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NVivo Advanced Coding and Data Analysis

This course will show you some more advanced NVivo features and how to use the most common NVivo tools needed to analyse your qualitative data coding in an academic context. For further information about NVivo's full capabilities, please refer to the **NVivo 14 help** website:

PC: help-nv.qsrinternational.com/14/win/Content/welcome.htm

Mac: help-nv.qsrinternational.com/14/mac/Content/welcome.htm

This session will show you how to:

- analyse and explore your data further using **Queries**: Coding, Matrix and Crosstab
- analyse your data using **Cluster Analysis**
- create Concept and Project **Maps** to visualise your project's structure and findings
- create and edit special **NVivo Graphs**: Explore, Comparison and Group Query
- **collaborate** with others on an NVivo Project
- conduct **Literature Reviews** in NVivo

Opening NVivo and a Sample Project

When you **open NVivo** for the first time, it will ask you to create a **User ID**: enter your name and initials. At the top of the **Start Screen** open the **Multi-Method Sample Project** as it has the broadest range of data types to explore. It is a two-year study (2008-2009) documenting community perceptions of development and land-use change on coastal communities in the Down East area of Carteret County, North Carolina, USA.

Compatibility with other versions of NVivo

If you are collaborating with others on the same NVivo Project, you must use the same version of NVivo (e.g., NVivo 14). Projects created in older versions of NVivo can be opened in newer versions. However, they will need to be **converted** to the newer format in order to do so. Once this new converted file is saved, it cannot be opened in older versions of NVivo again.

Mac vs PC Versions of NVivo

Mac versions of NVivo do not have the same capabilities as Windows versions (e.g., you cannot Create Cases at import on Macs) and there are features in Windows versions that are not supported in Mac. **You can work on the same project on different operating systems (PC and Mac)** although it's not recommended. You will need to convert your Windows Project to a Mac format and vice-versa when transferring Project data between computers. Please see NVivo 14 Introduction handout for further information.

These course notes apply specifically to the PC version of NVivo, so if you are working on a Mac and have trouble finding what you need, please refer to the online NVivo 14 Help for Mac (see link above).

Analysing Coding Using Queries

When you have completed your coding, there are 6 types of Queries to help you explore your data in more depth and to quantify it to some extent:

- **Coding:** explore your data more in depth based on how you coded it (e.g., What did people say about *Water Quality* and *Environmental Impacts*?).
- **Compound:** combine two Text and/or Coding Queries to explore your data further (e.g., Did people mention words related to “health” in the Code *Water Quality*?).
- **Matrix Coding:** creates a cross-tabulation of your Codes and/or Attributes to look for patterns and quantify your results (e.g., how many people said positive things about *Water Quality* and how many said negative things?).
- **Crosstab:** like a Matrix Query but can only create a cross-tabulation of Codes by Attributes, and you cannot select specific attribute values.
- **Coding Comparison:** used for checking the reliability of your coding (*covered in the Intermediate notes*).
- **Group:** used to explore all the Project items associated with one specific item (e.g., which Codes also code the text within the *Balance Code* – *covered in NVivo specific graphs section*).

Note: before running any Query check to make sure that **Aggregation** for the Parent Codes in your analysis is turned **ON** if you want to include results for their Child Codes, and **OFF** if you do not. You must **ALSO do this for any grandchild and great-grandchild Codes** if you want those included as well (*see Introduction to NVivo notes regarding Aggregation*).

Coding Queries

Basic Coding Queries using the Query Wizard

You can run a **Coding Query** to search for content based on how it’s coded at specific Codes.

Note: the procedure is different if you conduct the Query using the **Query Wizard** than via **Coding Query** directly, so we’ll look at both methods in two separate examples.

Example: Using the **Query Wizard** to see how many and which references are coded at *both Water Quality* AND the specific Economic concern of *Fishing or Aquaculture*?

On the **Explore** tab, click **Query Wizard**, then click the **Search for content based on how it is coded**, and click **Next**. You can find content coded at:

- **A particular Code or Case** (e.g., *Water Quality*) [same as opening a Code or Case]
- **All these Codes or Cases** you specify (e.g., both *Water Quality* AND *Fishing or Aquaculture*)
- **Any of these Codes or Cases** you specify (e.g., *Habitat* OR *Forest* OR *Landscape*)
- **Any Case where** there are specified **Attribute values** (e.g., all the responses of the *Person Classification Attribute* of *Gender equals value Female*).

Choose **All these Codes or Cases** and click on the **Select** button. In the **Codes** folder tick *Water Quality* under the *Natural Environment* Parent Code, and *Fishing or Aquaculture* under the *Economy* Parent Code. Then click **OK** and then **Next**.

Note: if you tick the **Automatically select descendent Codes** (meaning **Child Codes**) it will look for co-occurrences of all the Child Codes under *Fishing or Aquaculture* as well, and as most of these are mutually exclusive, the Query will return **no results**. This Parent Code has **Aggregate coding from Child Codes** ticked, so it will include information contained within these Child Codes anyway (see in the Code’s **Code Properties**).

Choose to **Search in: Items in Selected Folders** to restrict the Query, click the **Select** button and choose the *Interviews* folder and click **OK**. Click **Next**, then choose **Save the query criteria**, give it a Name, then click **Run**. To save the Query details, select **Add this Query to Project**, give it a name and description, and click **Run**.

All the results that satisfy the Query conditions will be displayed in the **Detail View**. If you ever need to run the same Query again later, you will find it in the **Query Criteria** folder in the **Queries** area of the Navigation Pane. Just right-click on the **Query** and select **Run Query**.

Advanced Coding Queries without the Query Wizard

If you want to use more advanced **Coding Queries** that have features that are not available via the Wizard (e.g., find what a specific demographic says about a theme), you can use the **Coding** function directly.

Example: What do respondents 50 years of age and over say about *Natural Environment*?

On the **Explore** tab, in the **Queries** drop-down menu select **Coding** and then a new **Detail View** will open with Query options. **Search in the Selected folders** *Interviews* and *Surveys*. From the first drop-down menu select **All of the following are true** (for the AND Boolean function), then **Coded to** and **Any case where** from the next drop-down menu (to specify Attributes). Click on the **"..."** box to select the Attribute conditions for the Query: expand the list for *Person* and select *Age Group* then click **OK**. Now you have a new drop-down menu on the right from which to select the logical argument: choose **> value** (greater than) and from the next box select the value **50-59**.

Note: NVivo doesn't recognise age groups in this format as being *numerical* data so it doesn't know what order they should be in, it just assumes you have them in the right order: lowest to highest.

Add the next condition to the Query by clicking the **+** button to the right of the current line. Choose **Coded to** and **All Selected Codes or Cases** then click the **"..."** box to choose the Code *Natural Environment* (aggregation is turned on for this Code). **Spread Coding to the Broad** context and click **Run Query**.

The results show you everything that people 40 years and over said about *Community Change*.

Editing a Query

If you make a mistake in a Query, you can always amend it in the **Detail View**, however if you have already closed this you can click the **Last Run Query** icon on the **Explore** tab to go back to the Query criteria.

You can edit the search criteria by editing the criteria itself, and by:

- changing the **order of processing in the query**, clicking the required up or down arrow next to the +/- buttons.
- **Remove an item** in the criteria list, by selecting the item and then clicking the **"-"** button.

Note: If you edit a Query that has been added to the project, this will **overwrite the original Query**. If you want to keep the original, duplicate the Query and make changes to the copy by copying and pasting the Query in the Query Criteria folder and changing its name.

Matrix Coding Queries

You can use **Matrix Coding Queries** to cross tabulate the frequencies of **Codes** and/or **Attributes** in order to:

- compare what different demographic groups have said about an issue (e.g., are different *Townships* concerned about different issues?).
- explore the amount of overlap between different themes (e.g., is there a potential relationship between *Community Change* and the *Economy, Infrastructure, Real Estate Development, and Policy*?).
- compare attitudes (e.g., do *Males* have more *Positive* and less *Negative* attitudes than *Females* within the *Environmental Change* Code?).

They are also particularly useful for further descriptive and inferential statistical analysis using chi square for example (only when cells of the table are mutually exclusive). Most often Codes and/or Attributes are used in the rows and columns of the matrix, but you can also select Data Files. In addition, you can create matrices that only relate to content coded within a specific Code (e.g., a specific survey question).

Advanced Matrix Coding Query

Example: Do Commercial Fishers have more Positive, Negative, Mixed or Neutral attitudes than Recreational within the context of Water Quality?

On the **Explore** tab, click **Matrix Coding Query**. This will open another menu window in the **Detail View**. In the **Rows** box, add Project Items by clicking the **+** for the box and choosing either **Select Items** and tick the boxes of the Codes you require (e.g., all the *Attitude Child Codes: Mixed, Negative, Neutral and Positive*) and click **OK**. Alternatively, with the Codes list view visible you can select and drag all the Codes into this box.

To add **Attribute Values** in the columns, click on the **+** but **counterintuitively** choose **Select Items**. This allows you to choose individual attribute values by ticking boxes rather than going through multiple steps and defining logical arguments (e.g. *Recreational Fishing = Yes*). Click on the **Case Classifications** folder name (do not tick the box), then in the *Person* Classification find and tick both of the *Recreational Fishing* and *Commercial Fishing Yes* value boxes. Then click **OK**.

Choose where you want to **Search in** (e.g., **Selected Items**) and select the Folder/Code/Case you want (e.g, in the **Codes** folder under *Natural Environment* select *Water Quality*) then click **OK**. Choose if you want to **Save Criteria** then click **Run Query**. If you want to save the resulting **Coding Matrix** for future reference (not just the parameters of the **Query**), you will need to click the **Save Results** button at the top of the window. Then choose the **Location** you want to save it to. By default, it's **Query Results** folder in the **Queries** area but it may be easier to remember where to find it if you save it to **Coding Matrices** folder instead.

Note: By default, the cells of the table will represent the conjunction between rows and columns (the AND Boolean operator). You can change this if you need to by clicking on the **Coding at Rows** drop-down menu and choosing *OR, NOT, Near, Preceding* or *Surrounding*.

Note: If you want to display the results as row or column percentages, the results it displays will refer to the number of words coded in that cell as a percentage of total words coded in that row or column.

Within the results of a **Matrix Query** you will see a cross-tabulation known as a **Coding Matrix**. You can double-click on a cell to open the summary of all the references relating to that cell (like running a **Coding Query** for that cell). In this sense, **Matrix Coding Queries** can be useful alternatives to **Coding Queries**.

Matrices can be viewed as charts, by clicking on the **Charts** tab in the **Detail View**. You can change the chart type, title, gridlines and rotation (*see more on Creating and Editing Charts on the NVivo help website*).

Handy Hint: NVivo gives you very limited control over the design of the charts (e.g., labels, colour etc.), so if you don't like the look of them, you can export the matrix table to a spreadsheet application such as Excel and create graphs there.

Exporting Coding Matrices

You can export a Coding Matrix to an **Excel**, **text**, or **SPSS** file so you can create better graphs in Excel and/or to quantitatively analyse it further. Right-click on the Matrix you want to export and select **Export Coding Matrix**. Select a location to save the file and change the name if necessary, and in the **Save as Type** box choose the appropriate file format. Click **Save**.

Editing Coding Matrices

You can click and drag columns wider or narrower to see more content. Columns and rows can be sorted in ascending or descending order, by selecting the column/row of interest, on the **Matrix Tools** tab click on **Sort & Filter** then click **Sort by Column** or **Row**. Each column and row can be filtered this way also or alternatively by clicking on the appropriate filter (funnel) symbol for the relevant row or column. NVivo will show or hide columns/rows based on the filter (e.g., hide rows where number of responses = 0). If you need to transpose columns and rows, click on the Coding matrix then in the **Matrix Tools** tab, click **Transpose**.

You can also apply shading to cells to make it easier to see patterns. On the **Matrix Tools** tab select one of the cell shading options displayed (e.g., blue and white). The darker the shading colour the more coding in that cell. You can also change the information displayed in the cells here (e.g., **Cases Coded** as *Person*).

Note: By default, the Coding Matrix displays the number of **References** in each cell (i.e., the number of text sections coded), and multiple references may be from the same Case OR multiple collaborators coded the same content. To see the number of **Cases** for each cell (often the most useful metric), on the **Matrix Tools** tab click the **Cases Coded** drop-down menu and choose *Person*.

Note: You can also display the row and column percentages, however, please be aware that this will only ever relate to the **number of words coded** not the number of Cases or references.

Saving Coding Matrices

You can save the matrix retrospectively in the **Coding Matrices** folder or the **Query Results** folder within the **Search** area for future reference. On the **Matrix Tools** tab click on the **Save Results** button and select the location you want to store it in (e.g., **Coding Matrices** instead of the default Query Results). Give the matrix a **Name** and (optional) **Description**, then click **OK**.

Crosstab Queries

Crosstab Queries are designed to be a quick way to check the spread of coding across cases and demographic variables. It essentially does the same thing the Matrix Coding Query with some limitations: you can only compare **Codes** against **Case or Classification Attributes** or against individual **Cases**; and you are not able to select specific **Attribute values** (e.g., only 2 age groups). However, if you have **Attributes** that are not mutually exclusive (e.g., Cases can be both *Recreational* AND *Commercial* Fishers), this is a good analysis to use to see more detail about the overlap.

Example: Which Fishing groups have more *Positive, Negative, Mixed* or *Neutral* attitudes within the context of *Water Quality*?

On the **Explore** tab, click **Crosstab**. This will open another menu window with a **Detail View**. In the **Codes** box, add Codes by clicking the **+** for the box and tick the boxes for the Codes you want to include in the table (e.g., *Mixed, Negative, Neutral, and Positive*), or you can select the **Codes** and drag them to the **Codes** box.

To add **Attribute Values** select the appropriate **Classification** from the drop-down menu (e.g., *Person*) and then choose an Attribute from the **Attribute 1** drop-down menu (e.g., *Age Group*). You can also select a 2nd Attribute in the **Attribute 2** drop-down menu if you wish. Although you cannot select individual Attribute Values, but you can exclude *Unassigned* and *Not Applicable* options if you tick that box.

Select where you want to **Search** (e.g., in **Selected Items** choose the *Water Quality* Code from the **Codes** folder under *Natural Environment* Codes) then click **OK**. Choose if you want to **Save Criteria** then click **Run Query**.

You can edit a Crosstab Matrix in a similar way to a Matrix Query result (see previous section).

Cluster Analysis

Cluster Analysis can be helpful for identifying patterns in your data by grouping Files or Codes into clusters (maximum of 10 by default). This can help you to visualise the similarities and differences between selected **Files** or **Codes**¹. Similarity metrics can be based on the **words, coding** or **attributes** applied. It uses the *farthest neighbour* (a.k.a. complete linkage) hierarchical clustering method.

You can cluster the following project items:

- **Files, Externals** and **Memos** (e.g., to identify similarities and differences in journal articles).
- **Codes** (e.g., to identify similarities and differences in your Codes or in Cases).

You can cluster selected Files or Codes based on:

- **Word similarity:** based on the number of words they have in common. **Note: Stop Words** are excluded when using this measure.
- **Coding similarity:** Data Files are coded based on the number of Codes they have in common, whereas Codes are coded based on the number Files they have in common (**NOT** the overlap between Codes). **NOTE:** this measure includes ALL your internal and external Data Files which contain coding, and you cannot select a subset.
- **Attribute value similarity:** Data Files are coded based on the number of File Classification Attribute values they have in common. **Note:** Only Cases are clustered based on their Case Classification Attribute values.

You can choose from 3 similarity metrics:

- **Pearson's correlation coefficient:** Ranges from -1 = least to +1 = most similar.
- **Jaccard's coefficient:** Ranges from 0 = least similar to 1 = most similar.
- **Sørensen's coefficient:** as above.

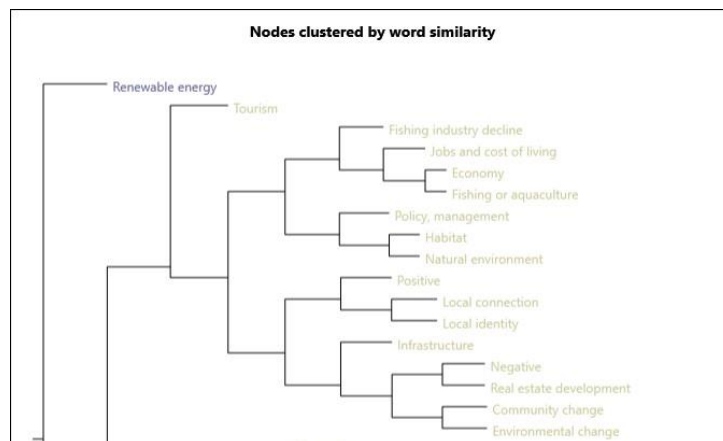
¹ Here **Codes** refers to both Codes and Cases

Table of kinds of questions different clustering methods can help you answer:

Based On What?	Cluster What?	
	Files, Externals & Memos	Codes/Cases
Word Similarity	Which articles are similar in content? Which journals tend to publish similar content?	How similar are selected Codes in terms of the content coded? Are they related? Are they so similar they should be merged? Which people (Cases) hold similar views according to their survey responses?
Coding Similarity	Which articles have similar themes? Are there groups of people who are concerned about similar topics?	What group of themes tend to be mentioned together in articles/interviews? Which authors (if Cases) tend to publish together?
Attribute Value Similarity	Which articles have similar reference classifications (author, journal, etc.)? Are there distinct groups to analyse separately?	Which Cases are similar in terms of their demographics? Are there distinctive groups of people you might wish to analyse separately?

Example: Conduct a Cluster Analysis to see which Codes are similar in terms of the words coded.

To run a Cluster Analysis, on the **Explore** tab, click on the **Diagrams** drop-down menu, and select **Cluster Analysis** to open the **Wizard**. Select to cluster by **Codes** (to cluster by your thematic *Codes*), then click **Next**. Then in the Codes box, click the **Select** button and choose the **Codes** you wish to cluster (e.g., all the Child and Free Codes in the Codes folder except for *Memorable Quotes*). Then select how you want to cluster them from the **Clustered by** drop-down menu (e.g., by *Word Similarity*), and then choose the **Similarity Metric** (e.g., *Jaccard's coefficient*). Click **Finish**.



The **Diagram** tab shows you a dendrogram (by default) which indicates which Codes are most similar in terms of the words they contain. Those that cluster together on a branch are more similar than those further apart. In the dendrogram above, it is interesting to note that words coded in the *Local Connection* and *Local Identity* are also similar to words used in a *Positive* context.

On the **Summary** tab you can see a metric of how similar each pair of Codes are, from highest to lowest. Items with an index value close to 1 are very similar and as such will appear closer together on the diagram. If you want to see what words Codes in a cluster have in common, click on the Code names to highlight them, right-click on the selection and choose **Run Word Frequency Query**.

If you want to see the Attribute values of a File or Case in a cluster analysis (e.g., to see if there are demographic similarities between items that cluster together) select the File(s) or Case(s), right-click on the selection and select **Open Classification Sheet**.

NVivo-Specific Graphs

Maps

There are 3 types of Maps in NVivo14:

- **Mind Maps:** strictly hierarchically structured map, useful for planning/describing your Coding Scheme and creating Codes (covered in the *Introduction to NVivo* notes).
- **Concept Maps:** A more free-form way of visually representing the relationships between Project Items.
- **Project Maps:** To get NVivo to visually represent specific **Project Items** and how they relate to each other within the Project itself.

The latter two maps are **Dynamic Models** which means they can include links to actual Project Items. For example, if you see a **Code** icon on one of these maps, you can double-click on the icon to open that Code.

Concept Maps

Concept Maps are free form rather than strictly hierarchical and allow you to create diagrams with a variety of shapes and connectors, and dynamic elements (e.g., links to Project Items). To create a Concept Map, go to the **Explore** tab and click on the **Maps** icon and select **Concept Map**. Enter a name for it in the **Name** box, and an (optional) **Description**, then click **OK**. To add shapes to the map, in the **Detail View** click and drag the shapes you want to add from the windowpane on the left. Consider using different shapes to denote different elements of your project (e.g., circular for central and square for peripheral themes). Double-click on the shapes to enter labels. You can also change the colour of individual shapes by clicking on the one you want to change then select the colour and/or border colours you want on the appropriate drop-down menus on from **Concept Map** tab.

To connect shapes to each other, click the **Connector** button on the **Concept Map** tab which changes the cursor to a connector. Click and drag from one shape to another to connect them. If you want to change the directionality of the connector, select on the connector and then click **Change Connector** button on the **Concept Map** tab and select the direction you want. If you want to label the connection, simply double-click on the connector and a text box will appear. To get your normal cursor back, just click **Pointer** on the **Concept Map** tab.

If you wish to add a shape which is a link to a **Project Item**, click the **Add Project Items** button to bring up a menu and tick all the items you want to add, then click **OK**. Once they are added, you can click and drag them in to the position you want. You can also click-and-drag project items from the **List View** to the map (e.g., click and drag the *Balance* Code from the List View of the Codes folder onto the map).

You can delete a shape by selecting the one you want to delete then on the keyboard press **Delete**.

Add a note to a model

You can add notes to models which allow you to enter more text: on the **Model** tab, click the **Note** shape from the **Shapes** drop-down menu. Double-click the note and in the **Text** box, enter your notes. Click **OK**.

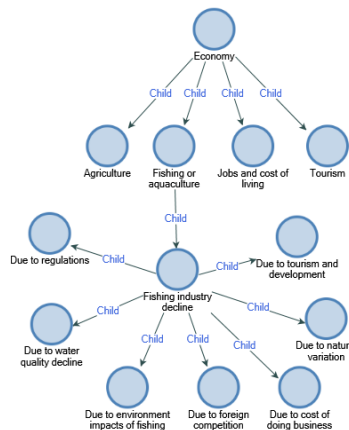


Project Maps

Project Maps can be used to show you a graph of the final coding structure of your Project, or how Project Items are connected to each other (e.g., you can look at all the Codes associated with one Case or File). You can also click on one of the items and asked to see a list of all associated project items (e.g., Child Codes, Cases, Files, Links), to decide if you want to include them in the map. Concept Maps are saved in the **Maps** area of NVivo.

On the **Explore** tab click the **Maps** icon and select **Project Map** drop-down menu. Enter a name for the model in the **Name** box, and an (optional) **Description**, then click **OK**. On the **Project Map** tab, click on the **Add Project Items** icon to select the items you wish to include in the map (e.g., the *Economy* Code and all its Child Codes). Then click **OK**. On the **Project Map** tab, you can deselect any connectors you wish to hide from the map in the **Connectors** Area of the **Project Map** tab (e.g., Links). You can also change the type of graph on the **Project Map** tab by choosing a different one from the 4 displayed.

A quick way to see the Project Items that are associated with an Item already in the Map (and to show this association on the map also), click on the Item then on the **Project Map** tab click **Show Associated Items** icon. A new window appears on the left-hand side of the **Detail View** which lists all valid items you can include. You can click and drag the items you want to add from that pane.



NVivo-Specific Graphs

Network Sociogram

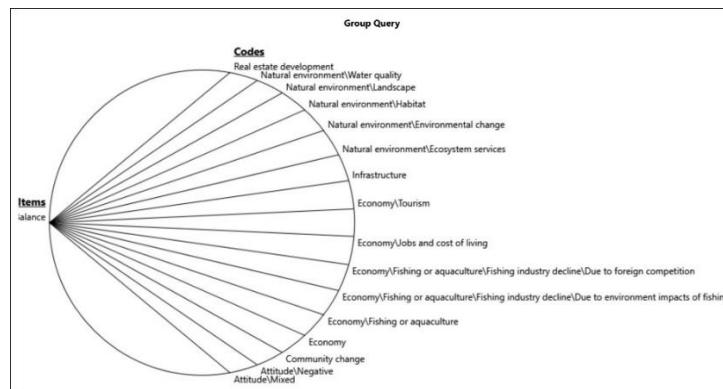
Relationships between **Cases** can be graphed (and only graphed) in **NVivo 14** using an approximation of **Social Network Analysis (SNA)**. You must **manually create and assign all the relationships** you wish to graph on the map. However, if you wanted to perform a proper SNA with a large amount of data in a statistically appropriate way, it is best to use a program more suited for the purpose. The CSIRO has a free open-source tool called **Constellation**: <https://www.constellation-app.com/index.html> and another one called **StellarGraph**: <https://www.stellargraph.io/> which you may find helpful.

Group Queries

To see a graph of all the **Codes or Cases** related to one specific **Code or Case** (the overlap in their coding). For example, if you want to see what Codes are also coded to same text as in *Balance*, you can run a Group Query.

Example: Explore the Balance Code to see what other Codes have coded the same text.

On the **Explore** tab click on the **Queries** drop-down menu and select **Group**. In the **Query Criteria**, leave **Items Coding** in the **Look For** box, and change the **Scope** to **Selected Items**. Click on the **Select** button next to it, then find and tick the box for the **Balance** Code. In the **Range** drop-down menu, select **Selected Items** and find and tick Codes boxes for all the **Codes** other than **Balance** (easiest if you use the **Automatically select descendant Codes** box then untick what you don't want). The click **Run**.

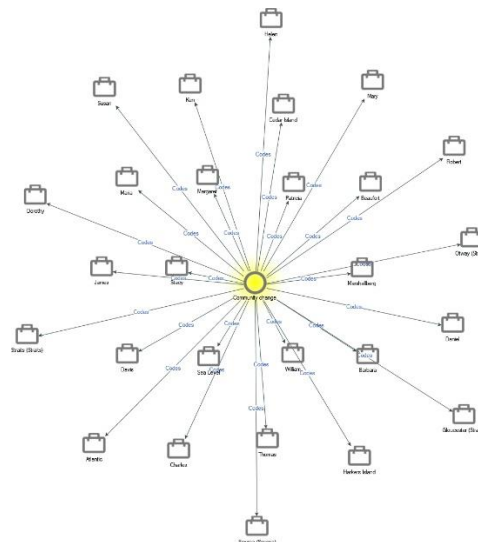


Explore Diagrams

You can also create special graphs to show how project items are connected to one specific File, Code or Case. This is very similar to a Project Map, only the latter can show you how the other Project Items, including Codes, relate to each other as well. An Explore Diagram will only show you what project items, other than Codes, are related to one Code/Case (e.g., what *Interviews* contain references to *Community Change*).

Example: Create an Explore Diagram of the Cases related to *Community Change*.

Select the Code or Case you want to create a graph for in the **List View** of the **Data, Coding** or **Cases** area (e.g., select *Community Change*). On the **Explore** tab, click on the **Diagrams** drop-down menu and select **Explore Diagram** to generate the graph. You will see a new **Graph** appear in the Detail View, which shows you all the project items related to it. As this is a dynamic graph, you can click on any one of the icons to open-up that Project Item. You have extra options such as **showing or hiding information** on the **Explore Diagram** tab (e.g., hide *Relationships*, *Files* and *Memo Links*). You can also change the focus to another Code within the graph itself by right-clicking on a Project Item object, select **Change Focus** and a graph will be generated with that Code at its centre. If you want to go back to the original, click the **Back** button on the **Explore Diagram** tab.

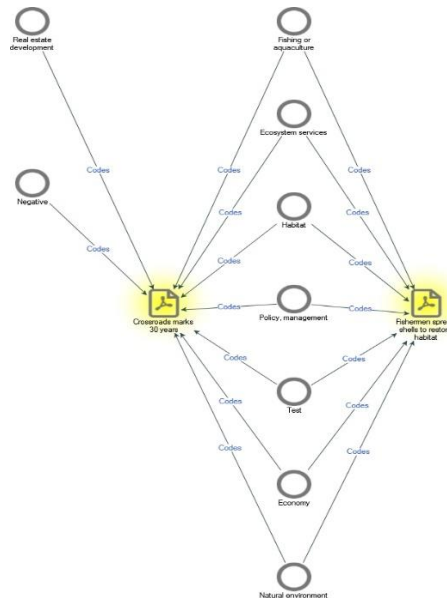


Comparison Diagrams

You can use comparison diagrams to compare two Codes, Files **or** Cases and see which Project Items they do and do not have in common (including Classifications, Attributes, Relationships and Links).

Example: Create a Comparison Diagram of the 2 news articles to see what Codes they have in common and how they differ.

On the **Explore** tab, click on the **Diagram** drop-down menu and select **Compare Files**. Then in the *News Articles* folder select both files and click **OK**. The graph will open in the **Detail View**. Again, you the option of **showing or hiding information** on the **Explore Diagram** tab (e.g., hide *Relationships, Files* and *Memo Links*). The graph below shows you which Codes relate to both articles, and which do not.



Collaboration

If you are collaborating with a team of researchers, there are two options for managing the **issue of version control**.

1. Use the **NVivo 14 Collaboration Cloud Add-On Module** which allows each team member to create a copy of the project and sync changes to the Project when they're done. (Requires a paid subscription).
2. Creating Copies of a Master Project for each team member to work on and then import their work to the Master Project when they are finished. (This does the same thing, but manually and for free).

The most important rules are that:

- everyone will need to ensure they are working under their own unique User Profile so that NVivo can keep track of who coded what and how,
- you must use the **same version** of NVivo to do this.

You can have Project copies in either Windows or Mac format, however. **I will cover the manual Collaboration option only here.**

Creating a Project Copy

To create a copy, go to the **Share** menu tab, click on **Copy Project** and select the appropriate format in the **Copy To** area (e.g., *NVivo - (Windows)R14.23.2 project*) and click the **Browse** button to choose where to save it. It's also a good idea to append the name of the Team Member to the file for reference. Then click **Save**.

Changing User Profile

Each Project Team Member will need to work on their own copy in NVivo using their unique **User Profile**, so that NVivo can identify who coded what. You can check the **Current User Profile** to make sure you are using your own. This is displayed on the **Status Bar** at the bottom of the NVivo window (with the person icon). To change User Profile, go to the **File** menu and select **Options**. On the **General** tab in the **User Profile** area, change the **Name** and **Initials** for the new User. It's also a good idea now to tick the **Prompt for user on launch** so that you don't forget to change it back to yourself). Then click **Apply** and **OK**.

Importing Content from Other Projects

When a team member is finished working on the Project, you can import what they have done into the **Master Project**. With the **Master Project** open, click on the **Import** tab, select **Project** and click the **Browse** button to find the Project copy you wish to import information from. In the **Content Options** area choose **Selected (including content)** and choose what you want to import (e.g., **Coding and Nodes**). **Note:** NVivo used to call **Codes** "Nodes" so if you want to import any codes that were created you **must** tick the **"Nodes"** box. Next, decide how you want to deal with **Duplicate items** (merge them or create new items) then click **Import**. You get a report of the import

NOTE: Remember that when you have multiple people coding your data, if more than one person codes the **same content to the same Code**, this inflates the number in the **References** metric (e.g., if 3 people code the same section of text to *Environmental change* this counts as 3 references).

HANDY HINT: You can also import Project details from ANY Project this way: e.g., import Codes from your *Literature Review* to use in your actual *Research Project*.

Exporting Content for non-NVivo Users

Sometimes you need to show Project Team Members or supervisors how you have coded your data, but they do not have NVivo. You can export the content of a Code in three ways, either:

- Text only as shown in the **Reference View** tab,
- Table shown in the **Summary View** tab, or
- **Entire content**, which includes audio, video etc. as a webpage.

When choosing to export the Code's **Entire Content**, the export consists of two parts: an executable *.html file (e.g., *Balance.html*) and a folder containing files that make the webpage work (e.g., a *Balance* folder). When you open the *.html file webpage has a tab for the Code's *Summary*, as well as separate tabs for all the coded *Text*, *Audio*, *Video* files etc..

Note: If you want to move a Code HTML file to another location, make sure you copy the folder containing the web page files to the new location as well, or the links will be broken and the webpage won't work. For Codes that code audio and video Data Files, the coded sections of media files will be included upon export only if you coded directly on the audio or video timeline.

To export a Code, select the Code you want to export in the **List View**. On the **Share** tab, click **Export** and from the **Export Options** list select the appropriate option (e.g., **Entire Content**). Click the **Browse** button under **Save As** and change the name/location of the exported files if you need. If you choose **Entire Content** or **Reference View** there are further options to choose from the **Include** section of the menu (e.g., include *Description*, *Annotations* etc.). Select the Properties and Related Content that you want to include then click **OK**.

Static Sets Folder

Static Set folders are also useful for collaborating with others in a Project: for instance, if you want to assign the coding of different files to different people you can create a Static Set folder for each member of the Project Team containing links to the files they need to code.

The **Static Sets** folder stores meta-folders to help you organise your Project Items in meaningful ways. For example, you could have a Set Folder for all the *Interviews* you have left to code (e.g., *Still to Code*) and remove them once you have coded them, to keep track. Set folders are non-disruptive to the structure of the NVivo Project because only links to Project Items are stored in them, not the files themselves (e.g., the *Interview* files are still contained in the Files folder, but links to them are included in the Set Folder called *Still to Code*). Set Folders are also non-destructive, because deleting a Project Item from a Set only removes the link from the folder, NOT the Project item from the Project (e.g, you can safely delete the link to each *Interview* after it's coded because the actual file will always be in the Files Area).

To create a new **Static Set** folder, go to the **Create** menu tab and click on **Static Set** (or right-click on the higher-order **Sets** folder) and choose **New Static Set...** and type in a name (i.e., *NM to Code*) and description (optional). Then click **OK**. Now you have an empty folder to populate with links to any type of Project items (e.g., Files, Cases, Externals, Memos). To add new links, select the relevant **Set** folder on the Create tab, click on Static Set and choose Set Members (or right-click in the new Static Set folder), and choose **Add Static Set Members** then add the Project Items you wish to include by ticking the relevant boxes (e.g., the *Interview* Files), then click **OK**. To remove items from a set, select the items you want to remove and on the **Home** tab click **Delete** (or right-click on the item and select **Delete**). Now all the second Coder needs to do is look in their personal Static Set folder to see which files they have been assigned and access them from there.

Dynamic Sets Folder

The Dynamic Sets folder (the old *Search* Folder in previous versions) also stores meta-folders, but these contain Search Results based on the parameters you set for it. For example, if you want to collate all the Files that are in a specific group (e.g., *Journal Articles* written after 1999), you can create a Search Folder with specific criteria to only contain Project Items that fit those criteria. **Please note** that every time you open a Search Folder it runs the search again and could take a while to load the results.

Example: Create a Dynamic Sets Folder for *Interviews* conducted by *Henry*.

To create a new **Dynamic Sets** folder, go to the **Create** menu tab (or right-click on the higher-order **Dynamic Sets** folder and select **New Dynamic Set...**) then type in a name (e.g., *Henry's Interviews*) and description (optional). Then click on the **Search Criteria** tab. Choose a location to search within from the **Look for:** drop-down menu (e.g., *Files, Externals & Memos*) and select your search criteria on the **Intermediate** or **Advanced** tabs. In this example, on the **Intermediate** tab tick **Classified items where** and click **Select**. In the **Interview** Files Classification select *Interviewer*. Then from the new drop-down menu choose **equals** vale and in the next select *Henry*. Then click **Apply** then **OK**. The results of the search then appear in the folder.

Notes

The **Notes Area** of the Navigation pane is also useful for collaboration. You can use the Memos feature to communicate any insights or findings you came across working with the Project and share information about what you have done, where you are up to, etc.. See Also Links may also be useful for communicating with members about the relationships you have found between the data and other Project Items.

This Area stores links to project items in folders to make them easier to organise and find. It is particularly useful if you are collaborating with other researchers on the same project.

- **Memos:** any memos you have made in your project are stored here.
- **Framework Matrices:** create and store matrices to help you take notes in a table format.
- **Annotations:** any annotations you have made in your project are linked here.
- **See Also Links:** any hyperlinks you have made between project items.

Within a Document/Code you can **show/hide** the **Annotations** and **See Also Links** you need to look on the **Document Tools** tab when a document is open, and tick/untick the appropriate boxes in the **View** grouping. A new window will appear at the bottom of the document, with tabs for each.

Creating Annotations

Select the content you wish to annotate and on the **Document Tools** tab click **New Annotation** (or right click on the selection and choose New Annotation). Enter the annotation text at the bottom of the **Detail View**. Annotated content will be highlighted in [blue](#), there will be a comment box icon next to it and the text will be displayed in the **Annotations** tab at the bottom of the window. This text can also be included in any text searches and/or queries.

Creating See Also Links

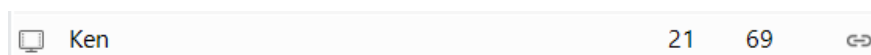
Example: Link text in the *Barbara* Interview to the *Marsh* image.

Select the content you want to link from (e.g., a selection of text from the *Barbara* Interview), and on the **Document Tools** tab, click the **See Also Link** drop-down menu and select **New See Also Link**. Click the **Select** button and locate the Project Item you want to link to (e.g., *Marsh* in the *Area and Township* folder), and click **OK**. Linked content will be highlighted in [pink](#), there will be a link icon next to it and the linked item will be displayed in the **See Also Links** tab at the bottom of the window – this also acts as a [hyperlink](#) to the Project Item.

Creating Memos

You can use memos to record any ideas or insights as you progress in your analysis. These can be linked to **one** specific **File**, **Case** or **Code** or **Unlinked** (stand-alone). Memos can include text, tables and annotations. In addition, you can code the content of memos. You can also import existing memos into the Memos folder.

Project Items that have linked memos display a link icon (see below). If this icon does not appear, go to the relevant List View (e.g., *Interviews* folder) and on the **Home** menu tab click on the **Workspace** icon drop-down menu, and select **Customise**. Select **Memo Link** and click on the >> button to move it into the **Selected columns** box, and click **OK**.



Example: Create an Unlinked Memo for *Things to Do* with a Table.

To create an unlinked memo, on the **Create** tab, click the **Memo** icon (or right-click on the **Memos** folder and select **New Memo**). Enter a name (e.g., *Things to Do*) and (optional) description, and then click **OK**. The memo will open in the **Edit Mode** so you can enter content. To add a table to in your memo, on the **Memo's Edit** tab, click the **Table** icon on the right-hand side. Choose how many row and columns you wish to include and click **OK**.

Example: Create a **Linked Memo** for the *Charles* Interview.

If you want to link a memo to a Project Item (e.g., the *Charles* Interview file), right-click on the Item then select **Memo Link** and then **Link to New Memo**. If you already have an existing unlinked memo you wish to link it to, select **Link to Existing Memo** and select the **Memo** from the list of the available ones. Enter a name and (optional) description, then click **OK**.

Literature Reviews with NVivo

As with Qualitative Data Analysis, there are many different techniques recommended and the following is only what I have found works well for using NVivo to help write Literature Reviews. Instead of the focus being on coding the literature documents themselves, I find it is more efficient to **code your own notes** on those documents. It is also a good safeguard against misinterpreting the content by not having the full context and accidentally quoting authors directly without attribution.

The disadvantage of directly coding the documents as you read them, is that this will result in NVivo compiling a range of references which are essentially direct quotes. Once you have coded dozens of documents, it's almost impossible to remember enough about the "big picture" of the individual documents. It is crucial to consider the global elements of the text in order to properly interpret and critique these snippets of information. For example: what were the preceding arguments and does this follow? What was the general approach and attitude the author took to the subject matter (e.g., school of thought, biases demonstrated etc.)? How did they arrive at these conclusions based on previous research? Was their methodology sound? If you only rely on coding the text, it will take a lot more effort to go over the literature again to place it in context. This is why I recommend coding your own notes.

The advantage of coding your own notes on a document, is that NVivo will compile your own critique, written in your own words with full awareness of the context of the whole document, for you to then restructure and clean-up accordingly. You can code your notes to specific Themes and also to the section of the Literature Review in which it belongs: evidence for X, gaps in previous literature, etc..

Your notes could be the only documents included within NVivo for your review. You could create these externally and import them or create them within the Project. It can also be beneficial to import links to the research documents themselves as **External Files** for easy reference and to find extra information. In this way you can also attach your notes to the original documents for easy reference. You could also import the entire documents as **Internal Files** if you want to create **See Also Links** to the relevant content referred to in your notes, like quotes and good examples, or to search for content you have lost track of.

Linking Notes as Memos to Internal Files

To Create a Note as a **Memo** for each PDF document you have imported as an **Internal File** right-click on the document in the **Files** area and select **Memo Link --> Link to New Memo**. Give the Memo a name which identifies it as belonging to that document (e.g., "Abbott (2006)"). This will make it easier to see which note belongs to which article when you open a **Code** (it will be written as Memos/Abbot (2006) in the blue hyperlink above the quote). Then just type your notes into this Memo for the article in question. When you've finished your notes, code the information to the relevant Code(s) for your Literature Review. You will find all your Memos in the Sources Area, in the Memos Folder.

Importing Literature as External Files and Create Notes

Every time you import a document as an **External File**, NVivo creates a link to the file itself as well as a blank Memo associated with it. To import an **External File** right-click in the list view of the **Externals** folder in the **File Area** and select **New External**. Give the new **Link** a name which identifies it as belonging to that document (e.g., "Abbott (2006)"). Click on the **External** tab, and select the **File Type** (e.g., *File Link*) and **File Path** to the document to create a link to that File on your computer. Initially it only searches for text documents, so if you want to import a PDF or something else, go to the drop-down box next to the **File name** box and select the appropriate file format. You can also enter a **Location Description** and define the **Contents** for more file management options if you wish. On the **Attribute Values** tab you can give the document a **File Classification** (e.g., *Reference*) and also enter its Attribute Values. Then Click **OK**. This will automatically create a new text document associated with your file, in which to write and code your notes. You can open the **note** by right-clicking on the file in the **Externals** file folder and selecting **Open External**. You can open the linked document itself, by right-clicking and selecting **Open External File** instead.

Note that it's important to ensure the file path is always valid or the link will be broken. This means you need to keep that file in the same location while you are working on the project.

HANDY HINT: Consider creating a second set of Codes based on the structure of your Literature Review (e.g., History, Relevance of the Research, Theories, Schools of Thought, Gaps in Literature, etc.). This will help you collate the notes that are relevant for each section of your Review.

Importing Bibliographies

You can import bibliographical data and linked files from the following supported reference management programs: **EndNote**, **Mendeley**, **Citavi**, **Zotero** and **RefWorks**. When you do not have a file associated with a bibliographic entry it will be imported automatically as an **External file**, but you can also choose to import all of your references (with and without linked files) as **Externals** (recommended) with links to available files stored on your computer. If you choose to import the files directly into your NVivo Project, they will be stored in the internal **Files** area.

Bibliographical information is imported as a complete **File Classification Sheet**, including all relevant **Attributes** and **Values**. **Abstracts** and **Keywords** are also included in the **Classification Sheet**, but you also have the option of importing these as well as any **Notes** you have made in the reference tool as **Linked Memos**. In addition, you can **Export** Classification Sheets from NVivo to reference tools in *.ris or *.txt format.

To make this process as smooth as possible, make sure that **all your references** that need to be imported as both links to **External** and **Internal Files** into NVivo AND the EndNote reference library **are on the same computer/drive as the NVivo Project**. This is important so that:

- NVivo can access them for importing,
- NVivo can access them when you want to work on references that are imported as **External** files.

As mentioned earlier, **External files** are stored as **file paths to the original document** stored on your computer/drive. For the file link to work, **it needs to stay in its original location on import**, otherwise the link will be broken. You can choose to import the file into the Project later if you wish, but it's not always necessary or desirable to do so.

If you have already imported some of your reference files beforehand, NVivo will **check for duplicates** and not import them a second time. **Note:** this only applies to **EndNote** data. It matches based on EndNote ID, but if this isn't available, by title (default), or author and year. If the file contains attachments etc., these won't be imported again so your existing file is preserved. If you are working on a **Mac**, you will have to update the file information for those existing Files. If you are working on a **PC**, NVivo can link the reference information to the file already imported, but you will need to verify the information is correct for each existing file. If you have a **large reference library**, consider "**chunking**" your import: multiple smaller groups of references at any one time.

Example: Importing bibliographical data from EndNote.

In **EndNote**, export your references as an XML file. By going to the **File** menu tab, then choose **Export** and **Save As Type: XML (*.xml)**. Make sure the "Export Selected References" box is ticked.

In **NVivo 14**, click on the **Import** tab at the top of the screen, then the **Bibliography** icon, and select *EndNote*. Select your EndNote XML file, then click **Open**. Choose how you want to **name** the sources (e.g., by Title or Author). Choose if you want your references in **one or separate classification tables** for each type of reference (e.g., one for books, one for journals etc. but one single table is usually easiest to manage). Select **Import source content** from file attachments, URLs, or figures where available. Only one file per reference will be imported. If there are multiple (e.g., it includes separate graph files) by default the first file attachment only is imported. If you want to import a different file, click the **Advanced** button on the **import** dialog box and select the file you want to import for that reference. The path and file name for all file attachments, URLs or figures are recorded in the File Classification **Attribute** values. Next, if you have **Abstracts** that are greater than 512 characters in length, select *Create memos from abstract, keywords and notes*. By default, only the first 512 characters are imported into NVivo, so this step ensures the entire Abstract will be accessible as a **Memo** in NVivo. Then select *Assign attribute values to memos*.