

Introduction to Nvivo: Qualitative Coding for Text Analysis

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CRIM 3600 Research Methods
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Fall 2020



Northeastern University
NULab for Texts, Maps, and Networks

*Feel free to ask questions at any point
during the presentation!*

Activity: Highlighting Themes

With a partner:

- read the sample transcript excerpt on your handouts
- come up with three themes you might want to highlight from this text; these themes should be about 1-3 words (ex: expenses, resource access)
- underline the moments in the passage that reflect these themes

We will then have a discussion about what themes you highlighted and why.



Workshop Agenda

- Workshop objectives
- Qualitative Coding: annotating and highlighting sources
- What is NVivo?
- Important vocabulary and functions
- NVivo demonstration
- Hands-on activity

Slides & handouts at http://bit.ly/diti_fall2020-marshall3



Workshop Objectives

- Define qualitative coding and why it can be useful while doing research
- Understand what NVivo is as a research tool and what it can do
- Learn important NVivo-specific vocabulary to aid independent research



Qualitative Coding

In our beginning activity, we practiced a form of **qualitative coding** together.

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



Coding in practice

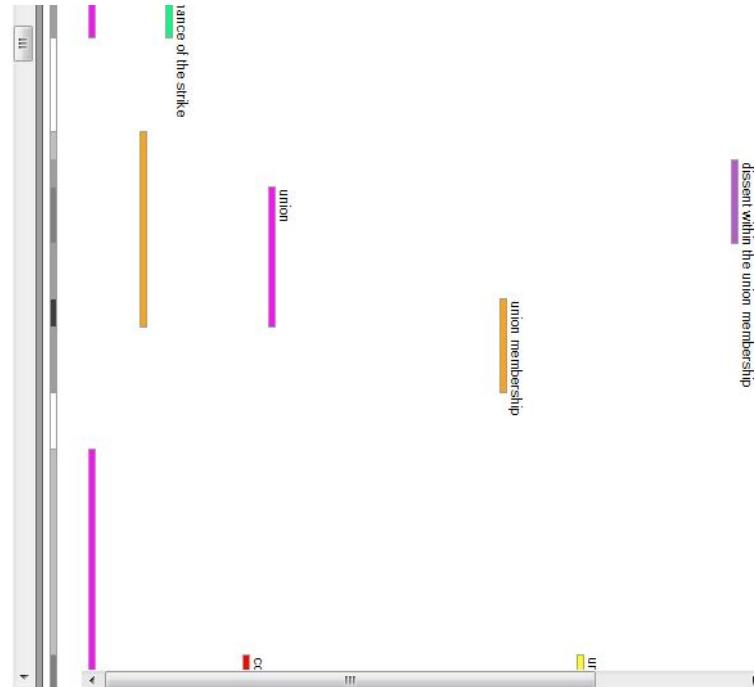
key, at that point.

M: Sure sure, so I did not understand, what was the comparison with other five, with other locals, did they have more issues or less, or did they also have that similar experiences like you, across all those different locals [26]

R1: They had, you know, similar experiences that I did. Very strong, present, you know, walking. I didnt see hear, early on, anyways for the initial, when we pulled them that day, the Thursday, that anyone was saying "I'm not going". Didn't hear that from anybody. Didn't hear it from my local, didnt hear it, you know because all the locals have facebook pages too. You know, they have, social pages, so you can also keep in touch that way, and, you know, between reading and [unclear], you know talking to [unclear] and stuff like that, we were hearing nothing but positive feedback, on on, people walking. People were ready. They were angry, with the contract that was being presented, and they were ready, they were ready to take it, to go to the sidewalk [27] so to speak. And then, and to state their point, yep.

M: Can I maybe ask you yes, related to that anger, like, how did people, hm how to say, how did they precisely rationalize their anger, or, how did they justify their anger. What did they say, who, or how did they understand, why that injustice was being done to them. How did they understand why the managers at all decided to offer them such a bad contract, how did they think about that anger?

R1: Sure. So, with that, when we, when we, with Tim, we met earlier, weeks earlier to, so, we met up in [unclear], Tim brought as many - you know, every, its open invitation, to any local member of Stop&Shop, to come to this, rather large gathering of people [28] where he broke down the contract. So, not only if you couldn't make, these contract breakdowns came back to the store, and were handed out to, individuals to read, and were posted on the union board. So,



What is NVivo?

NVivo is a **text analysis and research organization** software that is available through MyNU. NVivo provides methods for you to annotate and code documents using user-created tags (nodes/codes), summarize and visualize these codes, and organize research materials.

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

- secondary sources: scholarly articles you read for the literature review, newspaper articles, book chapters.
- primary sources: any primary sources you may be analyzing such as interview transcripts, texts, or field notes
- your own notes about your project (you can even compose in NVivo)



What can NVivo do?

NVivo is designed for qualitative coding research materials, such as survey results, interviews, audio recording, text documents, articles, and other data formats. It also has other functions:

- create projects that store, organize, and code documents/files
- provide a method for you to code your documents with a user-created coding schema (nodes)
- query, summarize, organize, and visualize information about your coding
- conduct forms of computational text analysis, like word counts, on the documents themselves



NVivo for Annotating & Coding Research

With NVivo, you can store and organize your **primary** and **secondary** sources together (most file types work, including images). You can also separate your different types of research materials. For this project, your research materials are your interview transcriptions.

NVivo also allows you to **annotate** texts and use **qualitative coding** methods to highlight specific texts/images/pieces under themes.

Then you can **summarize** and **visualize** these annotations and codes.



NVivo is NOT cross-platform 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 (10, 11, 12) also impact which projects can be opened on which platform

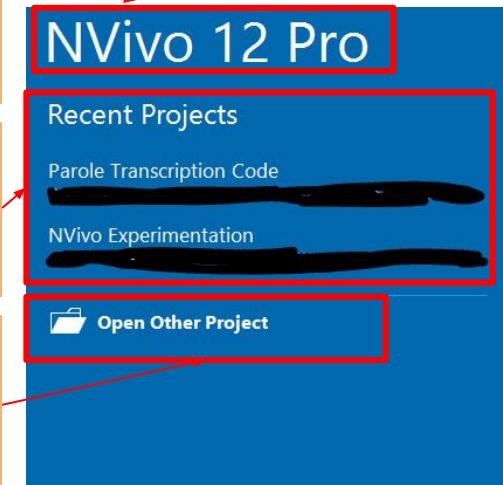


Anatomy of NVivo: Opening on Windows

Your version number (you should have version **11** or **12**)

The recent projects you opened

Open another project that is not recent



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



Learn and Connect

Research Ready

to be best in any point of view.
Research search for, not examine into facts or principles.

Get your research ready for NVivo

Getting Started



NVivo quick steps tutorial

Customer Success Center

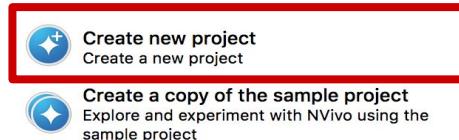
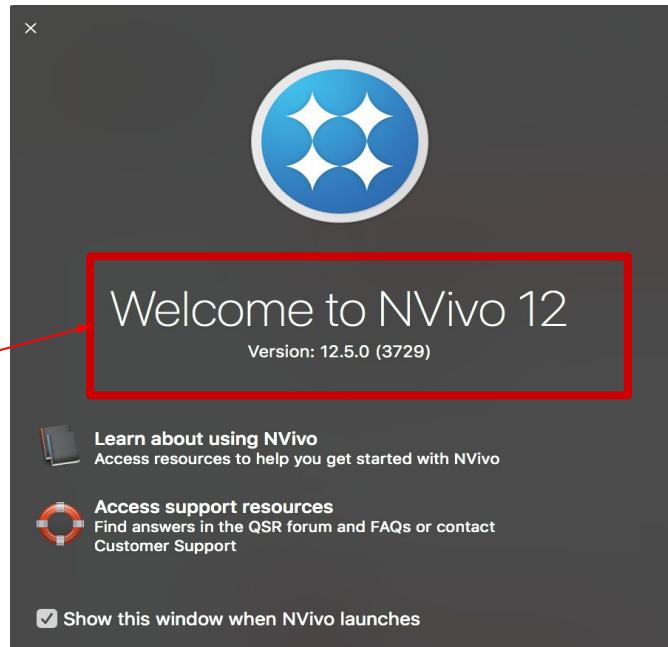


Courses, resources & support

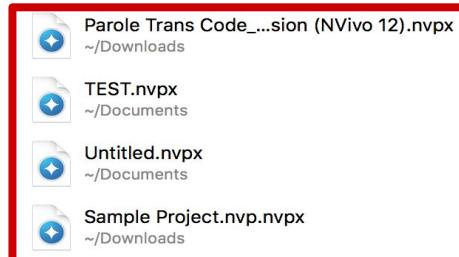


Anatomy of NVivo: Opening on Macs

Your version number (you should have version **11** or **12**)



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



The recent projects you opened



Open another project that is not recent



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Anatomy of NVivo: Projects on Windows

Toolbar to access functions

The screenshot shows the NVivo 12 Pro application window. At the top is a toolbar with various icons for file operations like Import, Create, Explore, Share, and properties. Below the toolbar is a menu bar with File, Home, Import, Create, Explore, Share, and a large separator line. To the left is a vertical navigation pane with sections for Quick Access (Files, Memos, Nodes), Data (Files, File Classifications, External), Codes (Codes, Nodes, Relationships, Relationship Types), Cases (Cases, Case Classifications), Notes, Search, Maps, and Output. The main workspace contains a 'Files' view table and a detailed transcription view. The transcription view shows a document with several paragraphs of text from Michael Amann (Reasons) and annotations.

Name	Codes	References
Alman_Reasons Transcription	0	0
Angel Rivera 2	0	0
Antonio P. Codebook	19	20
Ayala 2005 Transcript	15	15
Ayala 2005 Transcript Kelly	33	54
Ayala 2010 Transcript	21	23
Ayala 2010 Transcript Kelly	31	71
Clements 2011 Codebook	26	30
Clements 2011 Transcript Kelly	67	168
Clements 2013 Codebook	25	28
Clements 2013 Transcript Kelly	41	100
Don 5 Codebook	31	36
FERRER Codebook	54	66
Ferrer parole hearing 2008 shared FINAL	55	189
Gerald Hill Codebook	16	16
gibney	0	0
Gibney Gabriel	0	0
Hill 2012 Codebook	27	28
Hill 2012 TRANS Tashila	7	7
Jose Robles	0	0
Mendoza Codebook	23	26
MENDOZA parole hearing transcript shared FINAL	43	109
Mongo 2011 Codebook	18	23
Mongo 2011 Transcript Kelly	51	141
Montero Codebook	24	27
Montero parole hearing transcript shared FINAL	48	124
Noonan 2007 Codebook	25	27
Noonan 2007 Transcript Kelly	78	287
Pope 2011 Codebook	25	27
Pope 2011 Transcript Kelly	0	0
Ralph Geary	0	0
Rambert 2013 Transcript Stuti	81	356
Rambert 2013 Transcript Stuti (2)	0	0
Robin Murphy	0	0

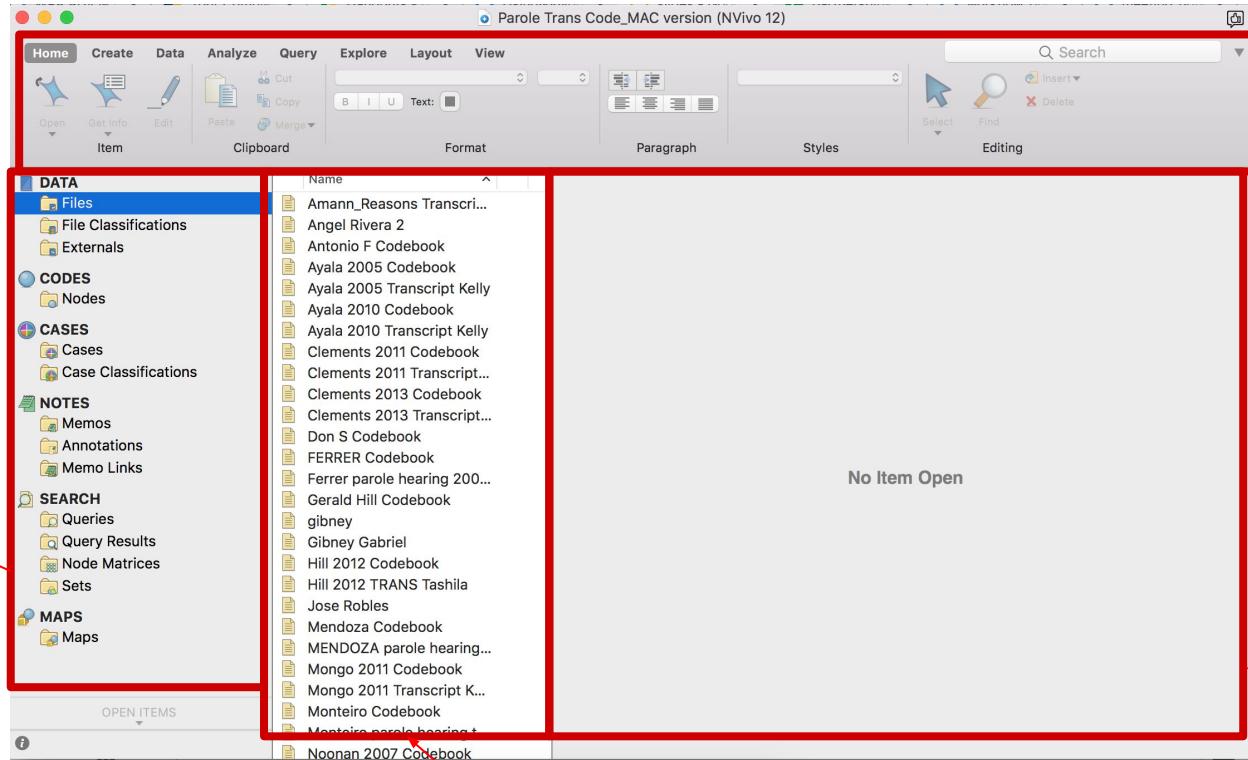
List of nodes, files, etc.

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

Feel free to ask questions at any point during the presentation!



Anatomy of NVivo: Projects on Macs



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

Toolbar to access functions

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

List of nodes, files, etc.

Feel free to ask questions at any point during the presentation!



NVivo Vocabulary

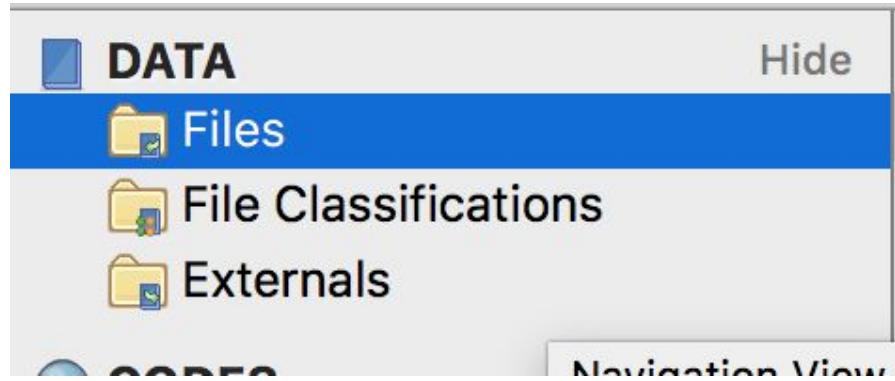
Full definitions available on the handout

- **Data:** your research documents & files
- **Codes:** the method to annotate the themes/concepts
- **Nodes:** the actual themes/concepts that you create
- **Relationships:** coding connections between two data items
- **Cases:** units of analysis for your research.
- **Maps:** visualization tool to see connections between the cases and nodes
- **Query:** a flexible way to explore and analyze your files, cases, and nodes



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

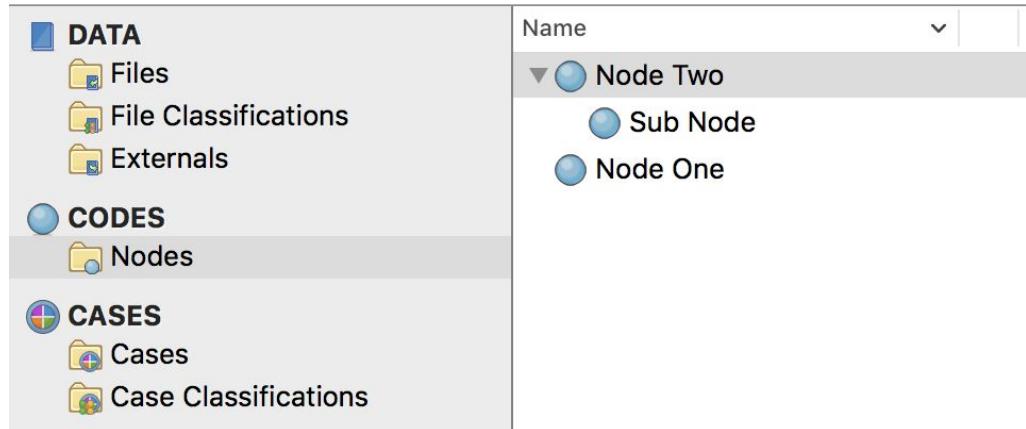
NVivo can import all types of files, including .docx, .pdf, .doc, .csv, .png, .jpeg, .txt, video/audio files, and more.

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.



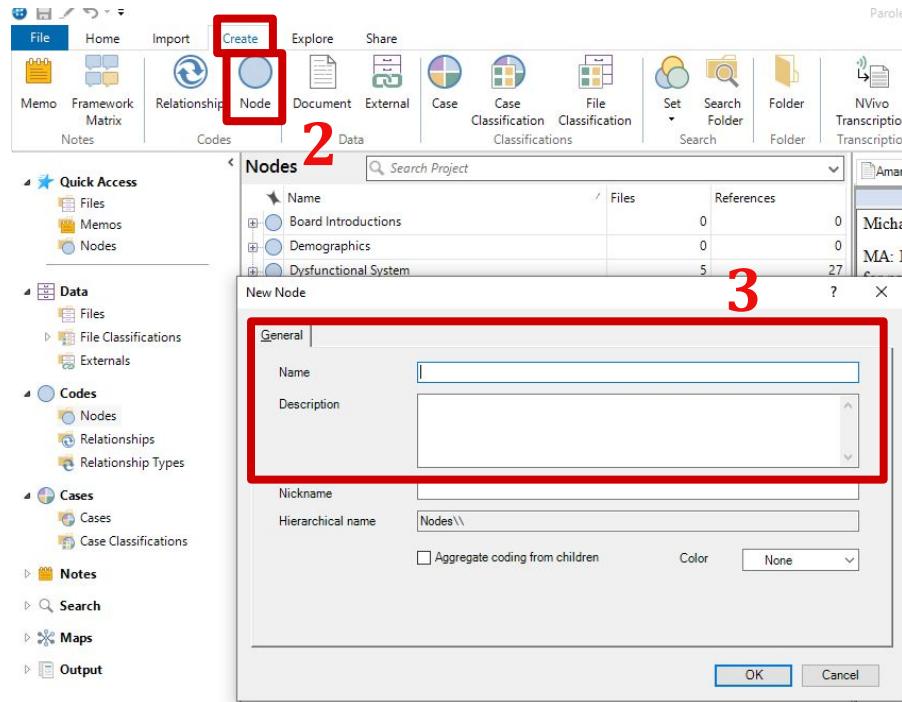
Codes and Nodes

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



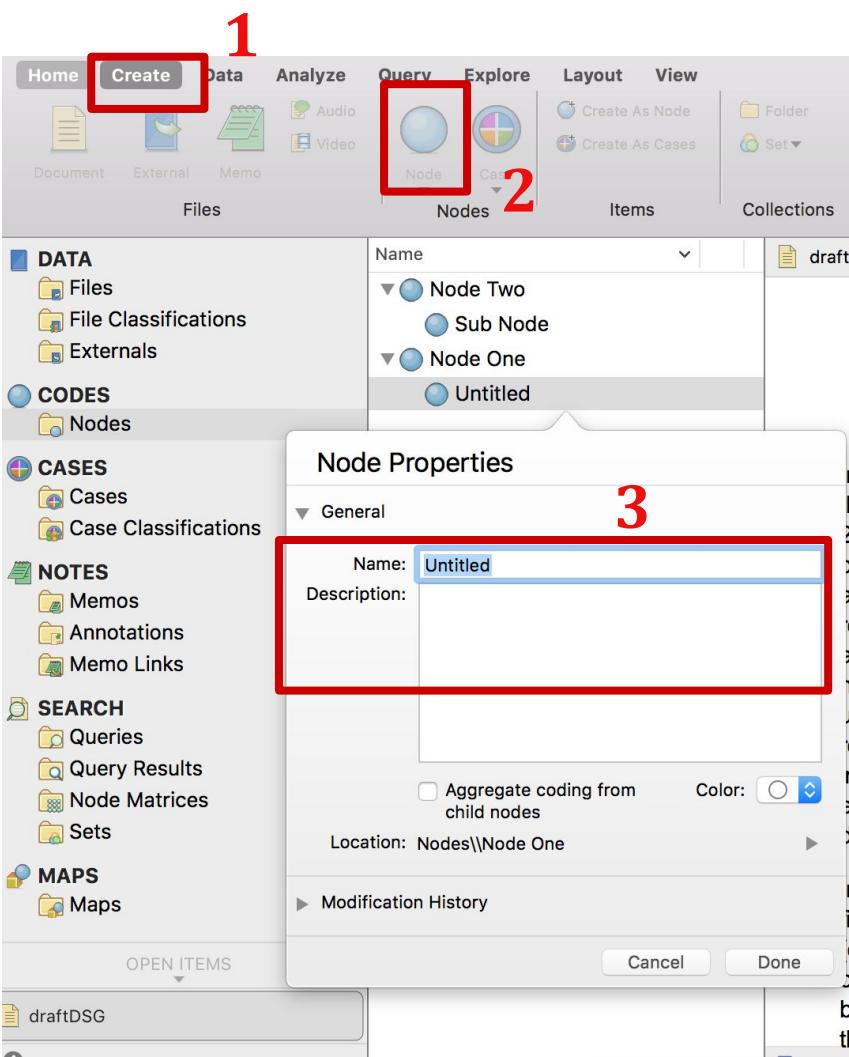
Creating Nodes (Windows) 1

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



Creating Nodes (Macs)

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



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 node
4. Alternatively, you can Command/Control+click and select “Code”
5. You can also add new nodes/cases as you annotate

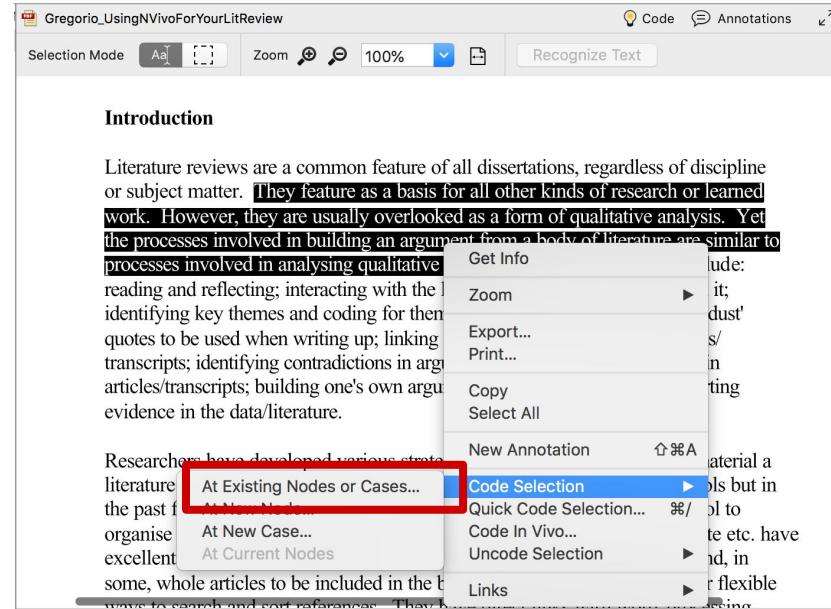
The screenshot shows the NVivo interface. On the left is the 'Nodes' panel, which lists various nodes with their names, file counts, and reference counts. A red arrow points from the 'Board Introduction' node in this list to the 'Code...' option in the context menu of a selected text in the transcription window. The transcription window on the right displays a passage from 'Michael Amann (Reasons)' with a portion highlighted in black. A context menu is open over this highlighted text, with the 'Code...' option highlighted by a red box.

Name	Files	References
Board Introduction	0	0
Demographics	0	0
Dysfunctional System	5	27
Final Statement	0	0
Hearing Information	0	0
Institutional Adjustment	2	2
Legal Representation	0	0



Coding Files/Documents (Macs)

1. Open the file you would like to annotate
2. Highlight the text you want to code
3. Command/Control+click and go to “Code Selection”
4. Click “At Existing Nodes or Cases”
 - a. Once you use nodes, the nodes will show up when you click “Code Selection”
 - b. You can also add new nodes/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. Simply choose “Coding for Selected Items”

The screenshot shows the NVivo 12 Pro interface. A red box labeled '1' highlights the 'Document' tab in the top menu bar. A red box labeled '2' highlights the 'Highlight' button in the toolbar. A red box labeled '3' highlights the 'Coding Stripes' button in the toolbar. The main window displays a transcript from 'Ayala 2010 Transcript Kelly'. A red box highlights the 'All Coding' option in the 'Coding Stripes' dropdown menu. The right side of the screen shows a 'Coding Density' visualization with several colored bars representing different codes: Mitigation (blue), Gang Membership (orange), Strong Diction (green), and Board Opinion of Crime (red). Annotations are visible in the transcript text.

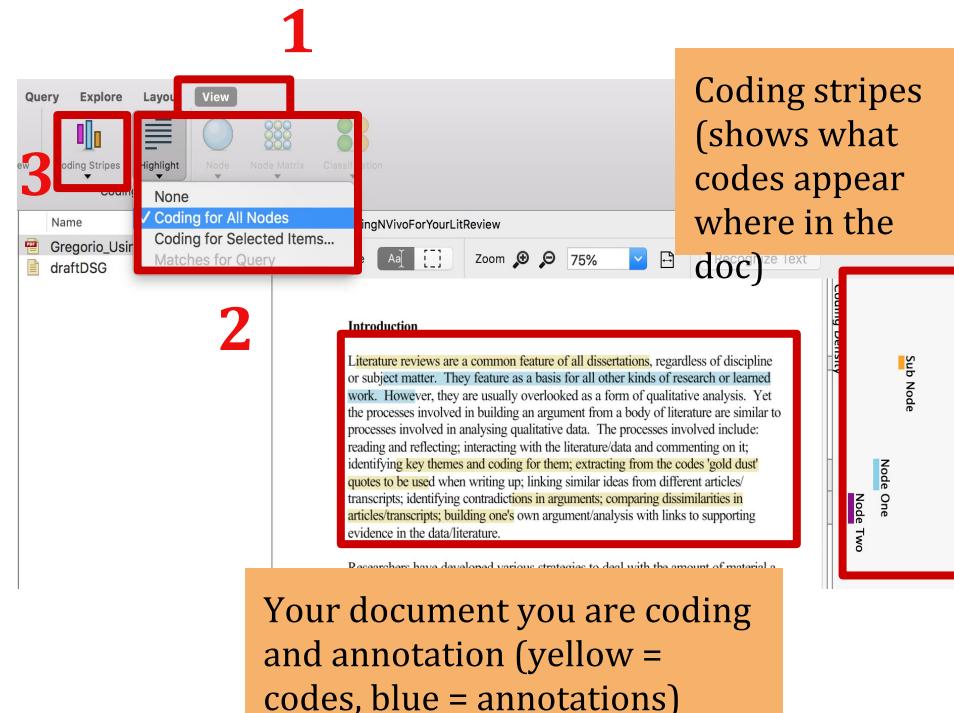
The document you are coding and annotations

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



View Your Codes (Macs)

1. Go to “View” in the toolbar
2. Click “Highlight” then “Coding for All Nodes”
3. Click “Coding Stripes” and “All Nodes 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. Simply choose “Coding for Selected Items”



1

2

3

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

Sub Node

Node One

Node Two

Introduction

Literature reviews are a common feature of all dissertations, regardless of discipline or subject matter. They feature as a basis for all other kinds of research or learned work. However, they are usually overlooked as a form of qualitative analysis. Yet the processes involved in building an argument from a body of literature are similar to processes involved in analysing qualitative data. The processes involved include: reading and reflecting; interacting with the literature/data and commenting on it; identifying key themes and coding for them; extracting from the codes 'gold dust' quotes to be used when writing up; linking similar ideas from different articles/transcripts; identifying contradictions in arguments; comparing dissimilarities in articles/transcripts; building one's own argument/analysis with links to supporting evidence in the data/literature.

Researchers have developed various strategies to deal with the amount of material a

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



Annotating Files (Windows)

To annotate (comment), follow the same steps as coding except click “New Annotation” instead after you highlight and Command/Control 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 is a vertical navigation menu with several sections: Quick Access (Files, Memos, Notes), Data (Files, File Classifications, External), Codes (Nodes, Relationships, Relationship Types), Cases (Cases, Case Classifications), and Notes (Annotations). The 'Annotations' section is highlighted with a red box and has a red arrow pointing from it to an orange callout box labeled 'List of annotations'. In the center, there is a main workspace titled 'Annotations' with a search bar 'Search Project'. Below the search bar is a table with columns 'File Name' and 'Number'. One row is visible, showing 'Amann_Reasons Transcription'. To the right of the workspace is a document titled 'Amann_Reasons Transcription' with the following text:

being incarcerated for thirty plus years, I entered a sexual offender treatment program. While I was in this program, I took as many classes as possible. I have come to (inaudible) and I know (inaudible) as a child with aggression and the punitive environment that I lived in, that allowed to inflict pain on myself and as well as on others. My belief system (inaudible). My feeling good about myself depended on my codefendant approving what I did. I thought I needed his approval and sought out his elevation at any cost, to a point I did not feel accepted without his approval. (Inaudible) towards females, whether I liked them or not, to make sure that he would not leave me. Through the program I have come to understand that why alcohol and substance abuse has been a major issue in my life. Growing up in an alcoholic household. I believed that it was normal to use alcohol to escape from reality or when problems arise. I also see how alcohol contributed to my anger reaching to a physical level. All of these programs, I have made genuine changes and integrated them into my everyday life and living. I realized that I cannot change on my own or be afraid to ask for help. They began to restore my capacity to be emotionally connected... and while at the sex offender treatment program, I have learned to trust myself and if I had a problem, who to go to and who not to. I know I must always be aware of my (inaudible), at all times. I am able to channel my thoughts and release, where I was not able to in the past. On parole, I will continue to attend AA and NA groups, SOTP classes and (inaudible). I know I will never be able to show my victim how sorry I am or how I have changed but if I am released on parole, I will show that someone like me can and will be a responsible member of society.

Below the document, there is another table titled 'Annotations' with columns 'Item' and 'Content'. One item is listed: '1 This is an annotation'.

Orange callout boxes with arrows point from specific parts of the interface to labels: 'List of annotations' points to the 'Annotations' section in the navigation menu; 'Your annotation' points to the 'Annotations' table; and 'The text from the document you highlighted and are annotating' points to the highlighted text in the main document.

The text from the document you highlighted and are annotating

Where you can find all your annotations listed

Your annotation

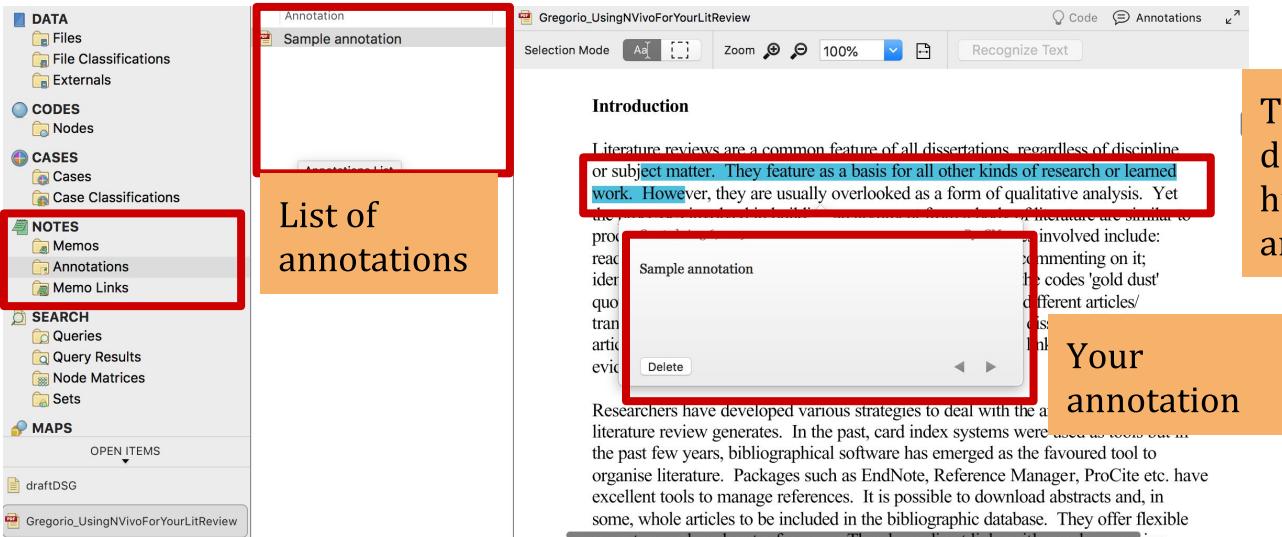
Feel free to ask questions at any point during the presentation!



Annotating Files (Macs)

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

Where you can find all your annotations listed



The text from the document you highlighted and are annotating

Feel free to ask questions at any point during the presentation!



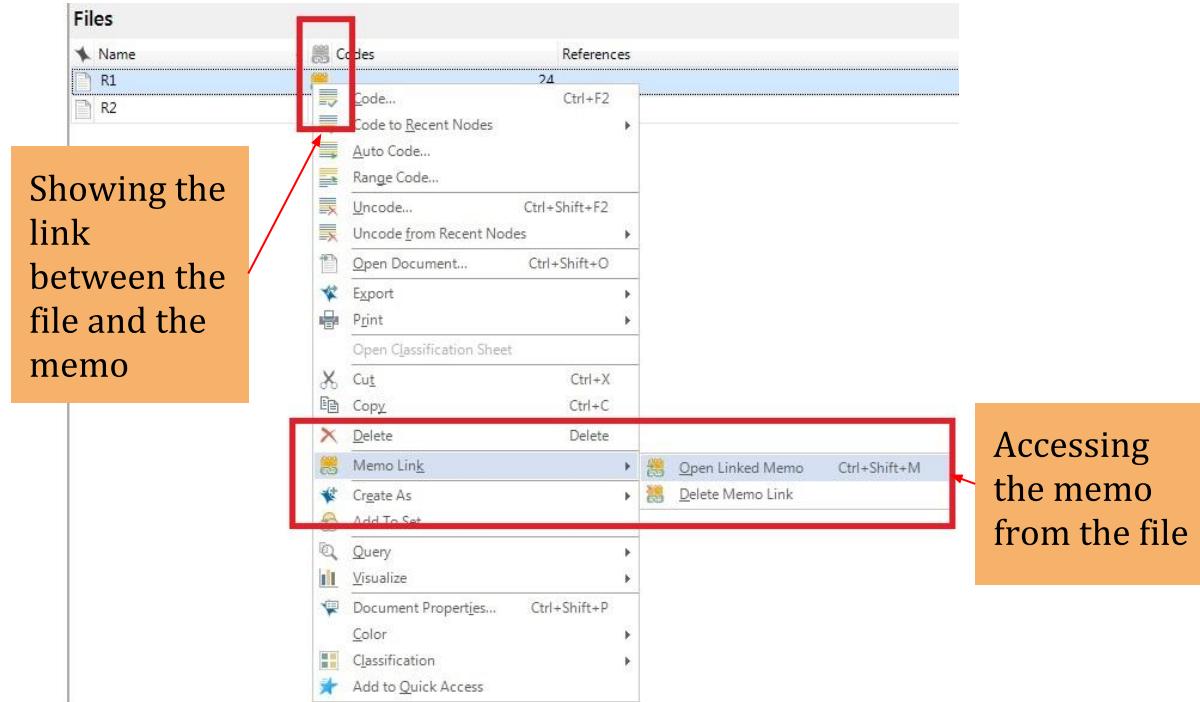
Memos (Windows)

- 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 node

The screenshot shows the NULab software interface with the 'File' tab selected. On the left, there's a sidebar with sections like 'Quick Access', 'Data', 'Codes', 'Cases', and 'Notes'. The 'Notes' section is highlighted with a red box and contains a 'Memos' folder. A red arrow points from this 'Memos' folder to a callout box labeled 'Menu where memos are located'. Another red arrow points from the 'Memos' folder to a context menu that is open over a list of nodes. This context menu has a 'Memo Link' option highlighted with a red box. A callout box to the right of this menu says 'Option to link the memo to a node'. The main workspace shows a table titled '1st cycle' with several rows of data, and a search bar at the top.



Memo links (Windows)



Memos and memo links (Macs)

Menu where memos are located

Option to link the memo to a node

Showing the link between the file and the memo

Accessing the memo from the file

Feel free to ask questions at any point during the presentation!

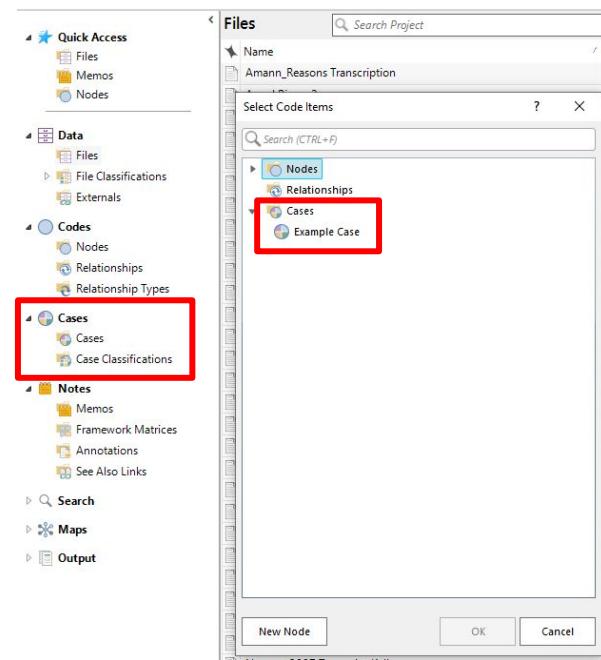


Cases (Windows)

Cases are the types of research texts in your project; they can be organized based on your selections. **“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](#)

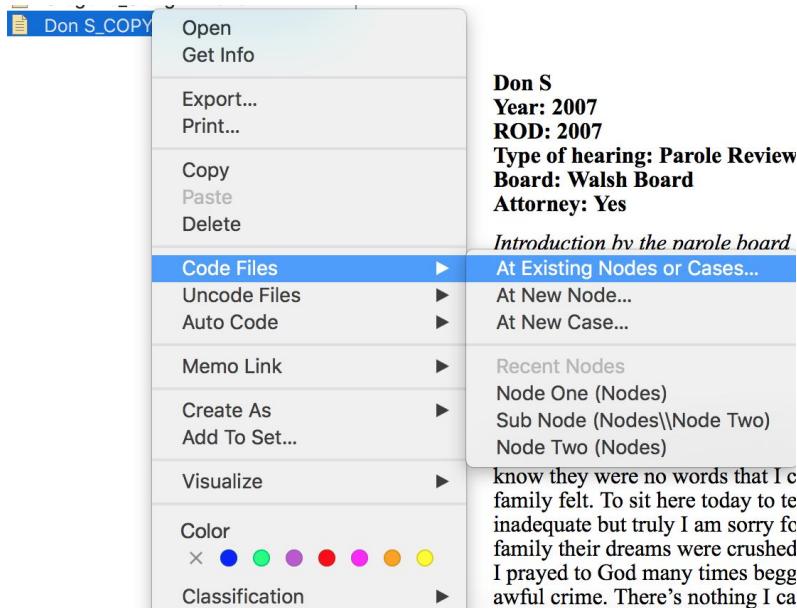
To add a “case” to a file, it’s the same method as adding a node, except you choose the “Cases” folder and the proper case.



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



Cases (Macs)



Querying

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

- **Word Frequency:** Counts the number of times words (with stopwords removed) appear in one or more files
- **Coding:** Shows the number of codes, the text that was coded, and the files
- **Crosstab:** cross-references nodes and case classifications. For example, you might want to know how often a particular node appears in both scholarly articles and your primary texts.



Word Frequency Example (Windows)

“Query” can be found in the “Explore” Tab

Alternatively, you can Command/Control+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”

The screenshot shows the NVivo interface with the "Explore" tab selected. A "Word Frequency Query Results" dialog box is open. In the "Selected Items..." tab of the dialog, several project files are listed, including Amann_Reasons Transcript, Angel Rivera 2, Antonio F Codebook, Alya 2005 Codebook, Alya 2005 Transcript Kel, Alya 2010 Codebook, Alya 2010 Transcript Kel, Clements 2011 Codebook, Clements 2011 Transcript, Clements 2013 Codebook, Clements 2013 Transcript, Don S Codebook, FERRER Codebook, Ferrer parole hearing 200, Gerald Hill Codebook, gibney, Gibney Gabriel, Hill 2012 Codebook, Hill 2012 TRANS fashila, Jose Robles, Mendoza Codebook, MENDOZA parole hearing, and Manna 2011 Codebook. The "Run Query" button in the dialog is highlighted with a red box. The main interface shows a list of words with their counts and weighted percentages.

Word	Length	Count	Weighted Percentage (%)
time	4	13	1.40
inaudible	9	12	1.29
know	4	11	1.18
mean	4	10	1.08
assault	7	8	0.86
feel	4	8	0.86
care	4	6	0.65
codefendant	11	6	0.65
happier	5	6	0.65
6	4	6	0.65
Nodes Coded at This Document	5	6	0.65
Cases Coded at This Document	4	6	0.65
around	6	5	0.54
happiest	8	5	0.54

Word Frequency Example (Mac)

Select the items you would like to query in the “Selected Items” tab and then click “Run Query”

The screenshot shows the NVivo software interface for performing a word frequency query. In the top left, there's a list of project files under 'Name' with 'Vilcica (2016)' selected. The main window is titled 'Unsaved Query' and contains a 'Word Frequency Criteria' section. Under 'Search in:', the 'Selected Items' tab is highlighted with a red box. Other options include 'Files and Externals' and 'Items in Selected Folders'. Below this, 'Finding matches:' has 'Exact match only (e.g. "talk")' selected. 'Display words:' has '1000 most frequent' selected. A 'With minimum length:' field is set to 3. At the bottom, there are two tabs: 'Summary' (selected) and 'Word Cloud'. The 'Summary' tab displays a table of words with their statistics:

Word	Length	Count	Weighted Percentage
parole	6	525	3.45%
board	5	172	1.13%
decision	8	105	0.69%
time	4	93	0.61%
release	7	83	0.55%
offense	7	68	0.45%
decisions	9	66	0.43%
inmates	7	60	0.39%
neutralization	14	57	0.37%
criminal	8	54	0.35%
members	7	54	0.35%
hearings	8	52	0.34%
research	8	51	0.34%
served	6	50	0.33%
study	5	50	0.33%
also	4	49	0.32%
justice	7	49	0.32%
offender	8	49	0.32%
prior	5	47	0.31%



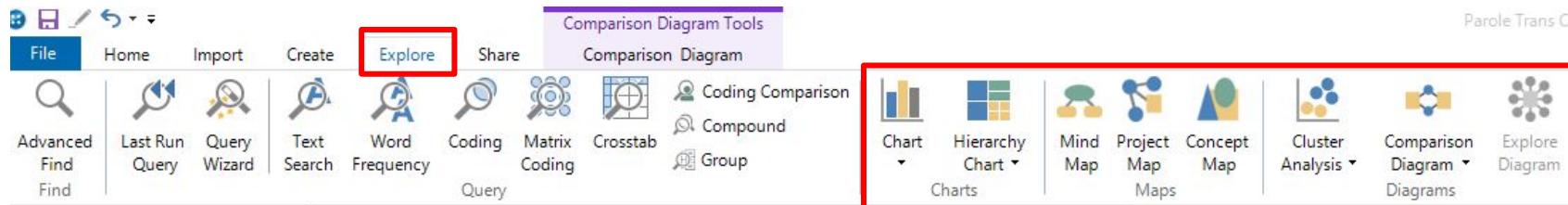
Exploring Codes (Windows)

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 nodes used in multiple files



Exploring Codes (Macs)

Comparison diagram example

The screenshot shows the NVivo software interface with the 'Explore' tab selected in the top menu bar. The left sidebar contains categories like 'FILES', 'CODES', 'CASES', 'NOTES', and 'SEARCH'. The main workspace displays a 'Comparison Diagram' showing relationships between items. A document icon labeled 'draftDSG' is connected to a blue circular node labeled 'Node One', which is also connected to a smaller blue circular node labeled 'Sub Node'. Another blue circular node labeled 'Node Two' is connected to a PDF icon labeled 'Gregorio_Using NVivoForYourLit Review'. Arrows indicate the direction of the code links, labeled 'Codes'.



Qualitative Coding is about *Interpretation and Arguments*

The nodes you create are **arguments** themselves; you are choosing what information you value and want to extract from the transcripts



Showing and Interpreting your work

You can take **screenshots** or save your results from queries to show your work as you're researching, organizing, annotating, and coding your sources.

Use these results to emphasize your argument.

For example, if you're interested in understanding food access at Northeastern, you might look at how often did your interviewee mention food. How is food mentioned? What are the connections between food and first year experiences?



Your Turn

Using your interview transcripts, practice:

- inputting the documents
- creating nodes/cases
- coding the documents
- visualizing your codes

Find these slides at http://bit.ly/diti_fall2020-marshall3



Group Discussion

- What did you find surprising or interesting in your exploration of the tool?
- What are some challenges you faced? How might you work with these as you move forward?
- How else might you use NVivo in your future studies/career?



Thank you!

If you have any questions, contact us at:

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Slides, handouts, and data available at http://bit.ly/diti_fall2020-marshall3

Office hours for help with NVivo: bit.ly/diti-office-hours



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*Feel free to ask questions at any point
during the presentation!*