

## NVivo 7 Tutorial 5:

### Nodes and Coding

Nodes – the containers for ideas and coding – should be familiar by now. They were explained in Tutorial 3, where the exercises created nodes to hold references to all the material about a case. That tutorial also taught one sort of “descriptive coding”, the storing of attributes (e.g. gender) and assigning of the relevant value (e.g. female) to each case. Revisit that tutorial for techniques of doing this manually or by table import.

But when qualitative researchers *code*, they are usually doing something interpretative, not merely descriptive. This tutorial shows techniques for doing qualitative coding. It introduces ways to create the categories for thinking about your data, to identify new categories and ideas from the data, and to gather material about those ideas.

In it you will learn how to:

- Create nodes from prior ideas;
- Code at existing nodes;
- Create nodes and code “up” from meanings in the data;
- Create and name new nodes “in-vivo”, from the words in the data;
- View coded data and its context;
- Work with coded data, coding on to other nodes;
- Auto-code data records that are structured, using headings.

For advice about creating categories and coding, explanation of the differences between qualitative and quantitative coding and the purposes for which qualitative researchers use coding, go to Chapter 5 of *Handling Qualitative Data*.

For more detail about coding processes in NVivo 7, go to the online Help.

### Focusing on a document

To start this tutorial, as with the previous one, you need to concentrate on one document in your project.

It may be the document you worked with in the previous tutorial; it’s interesting (but not necessary) to combine writing and linking techniques with those of coding. If you want to move to a different document, read it through before you begin coding on computer Now, go back to the start of your document.

The simplest goals of coding are to identify the categories for thinking about your data and to gather at a category all the data about it.

In these examples, the document is one of the interviews in the sample project on Volunteering, the interview with “Anna”. You can conduct these exercises with any source (document, external or memo) in your own project.

# 1. Making a node

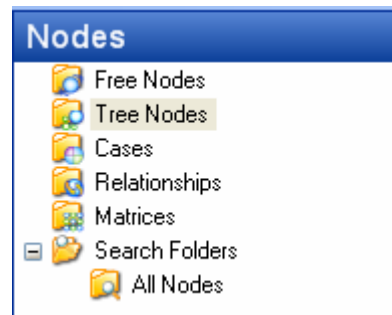
Where do the categories for thinking about your research come from? Researchers coding in qualitative research often create categories, “down” from their research questions and designs, before they start exploring the data. In NVivo, those categories and the coding you do are stored at nodes.

## The node areas

In the Navigation View, click **Nodes** to view the different areas for nodes.

These provide folders for:

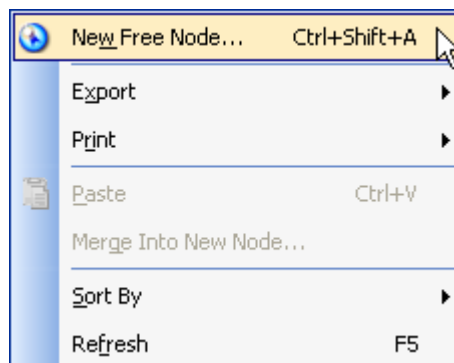
- nodes “**Free**” of organization
- nodes in catalogs or “**Trees**”
  - **Cases** (see Tutorial 3)
- nodes for coding **Relationships**
  - **Matrices** (see Tutorial 9)
- and to see nodes all in one list, **All Nodes**.



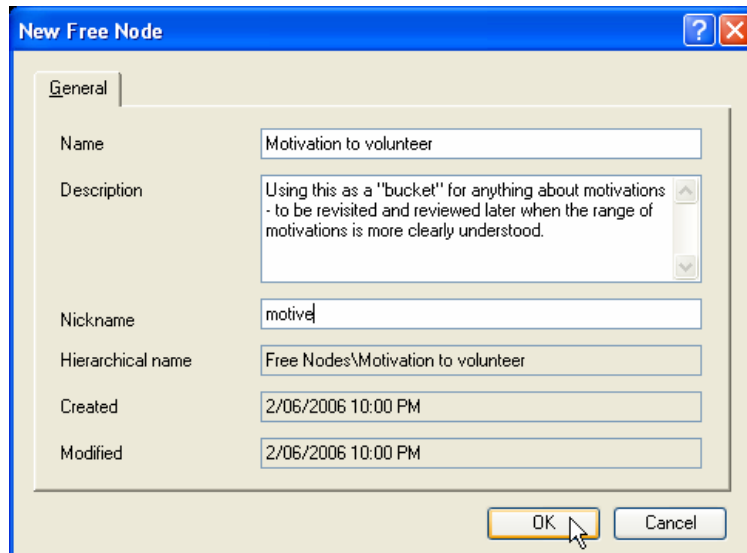
The next tutorial covers Relationships and the managing of nodes in trees. Here you will code just at Free Nodes.

## To make a node

1. Using a memo or model in NVivo, or if you prefer, paper, or a white board, sketch a beginning list of the categories your project is about – topics or ideas about which you wish to collect data. (For example, in the Volunteering project you might be curious about what motivates volunteers or the images of volunteering.)
2. Click on **Free Nodes**. And click in the empty **List View**.
3. Just as for making new documents, there are many ways to make a new node.
  - From **Project** menu OR **Context** menu, select **Create a Free Node**.
  - OR use the **New** button, to create a **New Free Node in This Folder**.
  - OR use the fast key, **Ctrl+Shift+A**.



4. Name the new node, and if you wish, add a description.



5. Check the information in the **List View**. Note that the node is showing that it codes no Sources and (not surprisingly!) has no references to content. It is a useful habit to scan the nodes you create, watching for the ones that show no sources coded there, and wondering why they don't have coding.



6. Continue creating and naming nodes for any broad topics or concepts you expect that your project will require. If wish to change the properties of a node, select **Free Node Properties** from **Project** or **Context** menu.
7. You changed your mind? Select **Delete Node** from the **Project** or **Context** menu – or hit the **Delete** key.

You may wish to continue reading and looking for data about the categories for which you already created nodes.

## Placing your nodes

In Tutorial 6 you will learn the ways of moving nodes around, and using tree structures to represent their logical relations. If you wish to tidy the “starter” nodes you've created, go to that tutorial for the techniques of cut, copy, merge and paste.

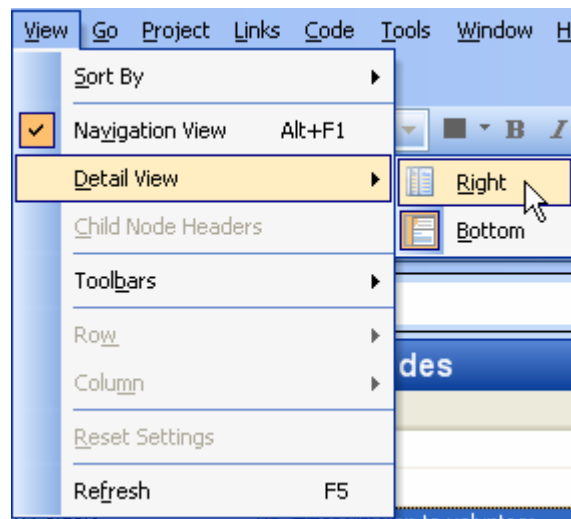


You may later wish to revisit the early ideas as they were represented by these first nodes. They offer a way of recalling your early assumptions, what you thought then would be important, what the literature alerted you to. One way is to make a Set of all the nodes that you create at this starting-out stage of your project. But if later you delete a node, of course its shortcut will be deleted from that set. Another way is to store a report o your nodes at this stage, and later stages. (Go to Tutorial 6 for ways of reporting your nodes.)

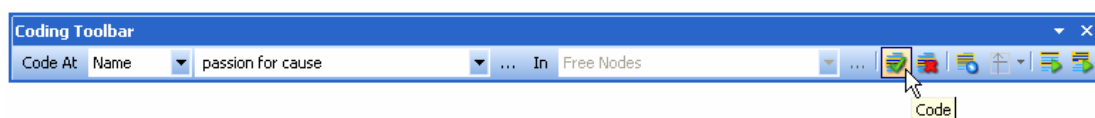
## 2. Coding at an existing node

### To set the screen to suit your coding

1. In the folder of **Sources**, select **Documents** and from the **List View** select the document you wish to read and code. Double click to open it in the **Detail View**. This window, in which you annotated and linked a document in the previous tutorial, also offers several ways of coding.
2. Click on **Nodes>Free Nodes** and the **List View** shows your **Free Nodes**.
3. Now set the screen to suit you. Most researchers when coding wish to see all their nodes displayed beside the content being coded. From the **View** menu, select **Detail View>Right**, to see the panels of the Navigation Window vertically.



4. The **Coding** toolbar offers ways of selecting nodes and buttons for coding functions. You may wish now to move it to the bottom of the Detail View.

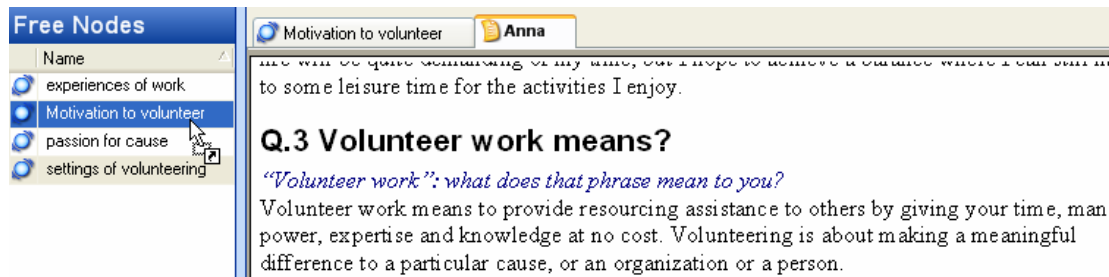


5. Hover over the icons, or go to the end of the toolbar to check the names for each option. You may wish to hide some of them – but first, check what they do! One will be wanted often: the green tick over lines of text that says Code.

Now you are ready to code at your existing node, in any of several ways. You can drag and drop, use the menus or use that coding bar.

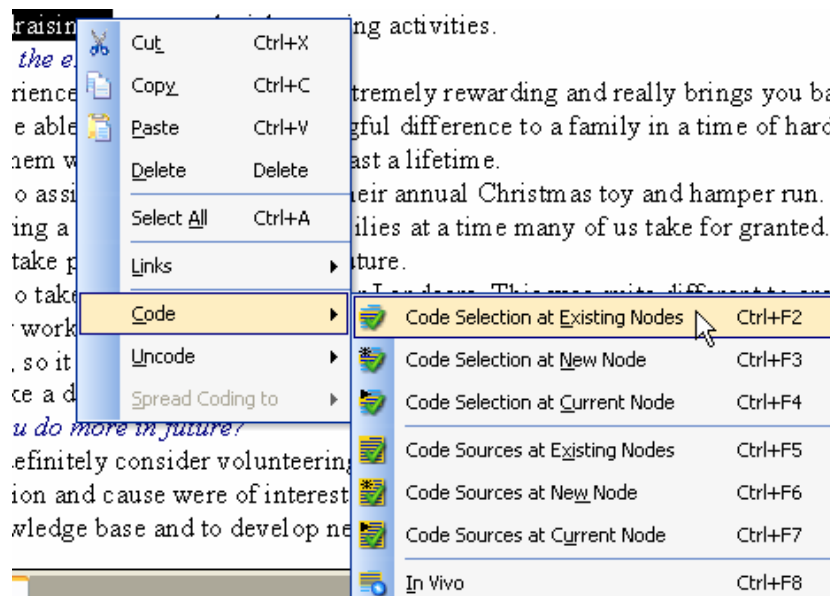
## To code by drag and drop at an existing node

1. Select some text that you wish to code at the Free Node you have created.
2. Drag the text onto the node. (the mouse icon shows that it is being “dragged” and then that it has “dropped” what it was dragging.)



## To code at an existing node using the menus

1. Select some more text that you wish to code at an existing node.
2. From the right mouse Context Menu or the **Code** menu, select **Code>Code Selection at Existing Nodes**. Note the other options: to code at a new node, the node currently showing in the coding bar, or to code at any of these whole source(s).



3. NVivo asks what node do you wish to code at, by offering the **Select Project Items** box. Select the node, *or if you wish more than one node*, and click **OK**.
4. The node selected appears in the slot for a node name in the Coding toolbar.

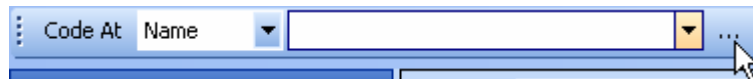


To code further content at this node, select it and click the Code icon.

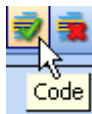
## To code with the coding bar at an existing node


The Coding Bar can be used directly. Check if this suits your style.

1. Select some more text that you wish to code at an existing node.
2. Check what node is in the slot in the coding bar. When you click the Code button, it will code at the node showing there.
3. To select a different node – or nodes – to code at, set the coding bar to **Code At| Name**, and click the [...] button to Select Nodes.



4. From the **Select Project Items** box select the node or any number of nodes at which you wish to code this text.



5. Click . Note that if you change your mind, the Uncode icon is the next on the bar!

Those prior categories will probably not suffice for what you are now seeing in the data. Researchers sometimes start this way.

But almost always, most categories are discovered and created “up” from the data, as they read and interpret data sources. This is the most usual form of qualitative coding.

You could of course create new nodes as you discover new categories, and continue as above, making the nodes first, and then coding at them by dragging the text to them or selecting them and clicking Code.

But NVivo allows you to combine these processes, making the nodes and coding at them as a single task. As you work with your data, you’ll make a lot of nodes!

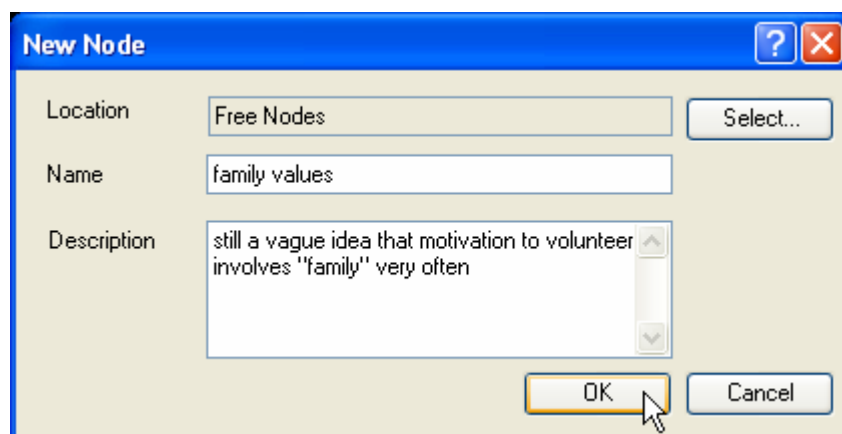
This is the next task. If you are new to qualitative coding, you may like to follow the steps in Chapter 5 of *Handling Qualitative Data*.

### 3. Creating new nodes “up” from the data

As you read the document, you may see a category “emerge”. You can make the node and do the coding as one task, either with the menus or with the Coding Bar.

#### To create a node by coding (using the menus)

1. Highlight some text you wish to code.
2. From the Context Menu, select **Code Selection at New Node**
3. In the **New Free Node** box, type a name for this node – the category or theme - and, if you wish, a description. Click **OK**.



The screenshot shows a 'New Node' dialog box with the following fields:

- Location:** Free Nodes (with a 'Select...' button)
- Name:** family values
- Description:** still a vague idea that motivation to volunteer involves "family" very often
- Buttons:** OK (highlighted), Cancel

4. The node is created and the coding done. Your new node appears in the Free Nodes List View and in the **Name** slot on the **Coding** bar.
5. If you wish to place the new node in another node area, use **Cut** and **Paste** as described in the next Tutorial.



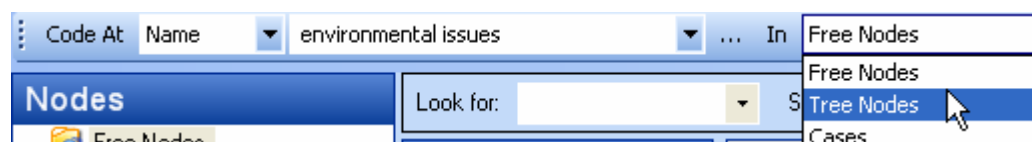
The process you just conducted is often the most exciting and important one early in a project. It's worth becoming very familiar with this swift task, so the creation of a node and coding of data at it feels like thinking aloud.

Note there is a shortcut - **Ctrl+F3** - for coding a selection at a new node, and when the **New Free Node** box appears, if you wish to place your new node in Free Nodes, you need only type the name and press return - the rest is done for you.

Try working through some rich data, making new nodes as they occur to you, using the shortcut, type name, press return.

#### To create a new node whilst coding (using the Coding Bar)

1. Highlight some text you wish to code.
2. On the **Coding Bar**, check that the slot is set to **Name**.
3. Type the name for this node. (If a name is in the slot, highlight and type over.) Select the node area it will be in.





4. Press Return (that's fastest!) or click **Code**.
5. The node is created and the coding done.

### To create an In Vivo node and code at it

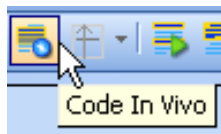
You can also create the new node by naming it with the word(s) in the text you are coding.

This is called “in vivo” coding, a technique very important to researchers who wish to record the categories emerging from their data (see *Handling Qualitative Data* p.95.) It's useful when the data provide specially suggestive or meaningful concepts. For example, in the Volunteering project, Anna used the term “self worth” to explain motivation to volunteer, a new idea which you might like to store.



When you do in vivo coding, you name the new node with all the text you selected. Make the selection brief and relevant - long node names are awkward to use.

1. Highlight a word or a *few* words in the text with which you would like to name a node.



2. Click the “Code In Vivo” button on the coding bar, (or use the **Code** or **Context** menus)
3. The node is created (in Free Nodes) and the coding done. Your new node appears in the Free Nodes List View and in the **Name** slot on the **Coding** bar, so you can code again at that node immediately.
4. Note that a shortcut is Ctrl+F8. Create a new node using that shortcut.

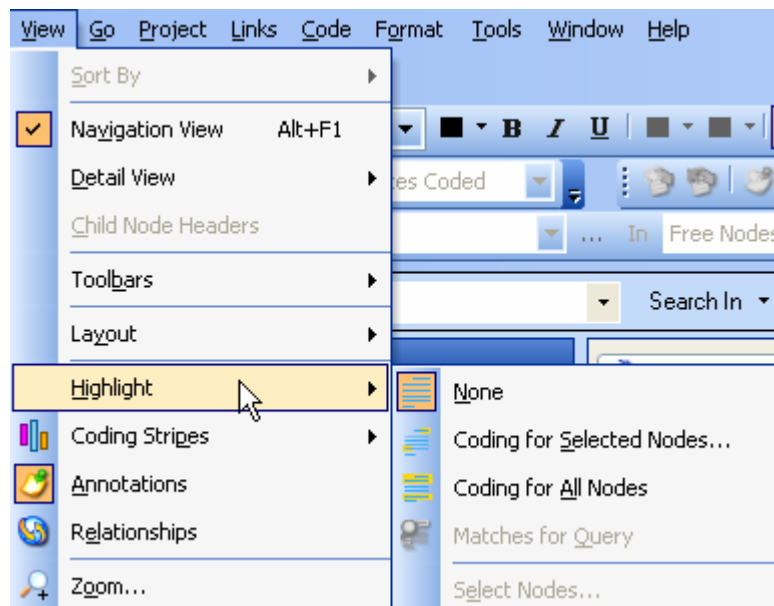
	Code Selection at Existing Nodes	Ctrl+F2
	Code Selection at New Node	Ctrl+F3
	Code Selection at Current Node	Ctrl+F4
	Code Sources at Existing Nodes	Ctrl+F5
	Code Sources at New Node	Ctrl+F6
	Code Sources at Current Node	Ctrl+F7
	In Vivo	Ctrl+F8

## 4. Viewing your coding

There are many reasons why you may wish to see what coding you've done, or what content is coded at a node – for example, to review your coding, compare with a colleague's coding, browse to check what else is coded in this source at that node, or simply to get back to coding where you left off.

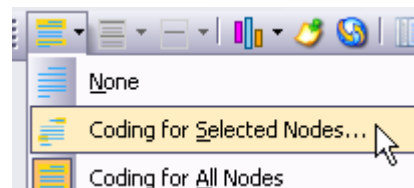
NVivo provides two ways to view your coding as you work. Both are on the **View** toolbar (and the **View** menu and right mouse **Context** menu).

When you are in the Detail View of a source or node, **Highlight** and **Coding Stripes** are available.



### To Highlight Coding

1. In the Detail View of the document you coded, click **Highlight**. (or select **Highlight** from the **View** menu).
2. Select the option you want

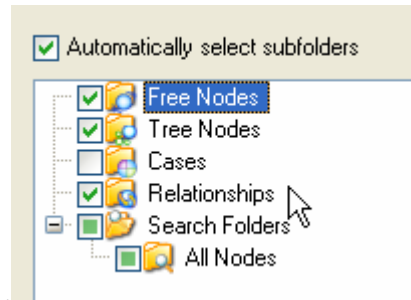


3. In the **Select Project Items** window, select the node or nodes you are interested in. The coded text is highlighted yellow.

Why would you select **Coding for All Nodes**? This will show you everything that has been coded – and thus everything you haven't coded yet – a useful way to see how your coding is progressing!



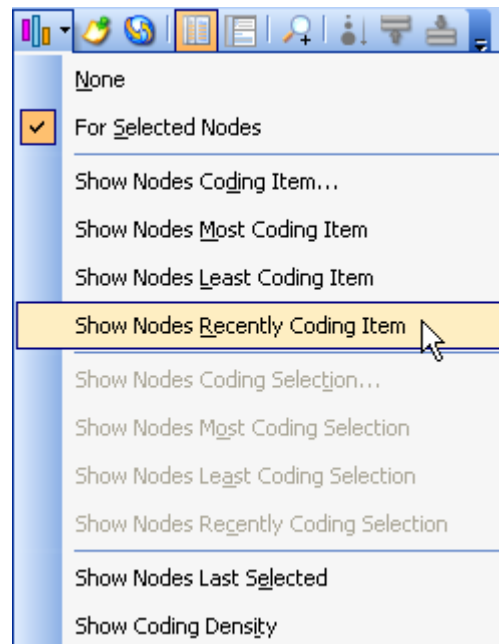
The whole document may be highlighted when you select Coding for All Nodes. Why? Probably, as in Anna's interview, the entire content is coded at a Case node. To exclude Case Nodes (or any other node type you don't want), in the left pane of the Select Project Items window, click Automatically select subfolders, and then select all the folders whose nodes you want highlighted.



## To use Coding Stripes

NVivo will show in the right margin of a Detail View (source or node) colored lines that show where content is coded at up to seven nodes, and a grayscale line that shows the Coding Density for that content.

1. In the Detail View of the document you coded, click the icon for **Coding Stripes**, or select from the **Project menu** or **Context menu**.



2. Select to **Show Nodes Coding Item**. The **Select Project Item** box will appear.
3. Select which nodes you are interested in and click **OK**. The stripes appear for those nodes. If you code some more, at the nodes for which you are showing stripes, the lines will update.
4. In **Detail View**, the coding stripes appear where there is coding at each selected node. Each selected node will be marked by its specific colored line throughout **Detail View**, so you can scan for coding at each.

*Your thoughts about Louise and her volunteer work?*  
 Louise clearly has a passion for conservation having traveled internationally. She is likely to have qualifications relevant to her contribution to these projects. Louise's efforts are a valid contribution to the general improvement of society. Perhaps experiences in her own personal life have led her to become involved in this project.

**Q.7b Housing in Honduras**  
*Your thoughts about Ross and the work he is doing?*  
 Ross is making a tangible impact, and the impact is immediately apparent. Ross appears to have a passion for helping the poor and underprivileged and an interest in global issues or the development of third world countries.

**Q.7c Food program in Melbourne**  
*Your thoughts about Katie and her volunteer work?*  
 Katie is grateful for what she has and wants to give something back to society in the form of making a difference to the lives of the less fortunate. How old is she?  
*The story says she is 72 years old.*  
 Well at that age, I would think Katie is motivated by the social interaction she gets from her volunteer work.

**Coding Density**  
 qualifications  
 motivation  
 effectiveness  
 personal qualities  
 Motivation

5. Hover over any stripe to see the node's folder and full name.
6. Right mouse to select to **Highlight Coding** at that node throughout the Detail View, to **Open Node** or **Uncode**.

Explore the options so you can use the stripes strategically. Two tips may assist:

- To use coding stripes rapidly to view current coding, select to show Nodes Recently Coding Item.
- Show stripes for just a **Selection** to focus on nodes coding that passage. Most sources or nodes will have coding from a large number of nodes, but if you make a small selection, you will most clearly see what codes it.

## To use the coding density stripe

The Coding Density stripe is shaded to indicate number of nodes coding this segment of the source content. Hover over the stripe to see all the node names.

If you wish only to monitor what coding at *any* of your nodes applies to the content, without showing the colored stripes for particular nodes, from the **View** menu or the Coding Stripes icon, select **Show Coding Density**.

The Coding Density Stripe offers a quick way to check on the state of your coding.



You went off for coffee and need to know where your coding work had taken you in a source? Show the Coding Density stripe and it will be obvious! (Remember that if you coded the source entirely at a case node there will be at least one node coding past where you had worked before coffee.) Alternative tricks: place an annotation noting things to remember when you return to the coding - you can use a Text Search Query to search just annotations in just one source for a word you inserted. Or simply edit into the text where you finished coding a keyword like CODED TO HERE and use the simple Ctrl+F (find content) to locate it.

## 5. Working with Coded Data

The primary goal of coding is usually to gather and review and work with all the material about a topic or concept. You were coding data in order to be able to see all that coded material together, to interpret its variety and to explore its context. Now to the node!

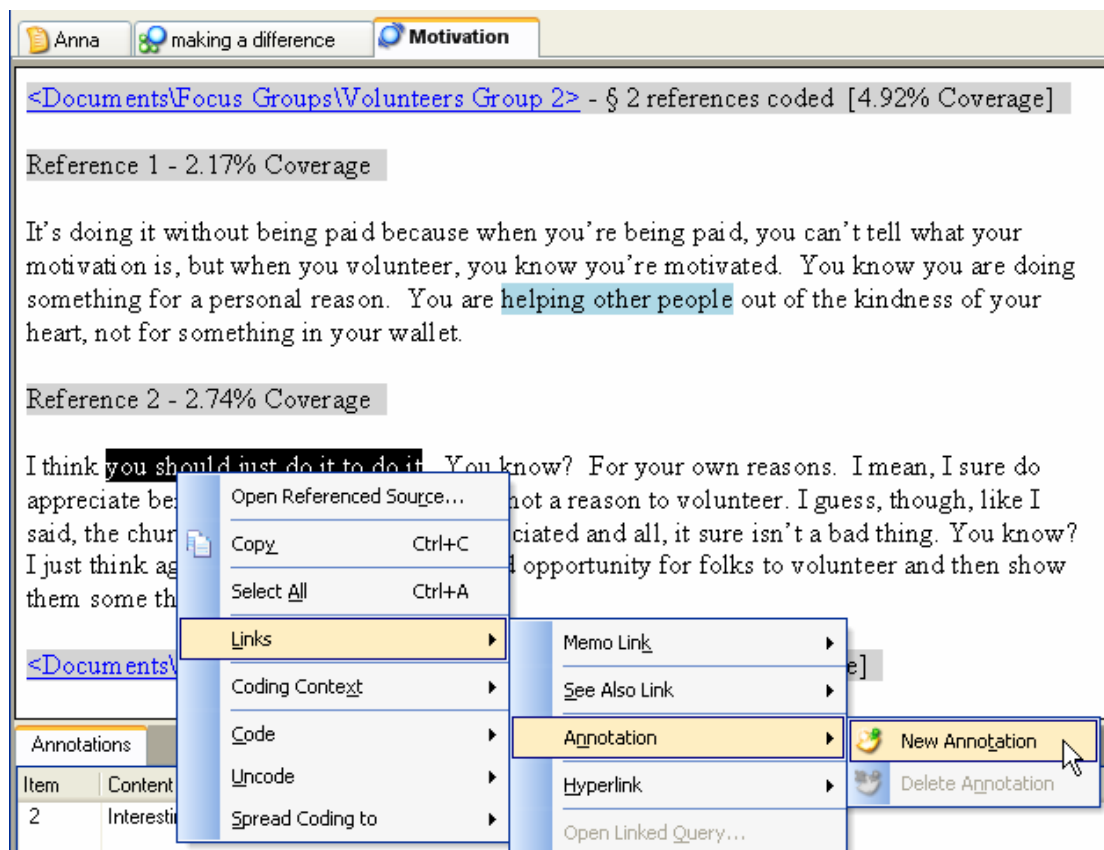
You can view the coded content of a node in exactly the same way as you view a source – in **Detail View**. Moreover, you can code that content, to other nodes, just as if you were coding a source. This is called **coding on**.

### Working in the Node Detail View

1. In the List View of any node folder, double click on a node you've coded at. The coded segments appear in **Detail View**. Each segment has identifying information for the Source and the number of references coded from that source at this node.

Are you still using the online Help? Go to [Help and Opening Nodes](#) for full detail about what is showing in the pane.

2. Click on the hyperlink above a segment to open the Source from which that segment was coded.



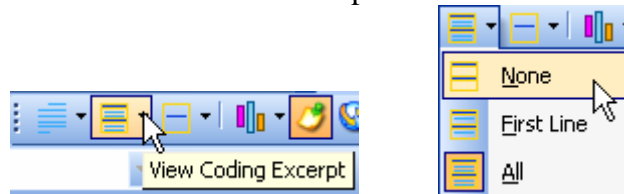
The screenshot shows a software window with a tab labeled 'Motivation'. The main content area displays a text segment with a context menu open over it. The menu includes options like 'Open Referenced Source...', 'Copy', 'Select All', 'Links', 'Coding Context', 'Code', 'Uncode', and 'Spread Coding to'. The 'Links' menu is expanded, showing 'Memo Link', 'See Also Link', 'Annotation', 'Hyperlink', and 'Open Linked Query...'. The 'Annotation' option is highlighted, and a sub-menu is visible with 'New Annotation' and 'Delete Annotation' options. The text segment being edited is: 'It's doing it without being paid because when you're being paid, you can't tell what your motivation is, but when you volunteer, you know you're motivated. You know you are doing something for a personal reason. You are helping other people out of the kindness of your heart, not for something in your wallet.'

3. Note that any annotations or other links that you made to this segment of the source will appear and are live, just as they would be in the coded source. And you can place a new link, just as you would if you were in the source from which the extract came.

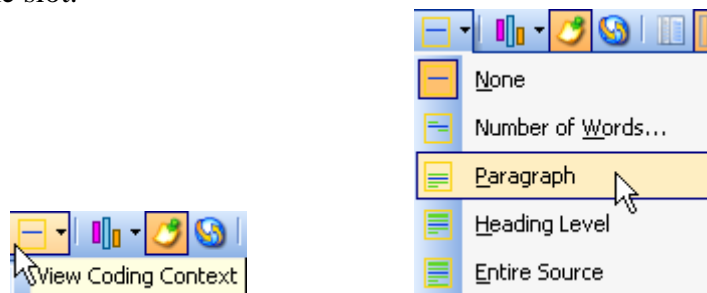
## To work with the coded content and its context

Now explore the options that allow you to see less or more of the text of every excerpt from sources that you have coded.

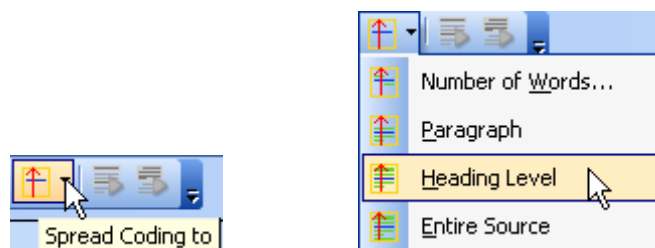
1. First, adjust what you are seeing for your purposes. You may wish to **reduce the amount of text** you see as a **Coding Excerpt**, to get a big picture. From either the View menu or toolbar, you can select to see all or none of the coded text, or just the first line of each excerpt



2. Now to see more of the context of each segment, to understand for example what question the speaker was answering when she said that. From View menu or toolbar, select **Coding Context**. Nominate how wide a context you want to be shown. NVivo will show that extra context in the Detail View in a pale color. If you wish to improve the coded selection by coding some of this context, select the words to be included, and click **Code!** This node is waiting in the Name slot.



3. A third option allows you to **spread the coding to a wider context** without first viewing the extra content. From the **Coding** menu or toolbar, select **Spread Coding**. Again, you can select a small or very wide spread. That wider context is coded at the node. **Changed your mind? Undo!**



4. Often when reflecting on a coded passage, you may wish to return to rethink the original source. You can jump directly to the place in the source from which the coded passage comes. Click on the hyperlink above the passage, or from the right mouse context menu, select to **Open Referenced Source**.
5. Wondering what else codes this content? Show coding stripes or highlight coding, just as you could in the Detail View of a source. Or highlight text, and select **View>Coding Stripes>Show Nodes Coding Selection**. In the Select project Items dialog, only those nodes that actually code the selected text are available to be viewed as stripes.

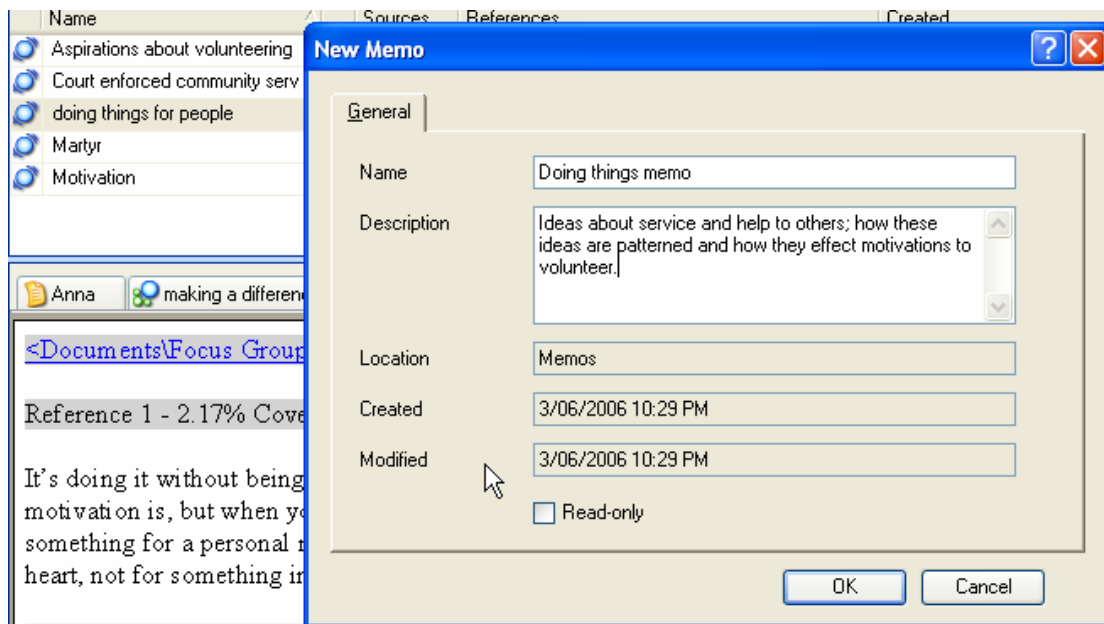
## To code on from the Node

1. Read the node's content, and consider whether there are other places to code it. For example, are there several different motivations for volunteering coded at that Free Node?
2. Select content and code it at a new or existing node, (the processes are just the same as for coding a Source). In this way you can develop your ideas beyond the original coding.

## To store your ideas about a node

Continue, reading and coding your data, working with the content coded at your nodes, expanding or revisiting context of coded passages. Create nodes as they are indicated in the text, for topics you wish to collect data on, or concepts you wish to explore. But remember to store your growing thoughts about that idea.

1. For each new category you create, unless its meaning is obvious, enter a description. You can alter the description at any stage.
2. If you find you have created a particularly interesting category, you may wish to make a Linked Memo for it. Any node can have a linked memo. Revisit the previous tutorial for the process of making a Linked Memo.



In all this work, you are creating ideas, which need logging for your analysis. The List View of **Sources > Memos** shows what Linked Memos you have made for your nodes (sort them if you wish). Click on the **Links** folder and then on **Memo Links** to see and sort those belonging to a source or a node.

doing things for people	2	2
Martyr	1	1
Motivation	12	22

## 6. Auto-coding

Not many qualitative research processes can be automated. So it is advisable to check which are sufficiently mechanical to be conducted automatically by the computer. Obviously, interpretative coding is not one of these processes! But much descriptive coding can be automated. (Tutorial 3 covered how to import attributes in tables.)

Coding of text always involves creating the node, selecting the text to be coded and coding. All this can be automated. In this section, the exercise is for auto-coding, using formatting of the document by headings. NVivo will make a node for each heading and code all the content till the next heading at that node. If you plan to autocode by heading, format the source with this in mind, ensuring that the **structure** of your headings is logical. (Don't use Heading 8 because you like the style, followed by Heading 1!) The node tree hierarchy created will follow the Heading hierarchy (ie Heading 1 will be parent, heading 2 will be a child of the previous Heading 1 and so on. These techniques do a mechanical coding process. Check the warnings in *Handling Qualitative Data*, Chapter 5 about interpreting mechanical coding.

### To format for autocoding by heading

When you type your source, either in MS Word prior to importing to NVivo, or in NVivo, create headings to name the nodes you wish to code at. Make them brief!



If you are typing in MSWord, always use the **Style** slot to create headings. Making it **BIG** and **BOLD** does not make it a heading! You can see the headings in a Word document by selecting **View>Document Map**. Anna's interview looks like this in Word.

The screenshot shows a Microsoft Word document titled 'Anna.doc'. The document map on the left lists the following questions and sub-questions:

- Q.1 Current use of time
  - Q.1a Feelings about current time use?
- Q.2 Time use ten years on
  - Q.2a Feelings about future time use?
- Q.3 Volunteer work means?
- Q.4 Volunteering experience
- Q.5 What sorts of people volunteer?
  - Q.5a Typical volunteer worker?
- Q.6 Rewards for volunteer work
  - Q.6a Incentives for volunteering?
- Q.7 images of volunteers
  - Q.7a Conservation in Sri Lanka
  - Q.7b Housing in Honduras
  - Q.7c Food program in Melbourne
- Q.8 About yourself

The main text on the right shows the following content:

**Q.5 What sorts of people volunteer?**  
Some may have a personal link to the cause, or may enjoy a pi  
enjoy sharing their skills, knowledge or qualifications to help :  
Some people may enjoy volunteering to fill in spare time and ;  
For example retirees often spend some of their time volunteeri

**Q.5a Typical volunteer worker?**  
*Can you describe a typical volunteer?*  
The typical volunteer just an everyday person with a passion f  
community.  
(For each "typical", do you know anyone like that? What do )  
I do know people in these categories and I highly respect them  
themselves and for making the time to do this when they them  
responsibilities of their own which take up a great deal of their

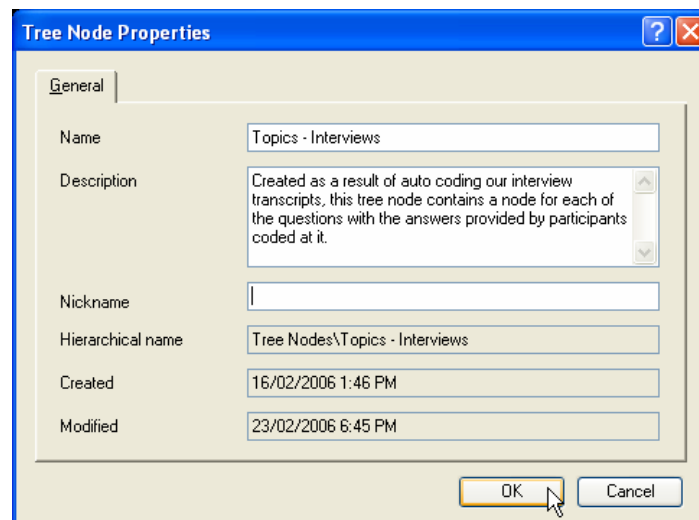
**Q.6 Rewards for volunteer work**

Note: two levels of Heading are used for brief names for each question and sub-question. The full text of the question and the answer are in (different color and font) Normal style.

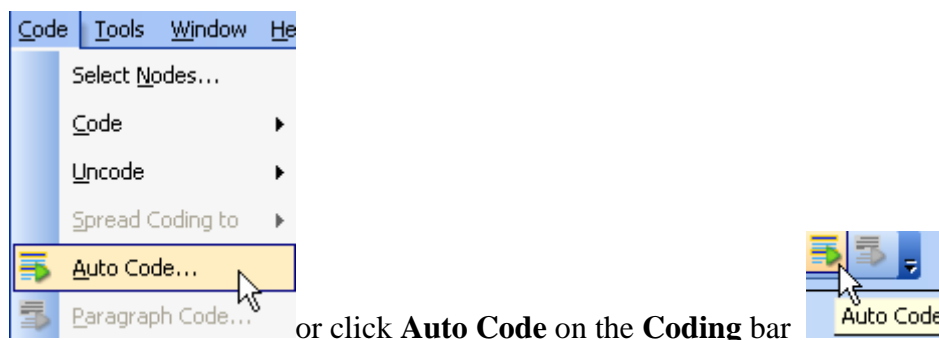
## To do autocoding by heading

In this example, we will autocode all answers to each topic posed in the interviews, creating a node for each topic and coding all the answers at it.

1. To create the nodes for each interview topic, you need to make a node below which all the question nodes can be stored. Here is an obvious use for the **Trees** area of the **Node Explorer**. Click on **Trees**, and in the **List View**, right mouse to create a node. (Or use the **Project** menu, or click on **New** and select to make a new tree node in this folder.)
2. **Name** the new node. It's good practice to note in the **Description** that these node trees are being made by autocoding.



3. Now go to the folder of Sources you want to autocode. (You may wish at this stage to import some more sources if there are several with the same formatting.) Select the items to be autocoded and select **Code>Auto Code...**



4. In the **Autocode** dialog, leave the options unchanged and click **Select**.
5. In the **Select Project Items** window, click on your new Questions tree node, then **OK**. Confirm the **Autocode** instruction with **OK**.
6. Now, check your Tree Nodes to see what you've done. The **List View** shows the nodes created and named and what coding was done automatically: in the Sample Project nine sources were coded at each topic node with one reference from each.



When auto-coding is completed successfully, this does not mean that the results are as you expected! Go to the node for one topic, double click to see in Detail View what was coded at it. It should contain each person's answer to that particular question - no more and no less. If it doesn't, return to check that your formatting was as you intended.

## Other ways of autocoding

Now check the options in the autocode dialog. Did you notice that if you autocode by heading, you could specify what heading level you were autocoding? For your project, consider how this could be used. For example, in the Sample Project, autocoding at Heading 1 coded focus group topics. By autocoding at Heading 2, Case nodes were made coding what was said by each focus group participant. It's all in the formatting!

The **Autocode** dialog also allows you to code by paragraph. (Go to **Help** for details).

You can also automate coding by text search, using the occurrence of words in the text, and NVivo's ability to code the context you specify.. For instructions on text search, go to Tutorial 8.

This concludes NVivo 7 Tutorial 5. For full discussion of the purposes of qualitative coding, either interpretatively or automatically, and uses to which these software tools can be put, go to Chapter 5 of *Handling Qualitative Data*.

You now have data, ideas about your data and have started to relate them by coding to gather the relevant data at those ideas.

Don't forget to back up your project. The next task is to manage those growing ideas, and this will change your project dramatically.