

**Methodological Paper:
Qualitative Data Analysis using AnSWR**

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Introduction

We are seeking to work with various individuals, communities, and political leaders within India to reduce vulnerability to natural disasters, including climate variability and ultimately, climate change. The Outcome Mapping framework is likely to be the framework within which we will be working. Outcome Mapping was developed by the International Development Research Centre (IDRC) as a way of affecting behavioral change in the people with whom they were partnering on development projects. Donors, external/internal agencies and communities often demand some way of documenting and evaluating the impacts of a project. Outcome Mapping does not seek to attribute any program's activities to causing a particular impact, but rather focuses on influencing behavioral changes in key partners or boundary partners. Boundary partners are defined as "those individuals, groups, and organizations with whom the program interacts directly and with whom the program anticipates opportunities for influence" (Earl et al., 2001: 1). Measurements of success are determined through outcomes, defined as "changes in the behavior, relationships, activities, or actions of the people, groups, and organizations with whom a program works directly." Thus, it is possible to evaluate, learn from, and adapt a program while it is in progress, rather than waiting until the project's completion to assess useful actions or areas of improvement.

Outcome Mapping is comprised of three stages: Intentional Design, Outcome and Performance Monitoring, and Evaluation Planning. Each of these stages is comprised of multiple steps designed to help monitor behavioral changes in boundary partners and how the program's activities is facilitating behavioral changes. Self-reflection and evaluation are required at each step of the project and of the boundary and project partners. Our project is currently in the first stage, Intentional Design, in which we are figuring out who our boundary partners are, the behavioral changes we are wanting to affect, and how we can contribute to the change processes.

We are facilitating shared learning dialogues with various community groups and organizations, interviewing major stakeholders, and researching literature on disasters and vulnerability assessment methods and reduction. The shared learning dialogues consist of two-way, interactive learning interviews with individuals in communities up to government officials. The goal of the dialogues is to provide immediate feedback on knowledge generation and incorporation into the project. These activities are generating copious amounts of qualitative data that need to be reflected upon and analyzed. From the data, key relationships and themes will emerge and provide insight into the project. The data will be coded using a qualitative data analysis software.

Coding is the process by which data are filtered and managed such that key relationships and themes can be extracted for analysis. Coding is not analysis of the data; it is merely used to organize and group segments of the data in order for it to be systematically examined (Coffey and Atkinson, 1996). Through coding, the relevant themes are identified and links can be made between various elements of the dataset around the themes and relationships to be analyzed (Coffey and Atkinson, 1996; Ritchie et al., 2003). Traditionally, coding was conducted by physically marking up and segmenting the text to be analyzed. The process of qualitative data analysis has been eased through the development of computer assisted qualitative data analysis (CAQADS) software (Loughborough University, 2007). Multiple CAQDAS programs are in existence with a range of capabilities and prices. We previewed three software packages: AnSWR, AtlasTI, and NVivo. Two of the programs are commercial and fairly expensive to operate. Based on an assessment of our project goals and framework, data assessment

needs, the software capabilities, we have decided to utilize AnSWR for our data analysis. This paper describes AnSWR, provides a brief overview of the program capabilities and weakness, and presents the basic steps for analyzing qualitative data with the program.

AnSWR

Program Overview

AnSWR (CDC, 2004) is a freeware qualitative software analysis program that was developed by the United States Center for Disease Control (CDC). It was designed for managing and analyzing collaborative studies incorporating large datasets across multiple sites and teams in a systematic manner (McLellan et al., 2004). AnSWR was developed to analyze data associated with large-scale AIDS assessment projects and other health initiatives (Hruschka et al., 2004; Hruschka et al. 2004b). Like most CAQDAS programs, AnSWR is used for analysis of text or rich text files, although it can link with html files. Thus, all audio recordings of the interviews, shared learning dialogues, and focus groups must be transcribed to text documents before they can be imported and coded within AnSWR. Furthermore, all of the pdf files of the journal articles and other sources we are utilizing in our literature review must be converted to text files. This is perhaps the most frustrating aspect of using AnSWR, but no other CAQDAS package currently on the market has the capability of working with pdfs either. Furthermore, each software has different organizational structures and ways of coding, such that it is not easy to switch programs once familiarized with a particular program.

The framework of AnSWR is structured around studies. The hierarchy of analysis within AnSWR is that of a study being comprised of one or more projects. The following types of information are typically associated with each study (McLellan et al., 2004: 2):

- “Sources – who or what provides the textual data
- Codes – labels used to organize/classify concepts and retrieve textual data
- Coders/analysts – who applies the codes and interprets the textual data”
- Projects – the textual data to be analyzed

Source data can also be attributed to each study. Each study is comprised of one or more projects and codebooks. A project is comprised of all the data to be analyzed. Coding and data analysis are conducted at the project level. Multiple coders/analysts can be working on a study or a project within a study at the same time without affecting each other's work. This is achieved by assigning each coder a unique identification which he/she uses to login to the study. The study administrator, generally the individual who created the study, can merge the various coders' analysis after the entire team has agreed upon each individual's work. The study administrator also designates the permission levels for each coder/analyst, determining who can create new codes, analyze data, and generate reports.

The data analysis portion of the project begins with the creation of codebooks. Each codebook is unique to a study. A codebook is a list of thematically related codes. Codebooks are created on the study level so that each project associated with a study can utilize the study codebooks. It is possible to limit a project to using a subset of the codes associated with the study rather than globally assigning the codes. There is a bug within the program such that it will crash if a codebook name more than 20 alpha-numeric characters in length is entered.

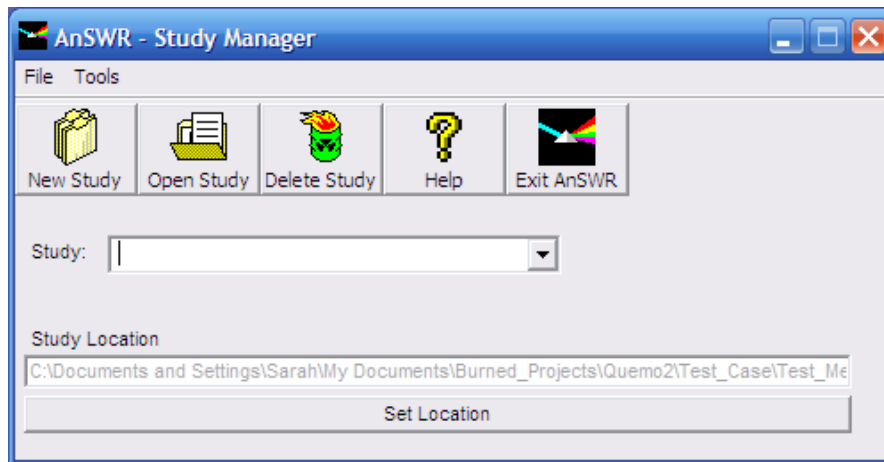
With some of the interviews, shared learning dialogues, and focus groups, it might be desirable to maintain the anonymity of the participants. In AnSWR, it is possible to replace an individual's name or identifying features with a label at the creation of a study or at any point throughout the analysis. Masking information is achieved through the Sensitive Phrase Substitution (SPS) feature. The replacement phrases are created in an SPS record located in the SPS Administrator.

Study Construction

This section is intended as a brief overview of constructing a study within AnSWR for analysis. The AnSWR help manual is surprisingly useful and the steps easy to understand. The only difficulty in

using the manual lies with becoming familiarized with the software's terminology. Constructing a study is fairly straightforward. It is important to designate a study administrator, who will then create the study. Having only one individual with the responsibility and capability of merging projects can help prevent one coder from accidentally over-riding another coder's work.

The system administrator creates the study. At start-up of the program, you are asked to enter your coder identification or create a name and password for the study. Once this has been done, the Study Manager window appears:



- Select the New Study icon

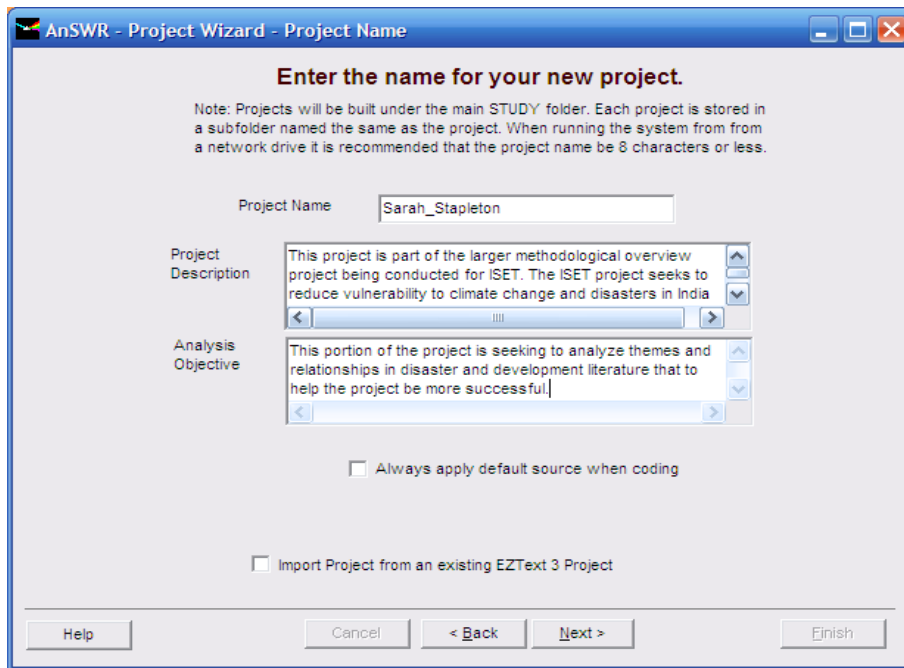
A new window will appear asking you to select a name for the study and where on the system you wish to locate the study. It is important to select an easily accessible location, that is clearly labeled. Furthermore, all of the interviews, journal articles, and other data sources associated with that study should be located in the same folder as the study being built. AnSWR can directly import and allow modification of the text documents to be analyzed. Because of this, it is recommended that two copies of all text files should be made and kept in separate folders. To ensure that the original data is not lost or modified, a separate, permission restricted folder of the original data should be created for archival purposes. The version of the text file that will be analyzed should be kept within a subfolder of the main study folder.

- Once a study has been named and its system location chosen, click on the Save New Study icon

The Project Study window will then appear. Remember that projects are of a lower hierarchy than the study. For more efficient data manipulation and analysis, each coder should create a new project associated with his or her name. Again, this is recommended to avoid having one coder's work over-ridden by another coder's.

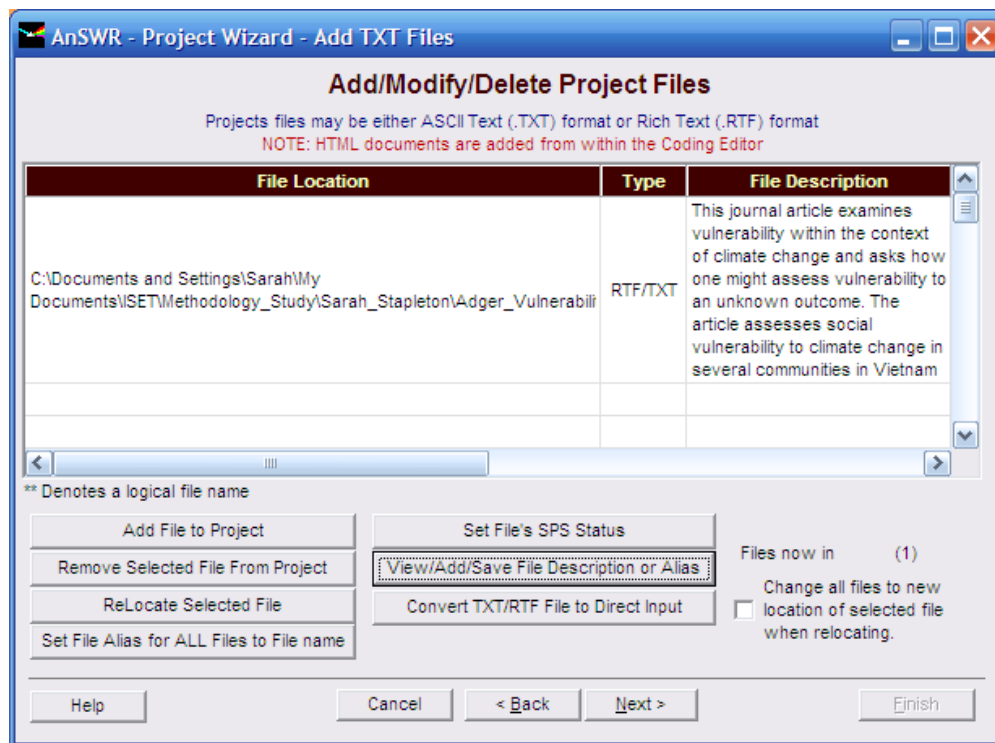
- Enter a Project Name
- Enter the Project Description. This should include information about the coder.
- Enter the Analysis Objective.

These windows have no character limit and should be as descriptive as possible to keep other team members informed and for study continuity. A graphic of the Project Study window is shown below.



- Click on the Next button when finished.

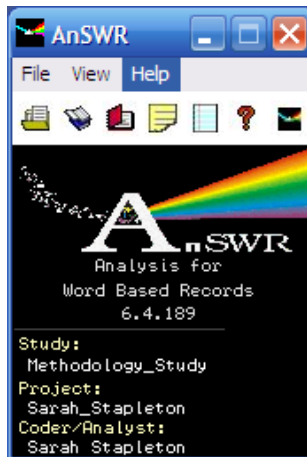
The Project Wizard – Add TXT Files window will appear. It is through this window that the data files associated with the project are imported. If a coder is only going to be working on a subset of the data, he or she should only import the data files upon which he/she will be working.



- Select the Add File to Project button to incorporate a text file to the project.
- A window will appear asking if you want to apply SPS (Sensitive Phrase Substitution) to the file now. If this is desired you can do this now or apply SPS at a later point.

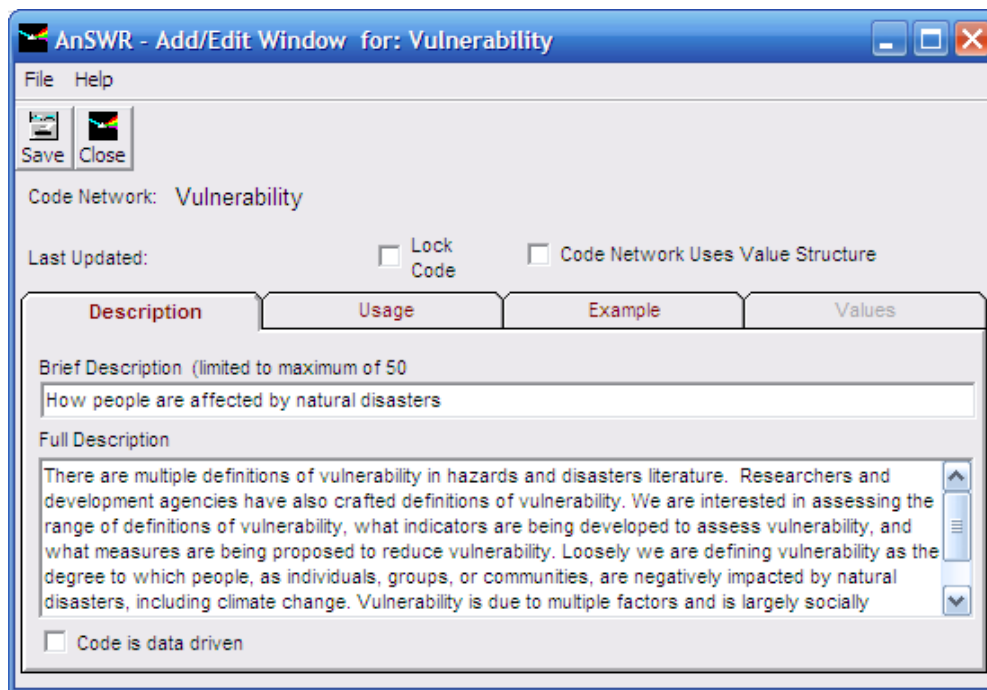
- Once the file has been added, click on the file's name to highlight it and click on the View/Add/Save File Description or Alias button. Enter a description of the file.
- Continue adding as many data sources as you wish to associate with the project. When you are finished adding sources, click on the Next button.

Upon clicking next, you can then finalize the project construction and the Project Wizard window will close. If you wish to modify the project at a later period, you can access the Project Wizard from the file option of the main AnSWR menu. Select File -> Modify Name of Project and the Project Wizard will appear.



Building a Codebook

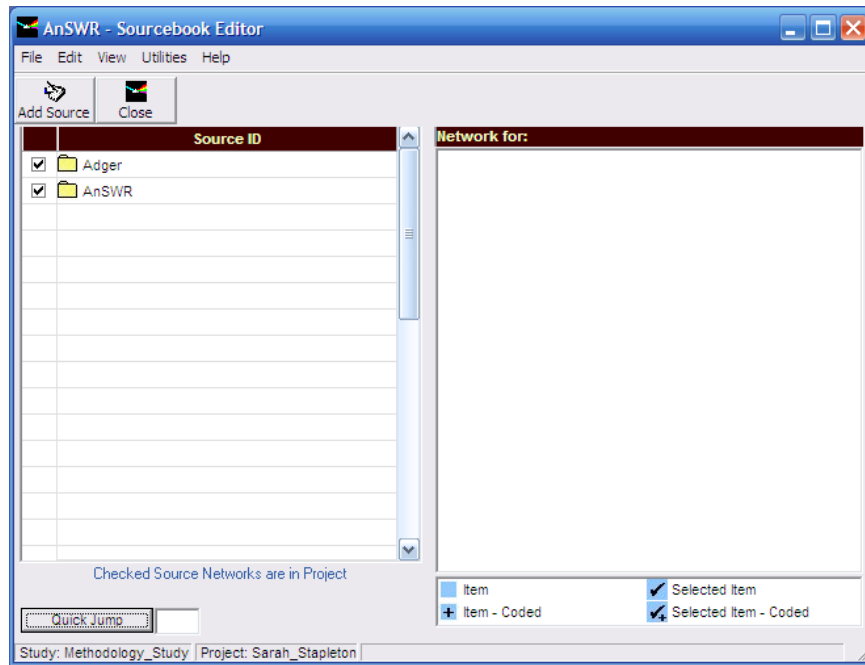
The analyst must construct codes to aid in the data analysis. As mentioned in the overview of the program, the codes the analyst uses are stored in a codebook. A codebook can be constructed that is global to the study or that is associated only with a specific project. To create a new codebook, select the blue Codebook icon from the toolbar of the main AnSWR menu. It is the icon located between the Open Study icon and the red book icon. Hovering with the mouse over the icon will cause its name to appear. The Codebook Editor window will open. Select the New Code icon and enter the name of the code. This will open the Add/Edit Window for: Code



It is in this window that the coder is able to provide detailed information about the code. A short description of the code and full description are highly recommended, so that fellow coders understand and properly apply the code in their analysis. There are no character limits for the full description of the code. The coder can and should specify instances in which the code should be used in the data analysis and provide an example of when the code was used. If the code is associated with a survey question in which the response was a ranked value, such as 1 (did not agree) to 5 (strongly agree), the coder might choose to select the Code Network uses Value Structure box. This will allow the coder to apply a value ranking structure to the code to be used in data analysis.

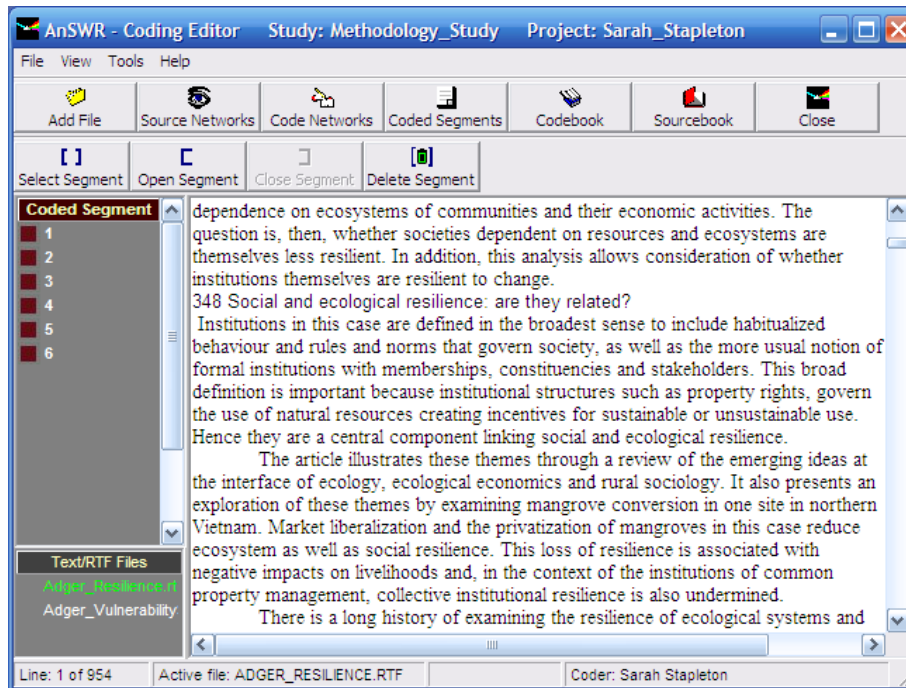
- Enter a brief description and full description of the code.
- Enter possible guidelines for the usage or non-usage of the code.
- Enter an example of when the code was used, if desired.

Before you begin the coding process, AnSWR requires that you create a Sourcebook. The sourcebook contains all the information about the sources. For example, a source is considered to be the interviewee or the author of a journal article. To access the Sourcebook editor, click on the Open Sourcebook Editor icon (red book icon) on the toolbar of the main AnSWR menu. The Sourcebook Editor window will appear.



- Click on the Add Source button and add the source name (masked if need be) and information. Close the Sourcebook Editor window when finished adding sources.

All steps needing completion before coding can commence have been completed. To begin the coding process, open the Coding Editor by selecting the Coding Editor button from the toolbar on the main AnSWR menu. It is the button that looks like a sheet of notebook paper. This will open the Coding Editor window. In the lower left-hand corner of the window, you can select the text data file with which you want to work by clicking on its name. When you are coding, you must attribute both the source and the code to the segment of text you wish to include in the data analysis.



- To begin the coding process, highlight the portion of text you wish to code by dragging the cursor over the text section with the left mouse button held down.
- Click on the Select Segment button. If you have successfully selected the text with the button, the text will change colour in the text window.

To toggle between the list of codes or sources for the data, click on either the Source Networks button or the Code Networks button. This list of codes or sources will appear in the top left window with the scroll bar.

- To code the selected text, left mouse click on the code word and physically drag and drop it onto the section of highlighted text. The code has now been assigned to that text.
- Toggle to the Source Networks view and repeat the process for the source assignment.

The selected text is now completely coded. To check the code assignment, select View -> Display Summary Window from the menu bar of the Coding Editor. Expand the segment by clicking on the plus sign next to its number assignment in the Family column.

Family	ID	File	Coder	Sources	Codes
1	1	Adger_VulnerabilitySocial.rtf	staplets	*Adger	*Vulnerability
+	2				
+	3				
+	4				
+	5				
+	6				
+	7				

Coding changes are not automatically reflected. Click REFRESH DISPLAY to update

Sort by Family, ID
 Sort by File
 Sort by Coder/Analyst

Portrait
 Landscape

Expand All Print Summary Refresh Display Close

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