

A Little Structure In Your Codes Will Make Your Research A Lot Easier (Part 2)

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In our Best Practices section you find detailed descriptions and explanations on how to get the most out of working with ATLAS.ti. Get the inside scoop here and learn the latest information and tips that haven't been included in the handbook yet.

How To Bring Structure To A List Of Codes--Part 2: Supercodes

In the last newsletter I suggested that you think of ATLAS.ti as a concept database, not an analysis program. ATLAS.ti doesn't offer analytical tools, but rather tools to support analysis, and one of the researcher's main tasks is to use the program as a support to bring order to the growing list of codes. There are four main ways to do this: code prefixes, families, supercodes and networks. My last article discussed two ways to structure the codes -- code prefixes and families. These primarily serve "housekeeping" or organizational purposes, such as putting codes into a grouping that you can conveniently select with one click as a group. Now let's focus on supercodes, which can serve both housekeeping and analytical purposes.

Supercodes

Although they both serve to group codes, families and supercodes are different tools with different uses. You can quickly understand the difference between them by thinking of a family as a very limited version of a supercode. A family is a simple grouping of codes: if you create a family and move ten codes into it, this is like saying you are interested in all the quotations linked to the first code or to the second code or to the third code, etc. So the family is functionally equivalent to a formula or macro of all ten codes, each linked by "OR." The formula has ten "operands" (the ten codes) and nine operators (nine OR's).

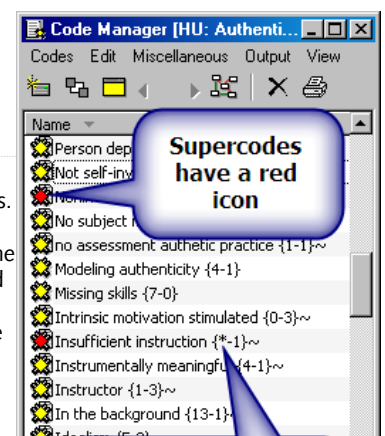
In a similar way, supercodes are formulas or macros of codes, but OR is just one of many operators to choose from. You create your own formulas in the Query Tool, and once you have created one you like, you can save it as a supercode which then appears in the Code Manager just like any other code. Well, not just like any other code, but very similar. You can do absolutely everything to a supercode that you can do to any other code, with a single exception: you cannot attach or link a supercode directly to a segment of text. The supercode is linked to segments of data indirectly rather than directly, through the codes that make up its formula. When you double-click on a regular code in the Code Manager, you are presented with the list of quotations that you have previously linked to this code. When you double-click on a supercode, you are presented with the current list of quotations that meet the coding criterion expressed in its formula. So if the formula of the supercode is "Code 1 AND Code 2," you are presented with the list of quotations that are coded both to Code 1 and Code 2. If the formula of the supercode is "Code 1 OR Code 2", you are presented with the list of quotations that are coded either to Code1 or Code 2--usually a longer list.

Long story short, a supercode is a saved formula of other codes--the supercode saves the formula, NOT the list of quotations that meet this coding criterion. The supercode is dynamic--as you continue coding data, double-clicking on a supercode produces the current list of quotations that meet its coding criterion. The supercode doesn't "know" which quotations meet its coding criteria until you double-click on it. Otherwise, supercodes are just like any other codes and can thus be used as part of a supercode query.

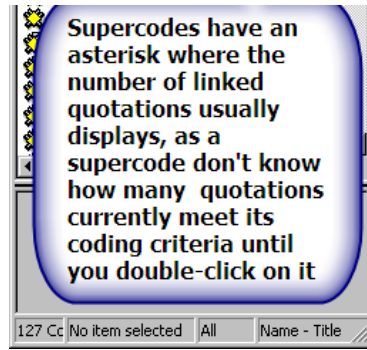
Here are a few examples so that you get a feel for using supercodes.

A SUPERCODE FOR "HOUSEKEEPING"

Let's say your respondents tell you the issues involved in working in teams. You have three codes: "Teamwork-formation of team," "Teamwork-leadership" and "Teamwork-managing tasks." They also tell you about the impact of working in teams, so you decide to code every quotation coded to one of these teamwork codes to either "Outcome enhanced" or "Outcome inhibited." You want to ensure that all the coders follow these guidelines, but ATLAS.ti has no way to impose this requirement. A "control" supercode will allow you to check for quotations coded to one of the teamwork codes, but not coded to either of the outcome codes.



This supercode should always return no results when double-clicking on it, if everyone has followed procedures. To make this supercode, follow these steps in the Query Tool diagram.



Double-click on code "Teamwork-formation of team"

Double-click on code "Teamwork-leadership"

Click on OR operator

Double-click on code "Teamwork-managing tasks"

Click on OR operator

Double-click on code "Outcome enhanced"

Double-click on code "Outcome inhibited"

Click on OR operator

Click on NOT operator

Click on AND operator

The formula is complete. Click on the supercode button, and name your supercode

A SUPERCODE FOR ANALYTICAL PURPOSES

Say you want to keep track of how just the female respondents talk about the formation and leadership of teams. Start by coding each entire female interview as a single quotation to a code "Female." Then, using the WITHIN operator, you can make a supercode that returns the quotations coded to those two teamwork codes, but only when a female respondent is talking.

Double-click on code "Teamwork-formation of team"

Double-click on code "Teamwork-leadership"

Click on OR operator

Double-click on code "Female"

Click on WITHIN operator

The formula is complete. Click on the supercode button, and name your supercode

SUPERCODES FOR CONSTRUCT GENERATION

You can also use the Query Tool to explore your coded database of quotations in a more freeform manner. Experiment with formulas of codes to find those that return interesting sets of quotations. These formulas can then be saved as supercodes and given names that represent the discovery of a construct in your data. You can keep coding with the existing lower-level codes; double-clicking on the supercode will return the updated set of quotations that meet the coding criteria of that newly discovered construct.

USING FAMILIES IN SUPERCODE FORMULAS

One helpful technique is to use families of codes, rather than individual codes, as the operands of a supercode formula. For example, you could make a family of the three teamwork codes, and instead of doing the first five operations in the first example above, you could simply double-click on the family in the Query Tool, which is functionally equivalent. You could then immediately click on the supercode button, which produces a supercode whose formula is simply that family. As you move codes in or out of the family, the supercode then reflects this new set of codes. This is much easier than making a new supercode every time the group of codes you are accumulating expands.

Here's another easy way to build quite complex formulas: instead of using codes as the operands, use families--families that as yet have no codes as members. As you move a code into each family, these become the active operands for trying this "version" of the formula, without having to keep recreating a complex new supercode when you want to test out a formula with different operand codes.

To create a formula of codes in preparation for creating a supercode, you need to learn two things: (a) what each operator in the Query Tool does, and (b) how the Query Tool screen works.

Open the Query Tool with the binoculars button. Start with the operators, which are in the left hand column. I find I use five or six of them most frequently. You can right-click over each operator to learn what it does. I would start by figuring out how the following five operators work, and then move on to experimenting with the others:

1st, 3rd, and 4th operators: OR, AND and NOT. These are Boolean operators that link pairs of codes.

OR retrieves quotations that are coded to either one code OR the other code, or both codes

AND retrieves quotations that are coded to both the first code AND the second code: the same quotation must be coded to both codes

NOT retrieves quotations NOT coded to a code.

8th Operator: WITHIN

This retrieves quotations coded to one code that are embedded in quotations coded to the other code. For example, you can use it to find quotations coded to a code, but only if they are embedded within larger quotations coded to a broader topic code; or, as in the example above, when a quotation coded to one code, is within a quotation that comprises the entire document and which is coded to a demographic or other document attribute code.

14th Operator: COOCCUR

This is basically a "fuzzy AND." When two codes are joined by the cooccur operator, the Query Tool will return quotations coded to the first code whenever there is another quotation that overlaps the first quotation that is coded to the second code. The purpose is to find places in the text where two codes are used roughly in the same area of text--the two codes don't have to be coded to exactly the same stretch of text, but the two stretches of text coded to each of the two codes must overlap to some degree--by as little as a single character, or all the way to a total overlap of actually being the same quotation coded to the pair of codes.

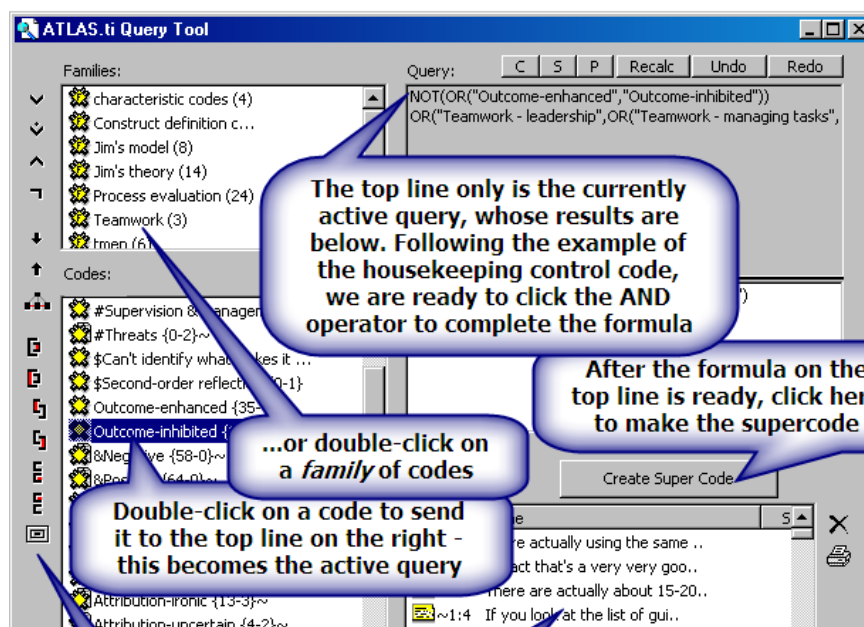
ATLAS.ti's online Help page offers excellent graphics of these various situations.

Once you've learned how the operators work, your next challenge is learning how the Query Tool screen works.

In general, you build up formulas by selecting two codes and joining them with an operator. You then continue to build up the formula by selecting another code, and joining this code with an operator to the first joined pair of codes, etc. As you double-click on each code or family of codes, it is sent to the top line of the Query Tool, which becomes the currently active query. As you double-click on a second code, the first code is pushed down to the second line and becomes dormant. The top two lines are then ready to be joined together by an operator and moved to the top line, and thus become the currently active query, whose resulting list of quotations is listed in the lower right of the screen. The diagram illustrates each part of the Query Tool.

You now have the power to add an entirely new dimension of analysis, far beyond just retrieving groups of quotations coded to a single code. The Query Tool and supercodes will get you there.

In the final article in this series in the next newsletter, I will discuss the fourth way to bring structure to the codes through building graphical networks, which are used primarily for the analytic purpose of moving your thinking and your project forward.



The image shows a screenshot of a search results page with three callout boxes. The top line of the page contains search criteria: "authentic because its WANTE..." and "ality was that key per...". Below this, there are search results with operators and filters. The callout boxes provide instructions on how to use these features.

This is the column of operators. Right-click on them to learn their function.

Here are the quotations that meet the criterion of the active query, represented by the top line above. Click on a quotation to visit it

This tell you how *many* quotations meet the criterion of the currently active query

Result: 355