12 or 14**)

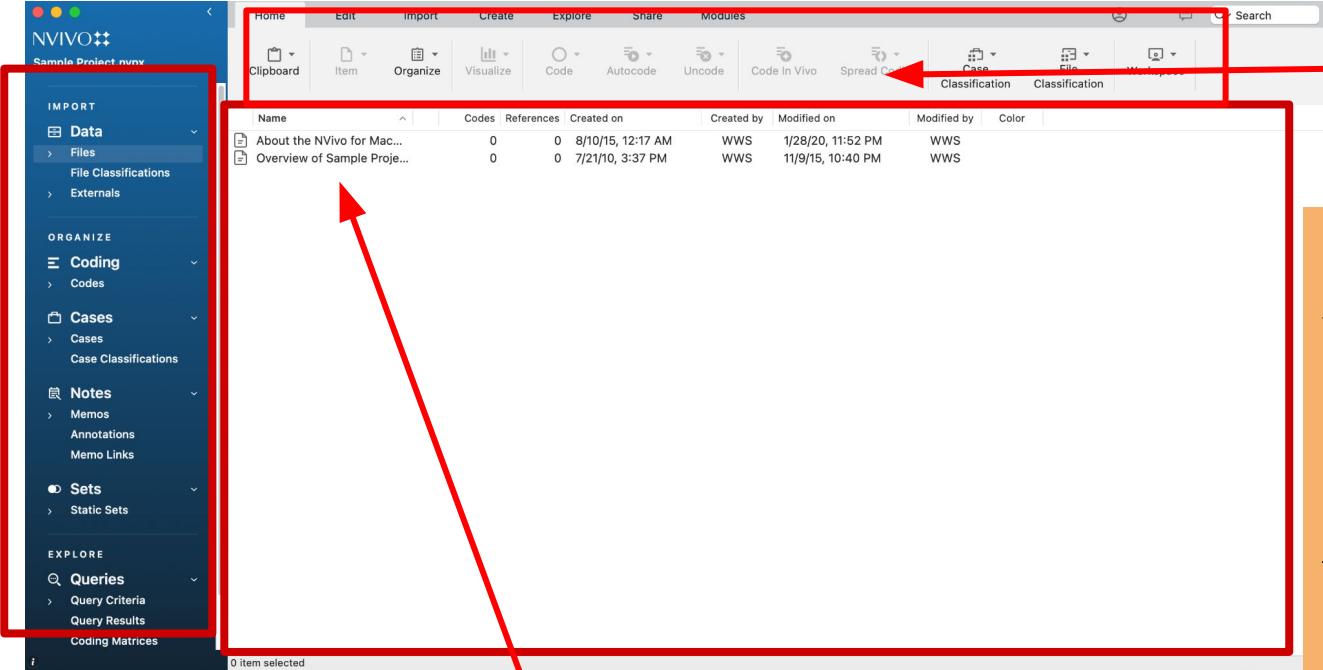


Create a new **project** (stores all your documents, codes, etc)

The recent projects you opened

Open another project that is not recent

# Anatomy of NVivo: Projects on Macs



Menu to access files, codes, cases, notes, etc.

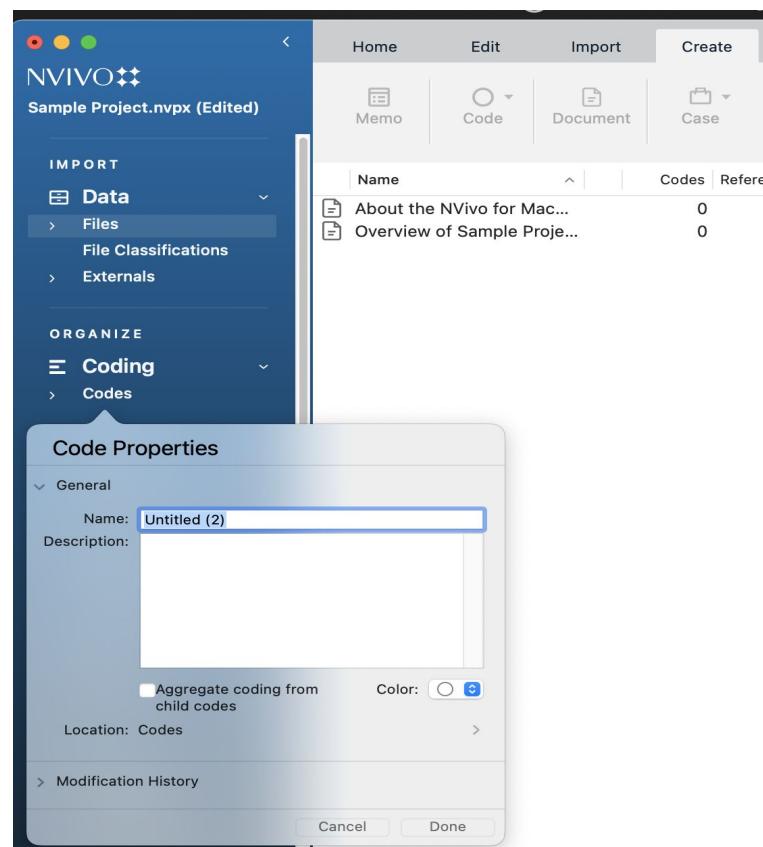
List of codes, files, etc.

Toolbar to access functions

The window that will open the files, queries, etc. You can annotate documents here.

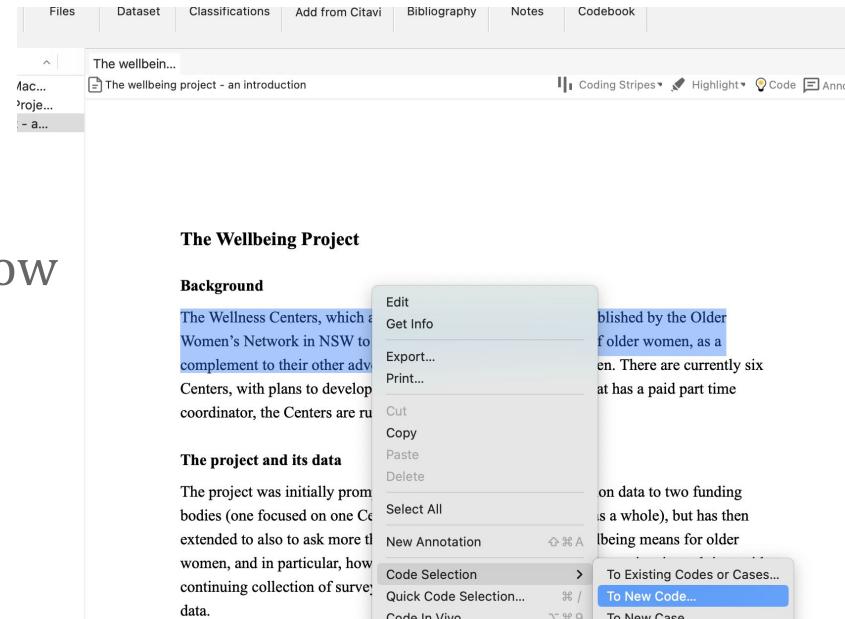
# Creating Codes (Macs)

1. Go to “Create” in the toolbar
2. Click “Code”
3. Your new code will pop up and ask for a name and description
  - a. To add a *subcode*, follow the same steps, but click on the original code where you want to add the subcode



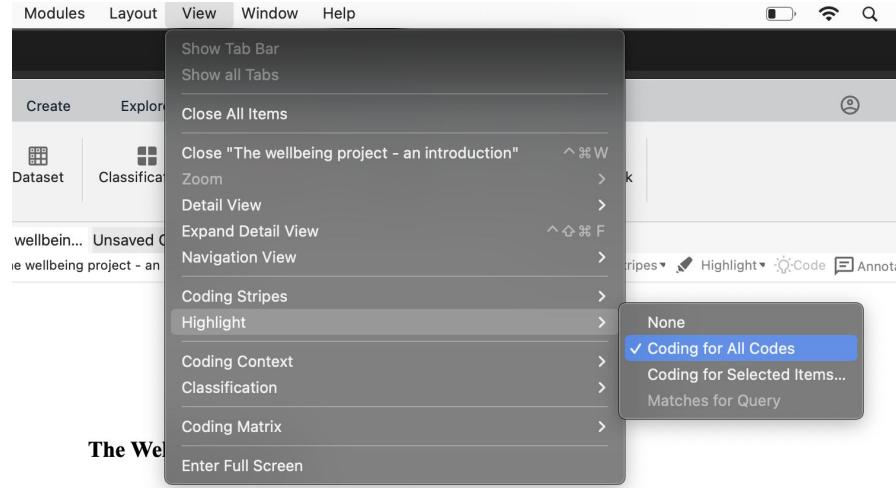
# Coding Files/Documents (Macs)

1. Open the file you would like to annotate.
2. Highlight the text you want to code.
3. Control-click and go to “Code Selection.”
4. Click “At Existing Codes or Cases”
  - a. Once you use codes, the codes will show up when you click “Code Selection.”
  - b. You can also add new codes/cases as you annotate.



# View Your Codes (Macs) 1/2

1. Go to “View” in the toolbar
2. Click “Highlight” then “Coding for All Codes”



Your document you are coding and annotation (yellow = codes, blue = annotations)

## Background

The Wellness Centers, which are the focus of this study, were established by the Older Women's Network in NSW to enhance the health and wellbeing of older women, as a complement to their other advocacy work on behalf of older women. There are currently six Centers, with plans to develop more. With the exception of one that has a paid part time coordinator, the Centers are run by volunteers.

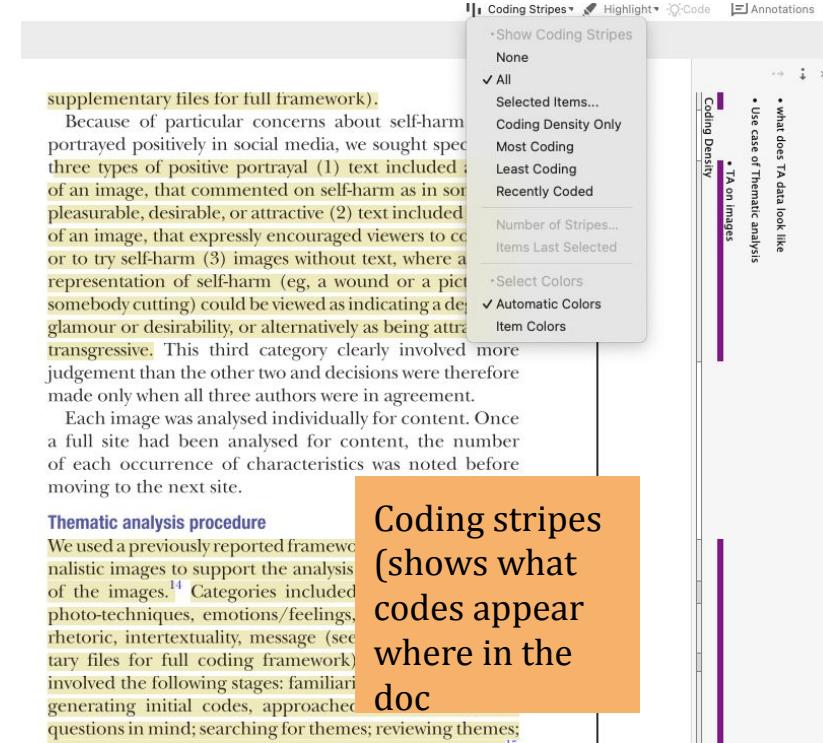
## The project and its data

The project was initially prompted by the need to provide evaluation data to two funding bodies (one focused on one Center, the other on the organization as a whole), but has then extended to also to ask more theoretical questions about what wellbeing means for older women, and in particular, how wellbeing intersects with health. The project is evolving, with continuing collection of survey data, and occasionally additional collections of interview data.

# View Your Codes (Macs)2/2

Click “Coding Stripes” and “All Coding” to see the code names and where they appear in the document.

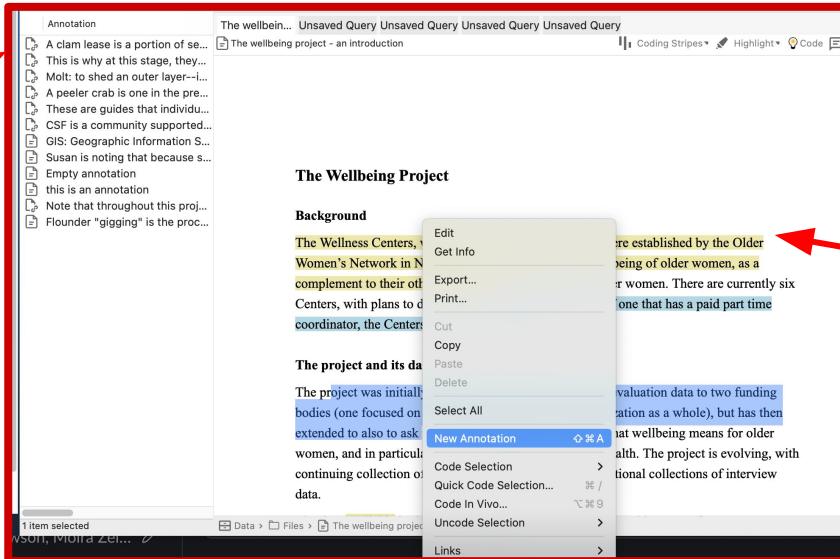
- a. If you have tagged an entire file as a “case,” everything will be highlighted. Choose “Coding for Selected Items” to select the codes you’d like to view.



# Annotating Files (Macs)

To annotate (comment), follow the same steps as coding except instead click “New Annotation” after you highlight and control-click to reach the pop-up shortcut menu. Find all your annotations in the “Notes/Annotations” section in the left menu

List of annotations



The text from the document you highlighted and annotating

# Cases (Macs)

The screenshot shows the NULab interface with a context menu open over a selected text block. The menu includes options like Edit, Get Info, Export..., Print..., Cut, Copy, Paste, Delete, Select All, New Annotation, and several options under the 'Code Selection' heading: To Existing Codes or Cases..., To New Code..., To New Case..., and To Current Codes.

The main content area displays the following text:

**The Wellbeing Project**

**Background**

The Wellness Centers, which are the focus of this study, are located in the Women's Network in NSW to enhance the health and well-being of women. They complement to their other advocacy work on behalf of women. The centers are run by volunteers, with plans to develop more. With the exception of one center, all others are run by volunteers.

**The project and its data**

The project was initially prompted by the need to provide services to two bodies (one focused on one Center, the other on the other). It has since been extended to also ask more theoretical questions about the experiences of women, and in particular, how wellbeing intersects with other factors. The continuing collection of survey data, and occasionally qualitative data.

The bottom navigation bar shows: Data > Files > The wellbeing project - an introduction

To add a “case” to a file, it’s the same method as adding a code, except you choose the “Cases” folder and the proper case.

# Word Frequency Example (Mac)

Click the word frequency tab, then select the items you would like to query in the “Selected Items” tab and then click “Run Query.”

The screenshot shows a Mac application window titled "The wellbein... Unsaved Query Unsaved Query Unsaved Query". The interface includes a search bar with "Unsaved Query" and a dropdown menu. Below it is a "Word Frequency Criteria" section with the following settings:

- Search in: **Selected Items** (highlighted with a red box)
- Finding matches:  Exact match only (e.g. "talk")  
 Include stemmed words (e.g. "talking")
- With minimum length: 3
- Display words:  All  
 1000 most frequent

A yellow banner at the bottom states: "Query results exclude project stop words. Add or remove stop words in project properties." Below this is a "Summary" tab showing a table of word frequencies:

Word	Length	Count	Weighted Percentage
older	5	2,874	1.31%
health	6	2,745	1.25%
people	6	2,356	1.08%
care	4	1,746	0.80%
doi	3	1,162	0.53%
physical	8	1,076	0.49%
age	3	1,056	0.48%
ageing	6	1,029	0.47%
activity	8	945	0.43%
http	4	860	0.39%
social	6	853	0.39%
life	4	728	0.33%
well	4	722	0.33%
org	3	700	0.32%
may	3	679	0.31%
...	...	...	...

# Crosstab Example (Mac)

Hit Explore,  
Queries, then  
Crosstab, and  
Select the codes  
you would like to  
cross reference  
with the cases or  
attributes, then  
click “Run Query.”

The screenshot shows the NULab interface with the following components highlighted:

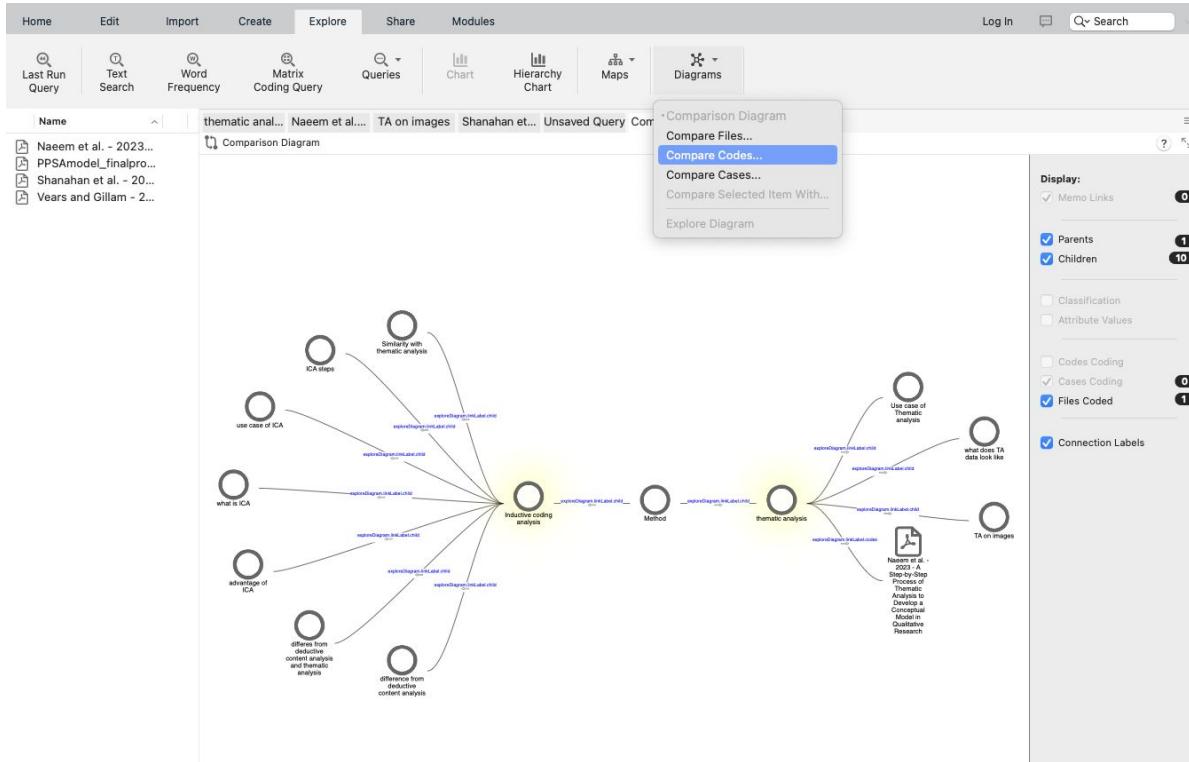
- Selected codes (click the plus sign):** A callout points to the "Codes" section on the right, which lists "Agriculture", "Fishing or aquaculture", "Jobs and cost of living", and "Tourism".
- Selected cases (click the plus sign):** A callout points to the "Attributes" section on the right, which includes "Classification: Person", "Attributes: Age Group", and "Attributes: Gender".
- Your results:** A callout points to the central crosstab table, which displays the count of cases for each combination of gender and age group across the selected codes.
- Crosstab...:** A red box highlights the "Crosstab..." button in the top navigation bar.

**Crosstab Results:**

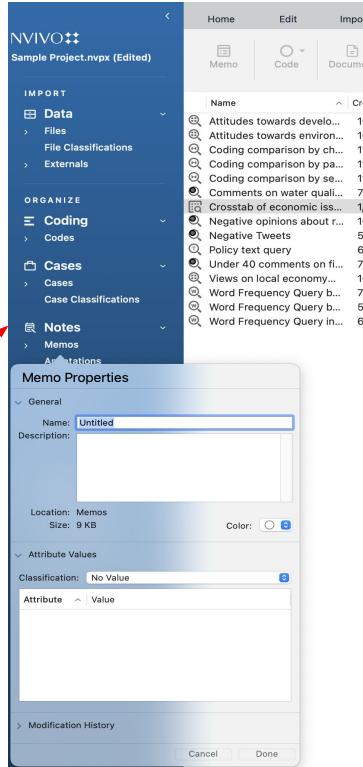
	Gender = Female (n=3)	Gender = Male (n=2)	Gender = Female (n=9)	Gender = Male (n=12)	Gender = Female (n=1)
Agriculture	0	0	1	1	0
Fishing or aquaculture	3	2	8	12	0
Jobs and cost of living	0	1	2	1	0
Tourism	0	0	1	0	0
Total (Unique)	3	2	11	13	0

# Exploring Codes (Macs)

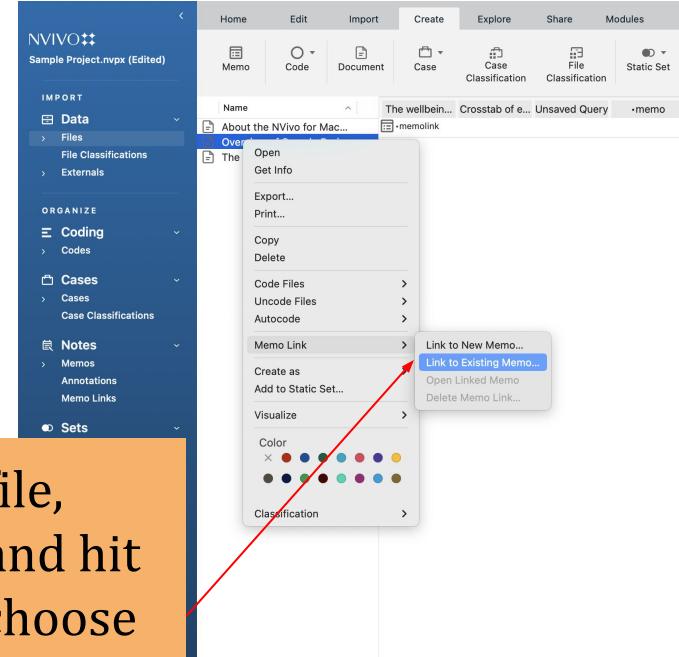
Comparison diagram example



# Memos and Memo Links (Macs)



Navigating  
memo  
creation  
(hit create,  
then  
memo)

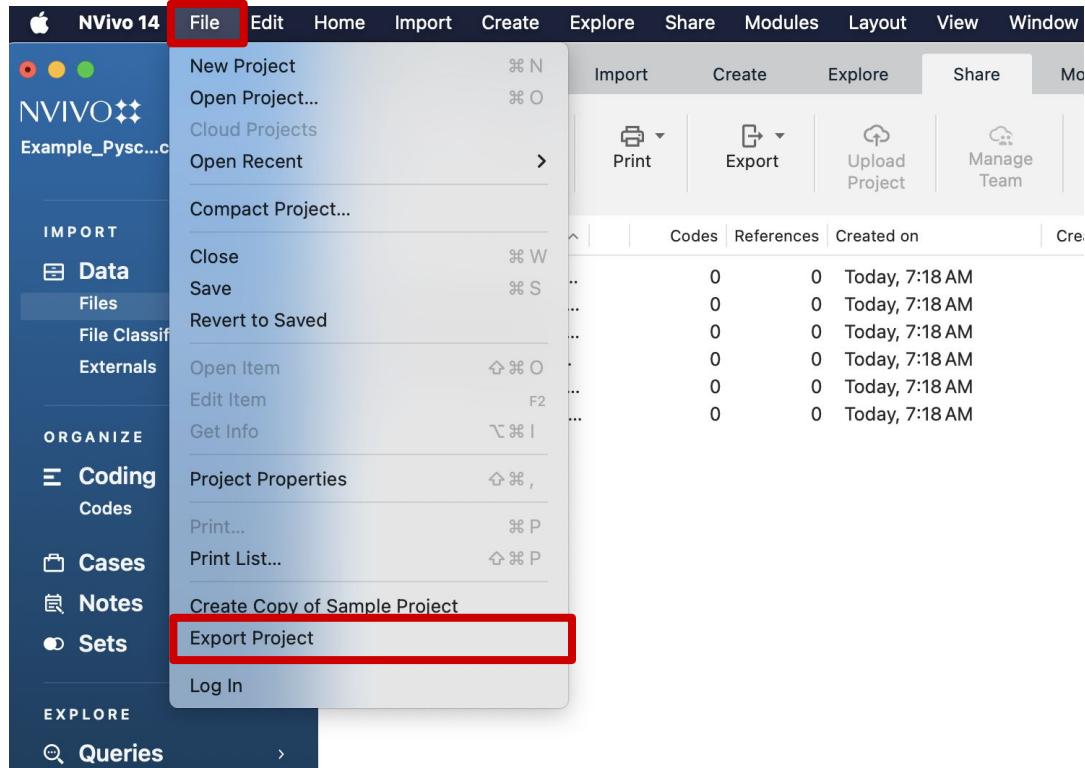


Navigate to the file,  
then right click and hit  
memo link and choose  
a new or existing  
memo

Menu  
where  
memos  
are  
located

# Exporting Your Project

Since there is a cross-platform problem, save and export your projects as **.qdpx** files when submitting assignments so they can be opened on both Macs and Windows!

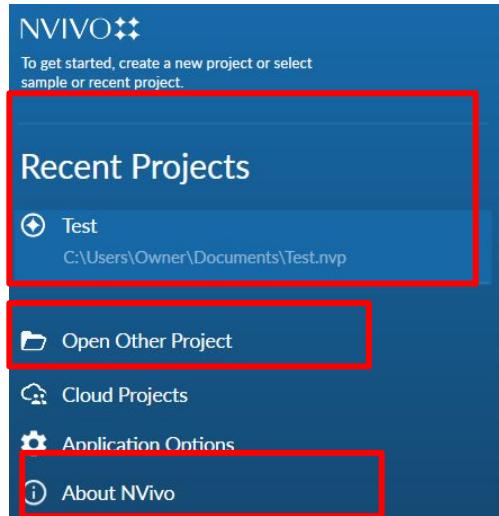


# Anatomy of Nvivo: Windows

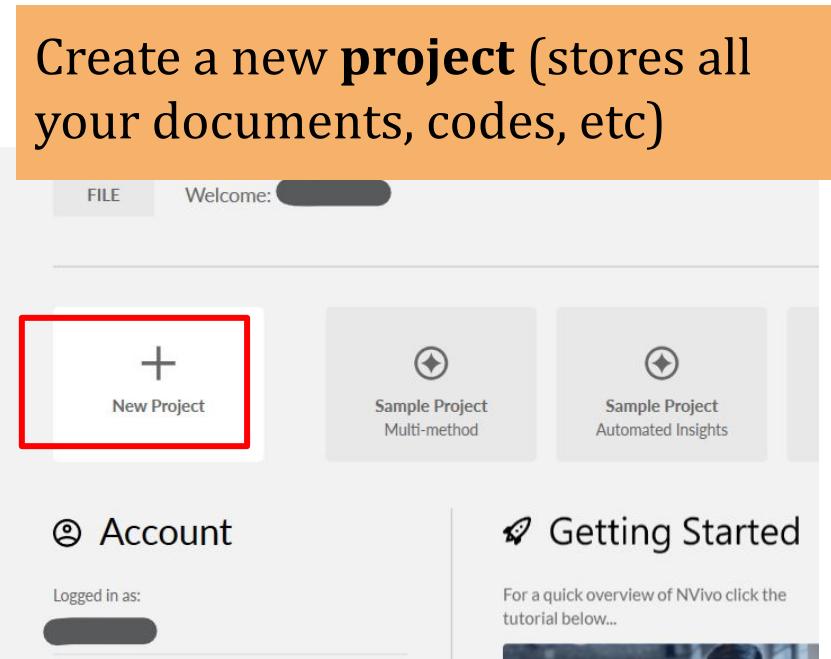
# Anatomy of NVivo: Opening on Windows

The recent projects you opened

Open another project that is not recent



Create a new **project** (stores all your documents, codes, etc)



Your version number (you should have version **12 or 14**)

# Anatomy of NVivo: Projects on Windows

Toolbar to access functions

The screenshot displays the NVivo software interface on a Windows system. At the top is a toolbar with various icons for functions like Annotations, Autocode, Chart, and New Annotation. Below the toolbar is a menu bar with File, Home, Import, Create, Explore, Share, Modules, Document, and Help. The main window is divided into several panes. On the left is a sidebar with sections for Quick Access, IMPORT (Data, Files, File Classifications, Externals), ORGANIZE (Coding, Sentiment, Relationships, Relationship Types), EXPLORE (Cases, Notes, Sets), and REPORTS (Queries, Visualizations, Reports). The central area shows a list of files under 'FILES' with one item selected: 'The wellbeing project - an introduction'. To the right of the file list is a detailed view of the selected document, titled 'The Wellbeing Project' with a 'Background' section containing text about the project's purpose and participants. At the bottom of the interface are status bars for 'Codes' (1 Item), 'References' (0), 'Read-Only', 'Line: 1 Column: 0', and a zoom level of '100%'. A red box highlights the 'FILES' pane, and another red box highlights the toolbar.

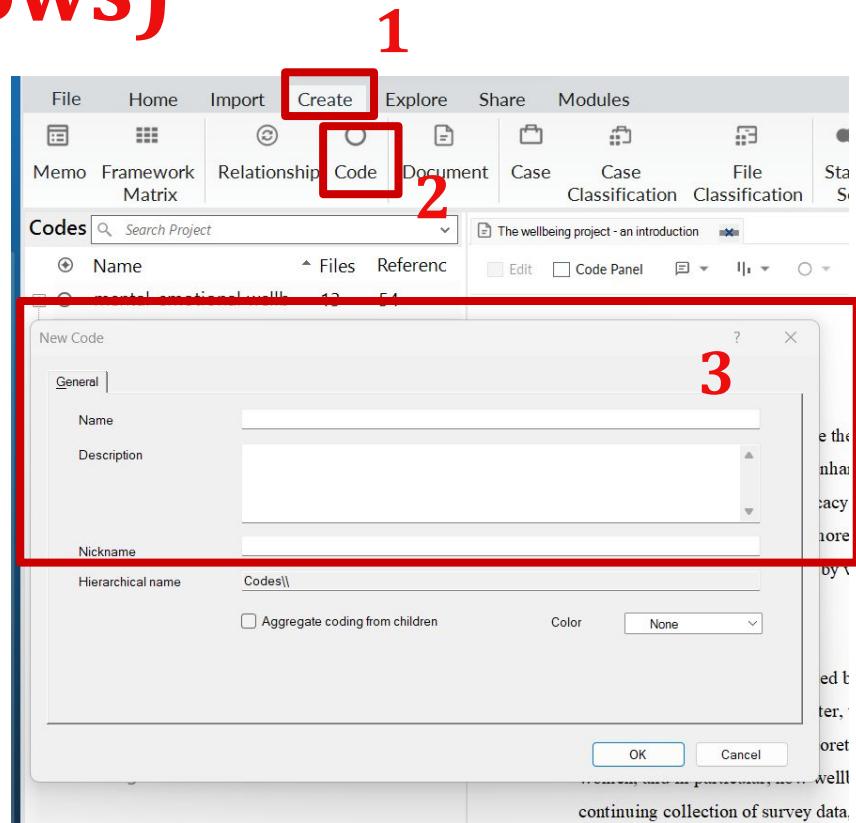
Menu to access files, codes, cases, notes, etc.

List of codes, files, etc.

The window that will open the files, queries, etc. You can annotate documents here.

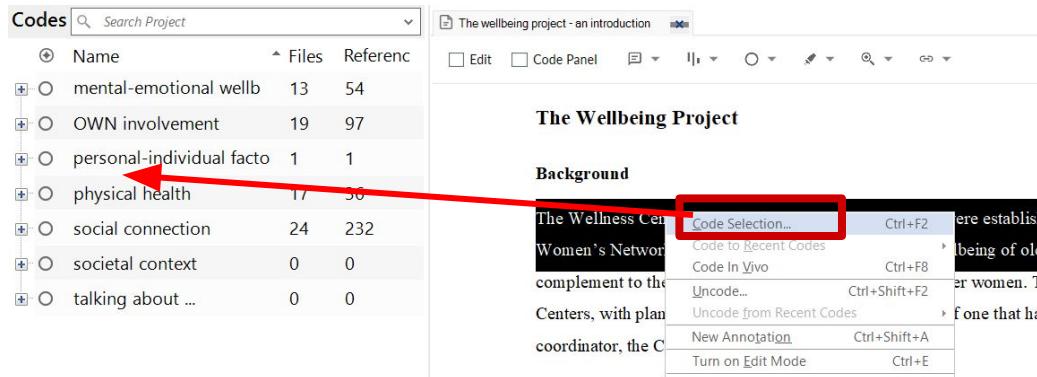
# Creating Codes (Windows)

1. Go to “Create” in the toolbar
2. Click “Code”
3. Your new code will pop up and ask for a name and description
  - a. To add a *subcode*, follow the same steps, but click on the original code where you want to add the subcode



# Coding Files/Documents (Windows)

1. Open the file you would like to annotate.
2. Highlight the text you want to code.
3. Drag and drop the selection onto a code.
4. Alternatively, you can right-click and select “Code.”
5. You can also add new codes/cases as you annotate.



# View Your Codes (Windows)

1. Go to “Document” in the toolbar
2. Click “Highlight” then “All Coding”
3. Click “Coding Stripes” and “All Coding” to see the code names and where they appear in the document.
  - a. If you have tagged an entire file as a “case,” everything will be highlighted. Choose “Coding for Selected Items” to select which codes you’d like to view.

# View Your Codes Screenshots (Windows)

The screenshot shows the NULab interface for Windows. The top navigation bar includes File, Home, Import, Create, Explore, Share, Modules, and a 'Code' tab which is highlighted with a red box and the number 1. Below the 'Code' tab is a dropdown menu labeled 'Coding Stripes' with the number 2. The dropdown menu lists several options: None, All (which is selected and highlighted with a red box), Selected Items..., Coding Density Only, Number of Stripes..., Items Last Selected, Select Colors, Automatic Colors (which is also selected and highlighted with a red box), Item Colors, Group by Color, and Shadow Coding. To the right of the dropdown menu, there is a text area containing a transcription of a conversation. A red box highlights this text area, and the number 3 is placed next to the bottom-left corner of the dropdown menu.

Coding stripes  
(shows what codes appear where in the doc)

This screenshot shows the 'CODE STRIPES' panel in the NULab interface. The panel has tabs for Summary, Reference, Text, PDF, and Dataset. The 'Text' tab is active. It displays a list of codes with colored vertical bars representing their presence in the document. The codes listed are: motivation purpose (blue), Correa V (green), physical health (orange), wellbeing (purple), widowhood (grey), interrelation H & WB (pink), and OWN involvement (yellow). The number 4 is placed to the left of the panel.

The document you are coding and annotations

# Annotating Files (Windows)

To annotate (comment), follow the same steps as coding except instead click “New Annotation” after you highlight and right click. Find all your annotations in the “Notes/Annotations” section in the left menu

The screenshot shows the NULab software interface. On the left, there's a sidebar with various navigation options like Quick Access, File Classifications, Externals, Coding (Codes, Auto codes, Melaleuca 2017 survey, Melaleuca 2018 survey, Sub-Codes, Sentiment, Relationships, Relationship Types), Cases, Notes, Memos, Framework Matrices, Annotations, and See-Also Links. The 'Annotations' option is highlighted with a red box. A large orange callout box labeled 'List of annotations' points to this sidebar area. In the main workspace, there's a list of annotations under 'Annotations' with a red box around it. One annotation is selected, showing its content in a larger box: "L: Particular experience – there's so many capable women in the community, in the society. They are all very, how do you put it, dedicated. Like this Wellness, in the committee, people are so dedicated, you know, moneywise as well timewise especially. We are all volunteers, so I really admire women, especially older women, for what they do." Another annotation below it says "P: And making use of what they've got". A red box highlights this second annotation. A third annotation is partially visible at the bottom. A large orange callout box labeled 'Your annotation' points to the bottom annotation. To the right, another orange callout box labeled 'The text from the document you highlighted and are annotating' points to the annotated text in the main workspace.

Annotations

File Name Number

- Acacia L 1
- Melaleuca 2017 survey 1
- Melaleuca 2017 survey 2
- Stathi et al AVONet-report 1
- Waratah G - Pre 1
- Ward et al Well Being in 1

L: Particular experience – there's so many capable women in the community, in the society. They are all very, how do you put it, dedicated. Like this Wellness, in the committee, people are so dedicated, you know, moneywise as well timewise especially. We are all volunteers, so I really admire women, especially older women, for what they do.

P: And making use of what they've got.

L: Yes exactly, exactly, really you know. Really I'm happy, you know, about this Wellness. We should really, you know, continue on for the younger women, Yes.

Annotations

Item	Content
1	This (and the next) paragraph are referring to the centre rather than the concept

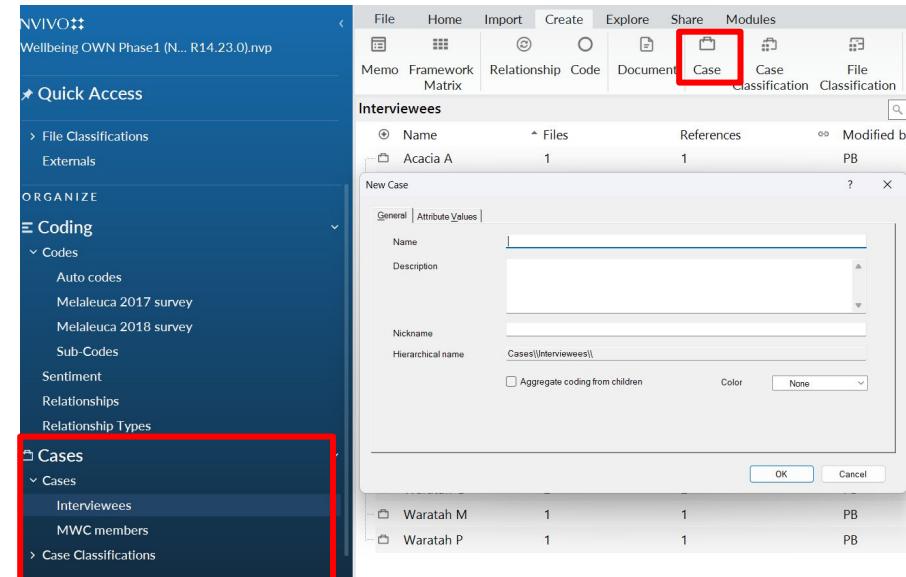


# Cases (Windows)

Cases are the types of research texts in your project and can be organized based on the user's choice. **“They might represent people, places, events, organizations or other entities that you want to analyze and compare.”** For example, if you have several transcripts from different trials, but want to categorize the type of trial for each text, you would use cases to do so.

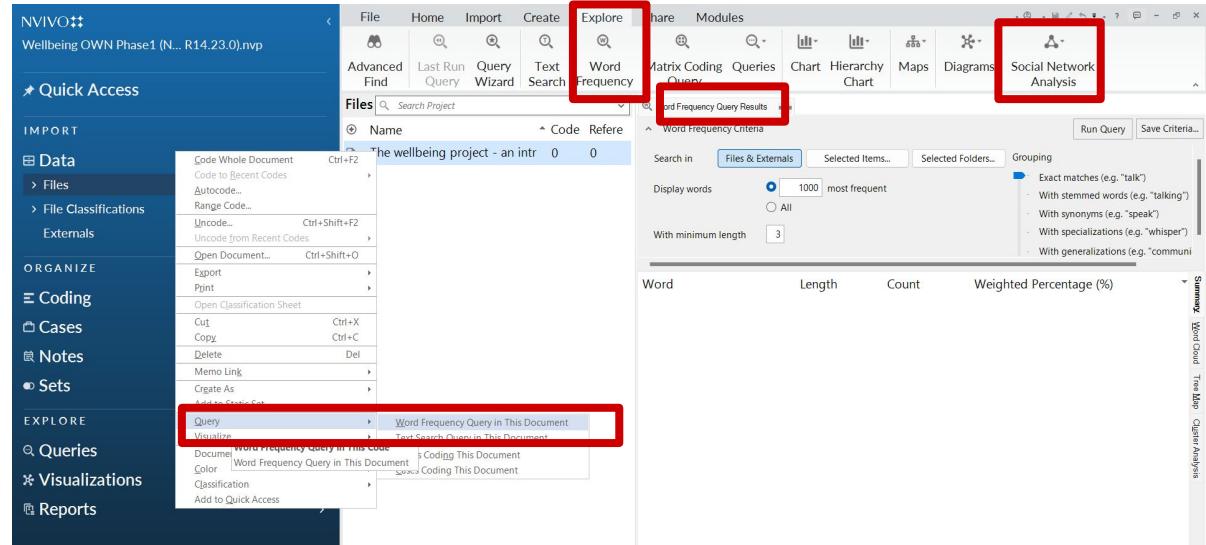
## “About Cases”, NVivo

To add a “case” to a file, it’s the same method as adding a code, except you choose the “Cases” folder and the proper case.



# Word Frequency Example (Windows)

- “Query” can be found in the “Explore” Tab
- Alternatively, you can right click on a file and select Query
- To query multiple items, select the items you would like to query in the “Selected Items” tab and then click “Run Query”



# Crosstab Example (Windows)

Select the codes you would like to cross reference with the cases or attributes, then click “Run Query.”

Selected codes (click the plus sign)

Selected cases (click the plus sign)

Your results

	mental-emotional wellbeing	Total
Acacia A	2	2
Acacia B	0	0
Acacia L	1	1
Acacia V	0	0
Correa C	2	2
Correa P	0	0
Total	5	5

# Exploring Codes (Windows)

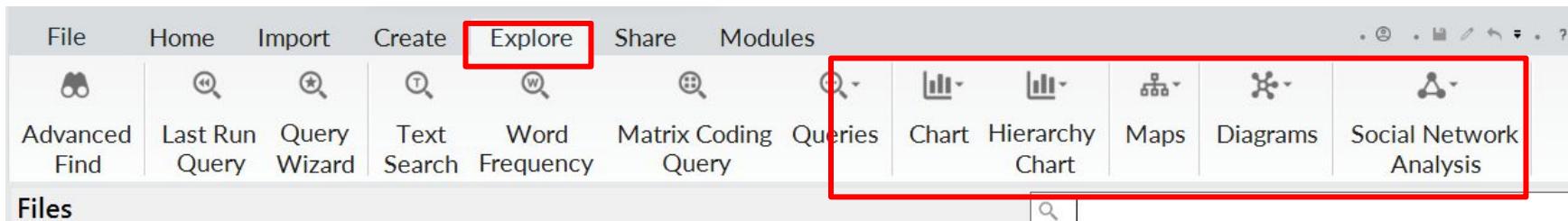
Chart: bar chart of the number of times codes were used in a file

Hierarchy chart: visualizes number of codes used in a file

Explore Diagram: explore the codes used in a file

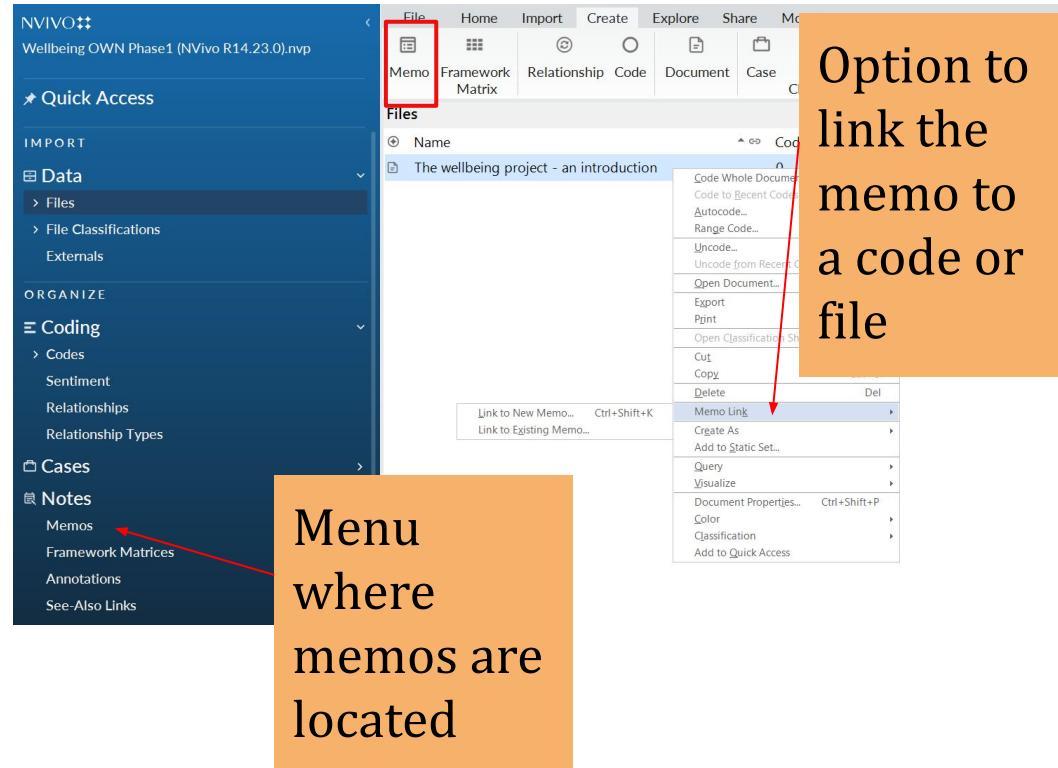
Comparison Diagram: compare the codes used in multiple files

Social Network Analysis: visualize relationships within networks



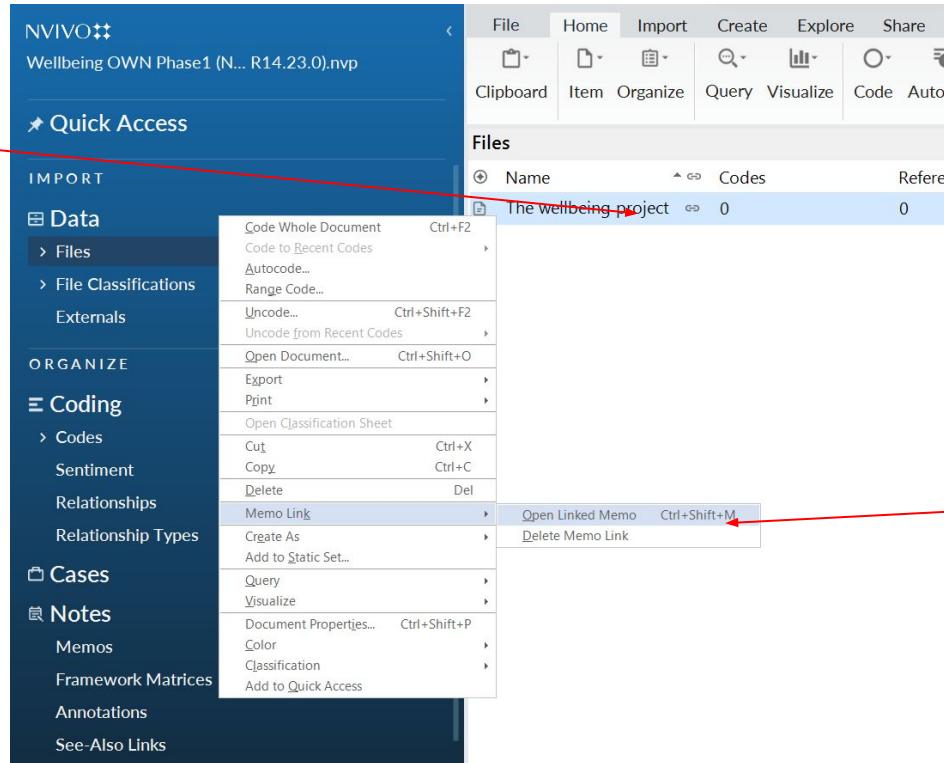
# Memos (Windows)

- Memos are more extended write-ups of your analytical insights
- They can stand alone, but also be linked
- “Memo link”: linking memo to a particular file, case, or code



# Memo Links (Windows)

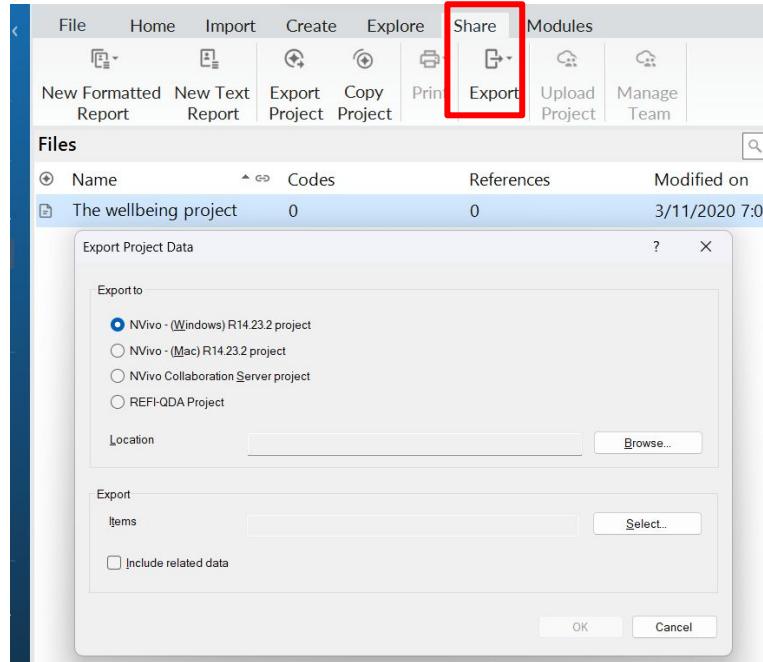
Showing the link between the file and the memo



Accessing the memo from the file

# Exporting Your Project (Windows)

Since there is a cross-platform problem, **save and export your projects as .qdpx files** when submitting assignments so they can be opened on both Macs and Windows!



# Further Learning & Practice

# Qualitative Coding practice

Read "Men and healthy eating' dataset" and "Childfree"

- Come up with three themes you might want to highlight from this text; these themes should be about 1-3 words (ex: "extended family")
- Underline the moments in the passage that reflect these themes.
- Try to recreate this schema in NVivo!

# Ethical Considerations

- **Contextual Privacy**
  - When we think about privacy online we want to think of it as contextual. What someone might be comfortable saying in one context might not be something they're okay saying to a researcher.
- **Keeping People Safe**
  - It is risky to publicize the username, profile picture, or exact text of a social media post or profile.
  - To show example posts etc, you can make up your own or heavily redact them.

What information would you be comfortable sharing?

# Learning Resources

- [Handout: Data Privacy](#)
- [Handout: Data Ethics](#)
- [Handout: Installing NVivo](#)
- [Handout: NVivo](#)

# Thank you!

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