# Automatic Coding by Section in NVivo

## What is Section Coding?

You can use heading styles (or more simply 'headings') applied to paragraphs in your documents to automatically code the text in paragraphs following those headings (by automatically creating nodes based on the heading text). If you apply headings to the questions in a structured or semi-structured interview, to the names of participants or to descriptive headings in notes, the text underneath them can be coded with ease so that you can quickly get an overview of the shape of your data and be able to filter it by, for example, question or participant. Later on in your project you can combine these with other nodes and attributes for a really focused analysis of your data. They complement your analytic coding.

## *Summary of How to Code by Section*

1. Create a document in NVivo with headings.

2. Create a Tree Node to act as the root (or 'parent') node for your automatically created nodes (see *Creating a Parent Node*).

3. Tell NVivo to automatically code your document (see *Section Coding*).

## Understanding Headings and Sections

Documents in NVivo can be organised hierarchically using headings. There are nine levels of heading: Heading1 is the highest. Lower level headings are contained within (or 'nested in') higher level headings.

Text is arranged in paragraphs. Text (at least one, but possibly several paragraphs), which does not have a heading applied to it, counts in the section of the heading which immediately precedes it. Text before the first heading is treated as a separate section and is coded by section coding at the parent node.

Even though headings can be nested hierarchically, each section is discrete. This means that, in NVivo terms, a section consists of a heading and all the following text up until the next heading (at whatever level). Figure 1 shows how the coding of sections does not overlap in an NVivo document which has been section coded:
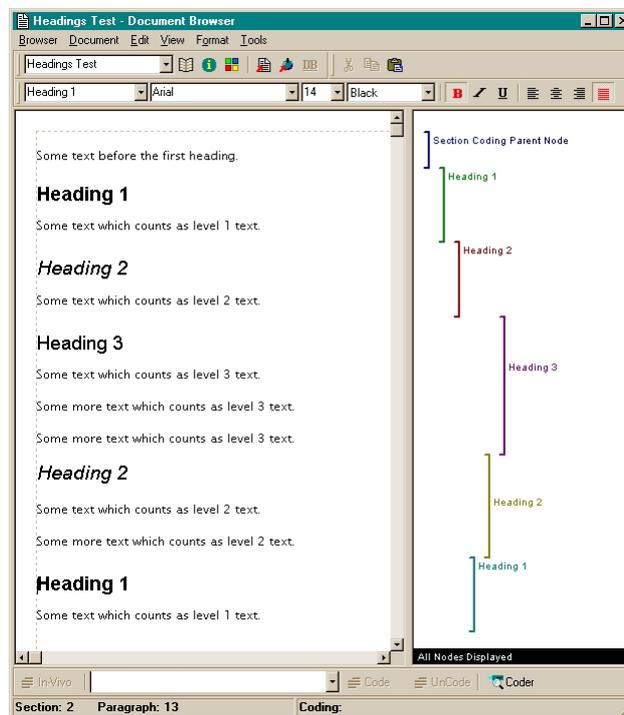


*Figure 1: NVivo Document Section Coded by Title*

## Creating Headings

Highlight the heading text (a separate paragraph) in your document and then click on the drop-down styles list and choose an appropriate heading level.  You can do this in either NVivo or Word (see Figure 2 and Figure 3 below).  Remember that with Word you will have to save the document as an RTF file and import it into your NVivo project.  It is not a problem that your document is in Word format.  It's a very common way of transcribing interviews or focus groups – especially if you don't have NVivo on your PC.  (*Technical note: 'section' has a different meaning in Word – you need not worry about it here.  Just apply appropriate heading styles to the heading text.*)
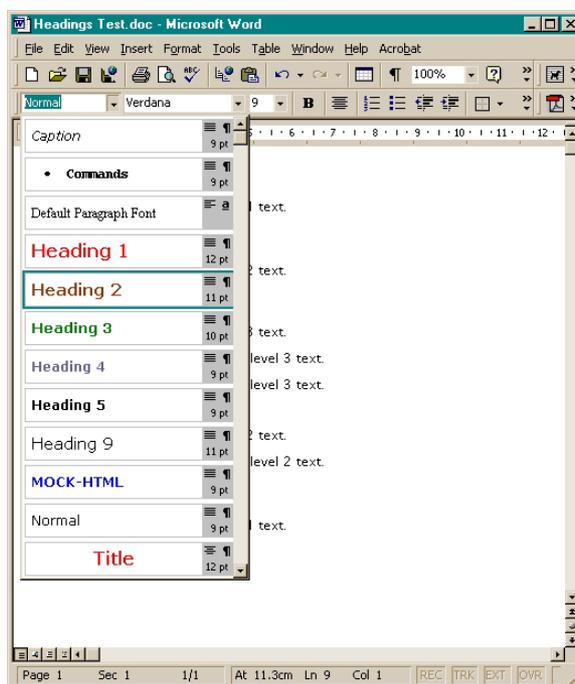


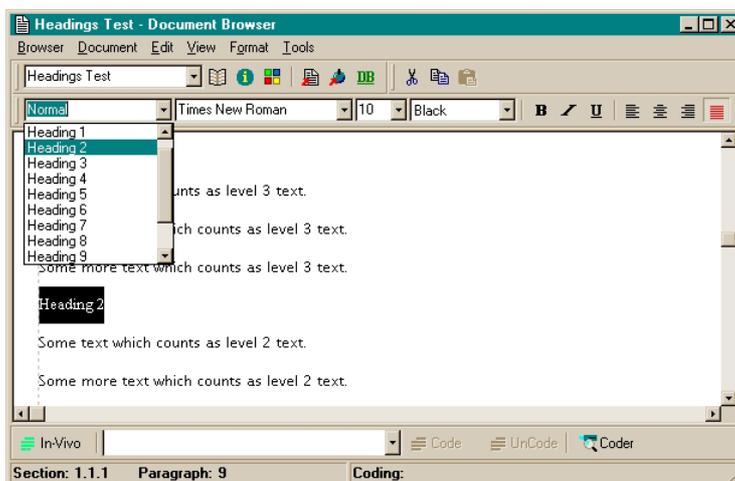*Figure 2: Creating Headings in MS Word*



*Figure 3: Creating Headings in NVivo*

You can also 'mark up' plain text documents by inserting 'tags' at the beginning of a new paragraph eg {H1}, {H2} etc to designate Heading 1 or 2 and then importing the file as a plain text document into NVivo. See the *Reference Guide* pp 180-181 for further details.

Note that there is a distinction between the appearance of a heading (the font size, emboldening etc) and its structural function.  Section coding exploits the structural, organisational function – and ignores the styling or appearance.  Relatedly, don't think that you have created a heading when all you have done is to mimic its appearance by adjusting the font etc.  Create headings as described above.

> **IDEA**  If you are about to transcribe a lot of structured interviews, it would save you time and ensure consistency to create and use a document template in Word – keying in all the questions and applying the appropriate heading styles. **File | New | Template**.  See the Word manual for more details.

# Improving Text Layout Using Word's Find and Replace

A Heading style applies to a complete paragraph so the heading text (which becomes the node title) must be on a separate line.  If you have already transcribed your data and have put each participant on the same line followed by a colon, which is common in the social sciences, you will have to edit this to make it appear on a separate line.  If the document is short, you can do this manually by deleting the colon, pressing Enter and then selecting the text and choosing a heading style as described above.  However, if it's long, it would be easiest to use Word's Find and Replace function before importing the RTF into NVivo. You can use the same technique  for applying the heading style on its own too.

1. Select **Edit | Replace** from Word's menu or press **Ctrl+H** at the same time.  This brings up the Find and Replace dialog box:
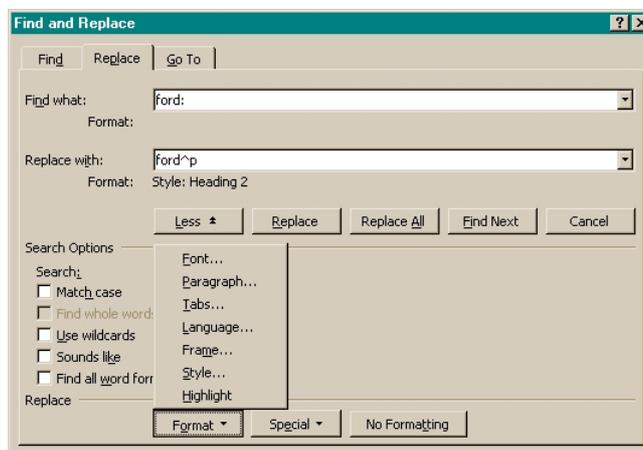


*Figure 4 Word's Find and Replace Dialog*

2. Type what you want to find in the **Find what:** box and what you want to replace it with in the **Replace with:** box. If you are using Find and Replace just to apply heading styles to all your headings (assuming there is some regularity in them), put exactly the same text in each box.

3. With your cursor still in the Replace with: box, click on the **More** button to show additional options.

4. Click on the **Format** button and select **Style**

5. You will be taken to an alphabetic listing of styles available. Type **H** to jump to those beginning with 'h' (instead of having to scroll down the whole way) and then scroll down to the appropriate heading level (in Figure 4 this is Heading 2), highlight it and click on **OK**.

    a. If you like to use colour to identify speakers, you could choose a colour selecting **Font** from the Format button menu.

6. Click on **Replace All** and another dialog box will appear telling you how many replacements were made.

7. Click **OK** and then, if you have more text to find and replace, enter it in the appropriate boxes (the format will stay until you change it to No Style) and click on **Replace All** again.  If you have finished, click on **Close**.

You should check your document carefully after you've done this.  Unless you've been particularly careful, there will be some words which were entered inconsistently.  These will have been missed in the find and replace.  You can either do these manually or correct them and redo the find and replace.

## *Restrictions on Headings*

The following characters should not appear in Headings – they will be replaced by '~' in Node Titles:

full stops (periods) – '.', colons – ':', forward and back slashes – '\' and '/', upright bar '|', angled brackets '<' and '>', parentheses – '('  and ')', question marks '?', double quotes ' " ' and asterisks '*'.

It is also best to avoid just having numbers in a heading.

Node Titles cannot be more than 36 characters in length – though for ease of use they should be a lot shorter than this (12 or less is recommended by the developers).

To view just your headings in Word select **View | Outline** and click on the button labelled **All**.  You can edit these as you would normally edit text.  To see all of your text again select **View | Normal**

# Implications of Heading Levels

Deciding which level is appropriate depends on the structure of your data, which determines how you section code it and how you are able to query it later on. There are two methods of section coding: "by title" (also referred to as 'heading text') or "by address" (also referred to as 'section number'). The following table compares them:

| | By Title (or Heading Text) | By Address (or Section Number) |
|---|---|---|
| Data Structures | Marked by speaker or heading changes eg | Order of questions is regular across a number of documents eg |
| Data examples | • Semi-structured interview, focus group or observation group.<br><br>• Field notes or notes on the literature. | • Structured interviews or focus groups. |
| Node Creation and Text Coded Determined By | Heading Text or Title eg<br><br>• each new speaker/turn-taker.<br><br>• subject headings and sub-headings. | Ordering and level of the headings<br><br>• heading text is irrelevant. |
| Action at New Section | Checks to see if text in heading corresponds to an existing node:<br><br>• If yes, uses that to code the text.<br><br>• If no, creates a new node. | Always creates a new node because it is the relative position which counts.<br><br>Node structure will be the same as the document section structure. |
| Node Levels and Numbering<br><br>(all nodes are given numbers in the order of their creation to reflect their relative position called the 'node address') | Not affected by Heading level<br><br>• all created at same level as children of the parent node.<br><br>Even nodes created by coding by title have numbers, demonstrating that they are all siblings and hence come from the same parent node. | Heading level determines node level<br><br>• creates child and grandchild etc nodes of parent node in sub-trees.<br><br>Each section and sub-section of a document has a number based on the occurrence and level of the heading: 2.4.1 is the 1st sub-section of the 4th sub-section of the 2nd section. This becomes the Node Address. |
| Suggested Heading Levels | Whatever is easiest for you – can all be the same level. Though you may want to have different levels for the document overview in the document browser (see 0*A Document Ready to be Section Coded in NVivo*) | Follow the hierarchy determined by your questionnaire structure.<br><br>Do not have any heading level gaps (eg H1, then H4) – dummy tree nodes will be created for the 'missing' levels. |
| Node Titles Basis<br><br>(NB 36 character limit) | Heading Text.<br><br>• Distinguish between similarly named individuals eg John1 and John2. | Heading Text.<br><br>• Distinguish between similarly named individuals eg John1 and John2. |
| Subsequent Occurrences of Same Heading Text | Text in section is coded at same node (if spelt in exactly the same way – though case is ignored).<br><br>• Ensure that you spell names consistently. | Hierarchical position determines the node, so repeated uses of one-word follow up questions (eg 'why?' or 'how?') are NOT coded together, but rather differentiated or contextualised according to their relative position in the tree-structure. |
| Benefits | Can pull all text coded at a node for an individual or a subject heading together - across some or all documents. | Can pull all text coded at a node for a particular question together - across some or all documents. |

## A Document Ready to be Section Coded in NVivo

When you have your document in NVivo you can see its structure outlined in the Document Explorer by selecting it in the left pane. You can expand the sections in the right pane by clicking on the plus sign. This is useful for checking how and what will be coded by section coding.

It's also useful for getting quick access to parts of your documents. Highlighting a section title and then browsing will take you to that exact point eg in Figure 5 you can jump to the highlighted Heading 3 by selecting browse:
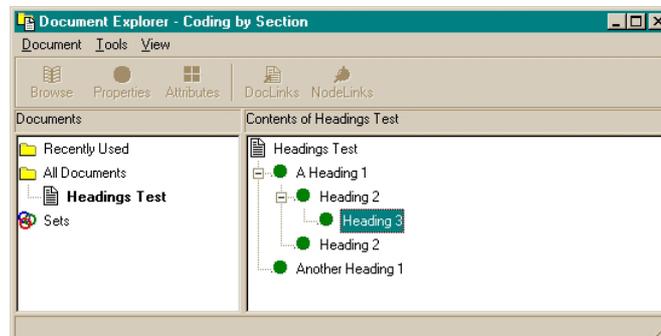


*Figure 5: NVivo Document Explorer with Sub-Headings Expanded*

## Creating a Parent Node

You may already have a Tree Node, which you want to act as parent to contain all the section coding. However, since initial section coding is usually done with a blank parent node, you can create a new one very easily. There are two ways to do it before you begin, though you can also do it as part of the coding by section process (see 0*Section Coding*). If you will be coding both ways, then you should create two apt parent nodes.

### *Using the Project Pad or Menu*

1. At the Project Pad click on **Make a Project Node** or select **Nodes | Create Node** from the menu. The Create Node dialog will open with the Free tab selected.
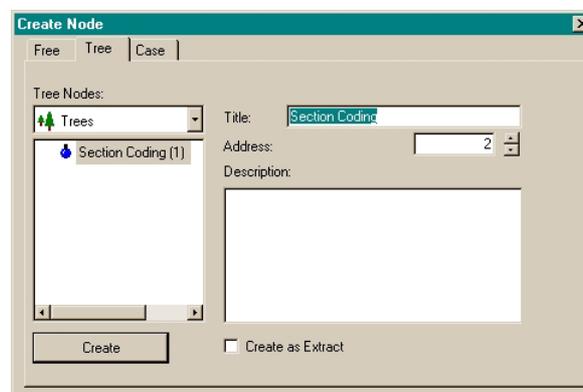
2. Select the Tree tab:



*Figure 6: Create Node Dialog Box with Tree Tab Selected*

3. Enter the title for the node which you are creating – and add a description. The only limitation on titles is that it cannot be the same as any sibling (ie with the same parent node). You can have similarly titled Tree Nodes under different parents. This could be confusing, so do it with care and document what you are doing in your journal.

## *Using the Node Explorer*

1. Highlight the point at which you wish to create a new Tree Node (most likely at the very top of the tree).

2. Select **Node | Create Tree Node** from the menu or right-click and select **Create Tree Node**:
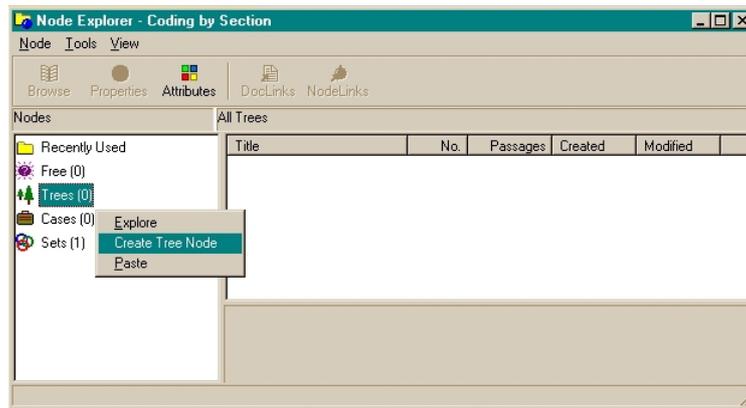


*Figure 7: Creating a Node from the Node Explorer*

3. If you are at the top of the tree, a new node will be created called "Tree Node".  You will probably want to change the name of this by clicking on the Properties button or right-clicking and selecting Properties and then filling in the dialog box as appropriate.

   a. If you are not at the very top of the tree, you will then have to choose Child Node or Sibling Node – child would be most appropriate since you want the node to contain all the nodes created during section coding.  The new node will be created as above and you will need to rename it.

Alternatively you can select **Tools | Create Node** from the Node Explorer menu bar or press **Ctrl+N:** this will bring up the Create Node dialog as described above0.

## Section Coding

Once you have your documents in the right format and in NVivo, coding by section is straightforward. You can section code one, some or all of your documents.

### *Section Coding All or Some of Your Documents*

1. Open the Document Explorer.

2. Highlight the "All Documents" folder or a Set (see the *Reference Guide*, Chapter 8, pp 111-122, for more information about Sets).

3. From the menu bar select **Tools | Code Documents by Section...** or if you are using a set, you can also right-click and select **Code Documents by Section...** These both bring up the Section Coder:
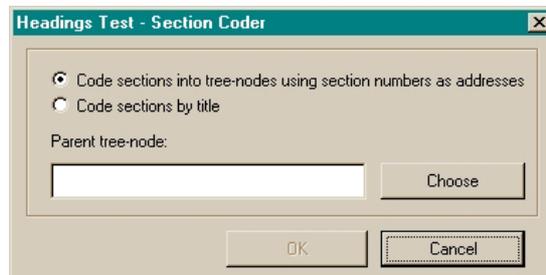


*Figure 8: NVivo Section Coder*

4. You have two options – choose one or other:

    a. Code sections into Tree Nodes using section numbers as addresses

    b. Code sections by title

5. You then have to nominate the Parent Tree Node. You can either type it in or navigate to it by selecting the **Choose button** which brings up the Choose Node... dialog:
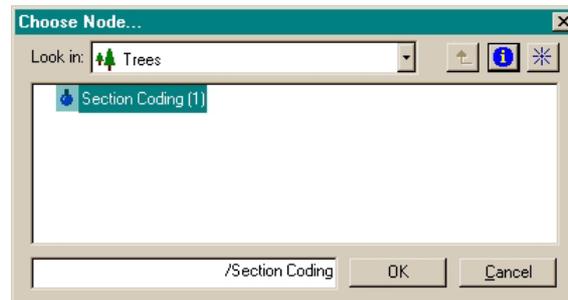


*Figure 9: NVivo Choose Node... Dialog*

    a. If you already have a node in mind, then simply navigate to it.

    b. If you need to create one, you can do so by clicking on the **Create Node** button (the button with the lined star). This creates a Tree Node with a default name of Tree Node (n).

        i. Click on the **Properties** button to change the name and add a description. Click **OK** when finished.

    c. Whichever method you have used, the node will appear in the box at the bottom of the Choose Node dialog box. Click **OK**.

    d. The node will now appear in the box labelled Parent Tree Node (see Figure 8 above). Click **OK** and section coding will begin: a progress bar will appear until it is completed.

### *Section Coding Your Documents Singly*

This is not hugely different from doing it for more than one document at a time. The only differences are in stages 2 and 3 above:

- Highlight the document you wish to section code.

- From the menu bar select **Document | Code by Section...** or right-click and select **Code by Section...** These both bring up the Section Coder.

## Coding Additional Documents

In NVivo 1.3 and later versions you can section code several documents at once (see *Section Coding All or Some of Your Documents* above).  In earlier versions you had to section code each one individually, so you are advised to update to at least the free 1.3 update (it has additional benefits too).

However you have done the initial section coding, you may create new documents later which you want to bring into the same coding scheme.  The important factor is whether or not you use the same parent node as the root for your section coding.  This will depend on your analytic aims, but note that if you do not want to use the same node, you will be creating a separate sub-tree with new nodes.

### Coding at the Same Parent Tree Node by Title

See 'Action at New Section' and 'Subsequent Occurrences of Same Heading Text'  in the table in *Implications of Heading Levels* above.

### Coding at the Same Parent Tree Node by Address

Where headings hierarchies match existing node numbers, the text will be coded there (as you would expect with highly structured documents).

Where there are additional or fewer sub-headings it becomes a little more difficult:

- An additional section occurring at the end of a sub-section will create a new node, which may or may not be desirable.

- If an additional section occurs in the middle of a sub-section, it will create a mismatch for subsequent sections until the next higher level section.

- If there are fewer sub-sections, you will need to insert a dummy section to ensure that the text gets coded at the right node.

For these reasons, **this sort of coding is best used only for highly structured documents**.

## Coding by Both Title and Address

You can combine coding by title and by section number where you are interviewing more than one person in a structured format or have a focus group.  You code for both questions/prompts and respondents.  You will need to replicate the structure of the questions and responses in your transcription – remember that there should not be any heading gaps (ie going from H1 to H4):

- Main Question – H1
    - Respondent 1 – H2
    - Respondent 2 – H2
    - Follow-up question – H2
        - Respondent 1 – H3
- Another Main Question – H1

If you do this double section coding, it is a good idea to use different, but related parent nodes – perhaps both as children of a higher level parent node eg /Parent/Respondents/ and /Parent/Questions/.

## Tidying Up After Coding Both Ways

You will get some false positives and some undesired fracturing of coding when you do this because you have headings for both respondents and sections, which you can readily correct using the Node Explorer:
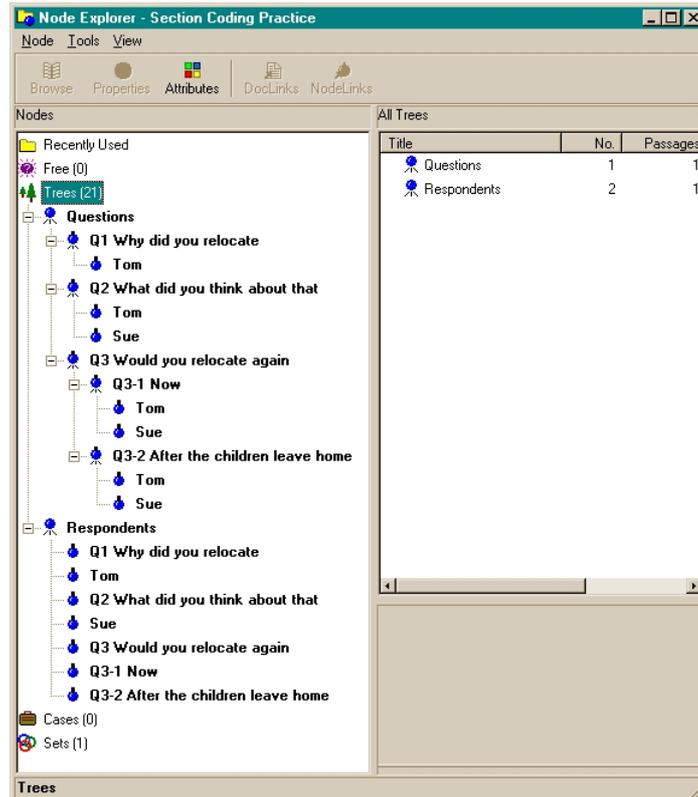


*Figure 10: Coding Both Ways Produces Unwanted or Meaningless Additional Nodes*

- With the Coding by Title part under /Parent/Respondents/ you will get nodes created for questions too. You can ignore these or (preferably) delete them:
  - o Highlight the node, select **Node** from the menu or right-click and then select **Delete Node** – alternatively press **Ctrl+D**. Click **Yes** to confirm deletion. Ctrl+Click to multi-select.

- With the Coding by Address under /Parent/Questions/ your coding will be fractured into discrete sections. You could use a Union search to collect all the fragments and put them into the node for the relevant main question, but an easier way to do this and feel you are in control is to merge the nodes using the Node Explorer. There are two things you need to consider doing:

1. Merge all coded text from all respondents with the relevant question:

    a. Highlight a sub-node, select **Tools** from the menu bar or right-click and select **Cut** – alternatively press **Ctrl+X.**

        i. The parent (ie question) node will then be highlighted.  Make sure it is the right one.

    b. Select **Tools** from the menu bar or right-click and then select **Merge Node**.  This brings up the Merge Nodes dialog:
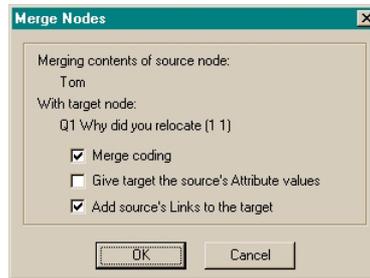


*Figure 11: Merge Nodes Dialog*

    c. With a fresh document (ie one with no other coding work done on it) the only option which need to select is Merge Coding. Tick the options which you want and then click **OK.**

    d. Repeat for each sub-node you want to merge.

2. You may possibly want to merge sub-questions with their parent questions – you do this in almost exactly the same way – except instead of selecting **Cut** in step 1.a, you select **Copy** or **Ctrl+C**.  This leaves text coded at the sub-question available for separate analysis, if that's what you want.
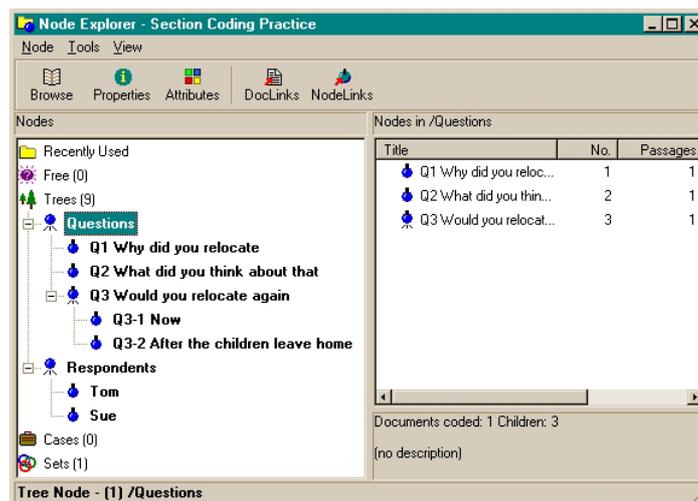


*Figure 12: Tree Nodes after Tidying Up.*

## Additional Ideas After Section Coding

- You may want to move speakers/turn-takers to Case Nodes – since you can only use Tree Nodes when section coding.

- You may want to attach attributes and values to the nodes created to give another dimension to your searching later on.

Follow these up in the Reference Guide, if they appeal to you.