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Abstract

In this paper, we present a method of categorizing, coding, and sorting/manipulating qualitative (descriptive) data using the capabilities of a commonly-used word processor: WordPerfect®. We explain the process and its development in simple terms for the person who may be familiar with qualitative research and data, but not with computer and/or word processor manipulation of that data. Although we developed the process to suit our methods, it can easily be adapted/evolved to fit different research situations where a method of rapidly handling large amounts of descriptive data is desirable.

Categorizing, Coding, and Manipulating Qualitative Data Using the WordPerfect®[+] Word Processor
by
John H. Carney[*], Joseph F. Joiner[**], and Helen Tragou[***]

Abstract

In this paper, we present a method of categorizing, coding, and sorting/manipulating qualitative (descriptive) data using the capabilities of a commonly-used word processor: WordPerfect®. We explain the process and its development in simple terms for the person who may be familiar with qualitative research and data, but not with computer and/or word processor manipulation of that data. Although we developed the process to suit our methods, it can easily be adapted/evolved to fit different research situations where a method of rapidly handling large amounts of descriptive data is desirable.

Introduction

In our experience with qualitative research, we discovered WordPerfect® had the capability we needed to assist with categorizing, coding, and sorting/manipulating qualitative data. We wanted our qualitative data to speak for itself, but we became overwhelmed with the manual process of handling the data. We needed computer assistance to relieve us of this manual process. WordPerfect® provided us with an efficient filing system to pull the data together, place it in multiple categories with subcategories, and rearrange it to suit our inductive process. As a result, WordPerfect® saved us many hours of manual labor, allowing us to focus on the meaning of data. Before describing the process, we reviewed the characteristics of qualitative research.

Qualitative Research

We approached this research project from a qualitative design. For us:

The word qualitative implies an emphasis on process and meanings that are not rigorously examined, or measured (if measured at all), in terms of quantity, amount, intensity, or frequency. Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. They seek answers to questions that stress how social experience is created and given meaning. In contrast, quantitative studies emphasize the measurement and analysis of causal relationships between variables, not processes. Inquiry is purported to be within a value-free framework. (Denzin & Lincoln, 1994, p. 4)

As opposed to quantitative research, qualitative hypotheses and theories emerged from the data set while the data collection was in progress and after data analysis started (Morse & Field, 1995). We continually examined the collected data, which consisted of transcriptions of interviews, for descriptions, patterns, and relationships between categories. The relationships we were looking for were not statistical, but descriptive. This required us to view our data set from an experiential perspective from the beginning.

Our Production (Qualitative Research)

Casting (the data)

Coffey and Atkinson (1996) wrote, "the segmenting and coding of data are often taken-for-granted parts of the qualitative research process. All researchers need to be able to organize, manage, and retrieve the most meaningful bits of our data" (p. 26). Chenail (1994) wrote, "I believe that the data, which has been painfully collected, should 'be the star' in the relationship" (p. 2). With these thoughts in mind, we set out upon our journey of coding and categorizing our data, not an easy task at first.

Due to the nature of the project, our data risked being upstaged by the other actors. The project marked our first time together as a team--three people coming together with many different ideas, concerns, and temperaments. In the beginning, we decided to go away from each other (it was best not to get too close too soon), identify data bits, then come back together to see what data each believed to be important. After the first manual cut-and-paste session, we realized that a purely manual operation would take many hours and waste reams of paper. At that point, we realized we needed to address this issue, or the data, our star, risked being upstaged by the supporting cast. We did not want to manually code and re-code. We did not want to put the data in the hands of some unknown computer-driven qualitative program lest the program becomes the star.

A star becomes and stays a star only with the help of the supporting cast and crew hard at work in the wings. The cast and crew must utilize their talents and come together as one in order for the star to shine--so it was with our project. We now take you back stage to show you how the cast and crew prepared for opening night . . .

Rehearsal (pulling the data together)

Behind the curtain, we first had a scissor party to cut out the individual data bits and we dumped them unceremoniously in a pile. With the data bits in a cluttered stack, we laid out sheets of paper on a large table and began "scanning the data for categories of phenomena and for relationships among the categories" (Goetz & LeCompte, 1981, p. 57). As we found similarities of units, we assembled them into piles of look-alike, feel-alike groups. We wound up with sixteen stacks, or categories, into which the data seemed to fall naturally. These sixteen categories served as our initial category set, and we assigned some initial short names to these according to our interpretation of what each seemed to be saying. Many had warned us that our initial category set would probably be just a starting point. As we sat at the end of our scissor

party looking at each other and reflecting on the amount of work this had been, we hoped we were at least close to a final category set.

Independently and collectively, the three of us looked at our initial category set. Even with categories, we still saw chaos and lack of organization with our data. Jointly, and concurrently with our research advisor, we agreed where and how to continue with data organization.

We realized we did not have sixteen simple categories, but rather multiple categories with subcategories. This implied we needed at least one major revision of our category set. We continually struggled with logical levels of data categories. It was at this point, thinking of multiple scissor parties yet to come, we considered the possibility of computer programs to help us.

We had neither time nor inclination to purchase and learn another software program. But in our review of software programs, we realized the process itself was a simple one consisting of assigning codes to data bits and then sorting and tracking them.

Since our transcriptions and data bits were already on file in WordPerfect® format, we took a closer look at WordPerfect® and realized it had the data handling capability we needed. It was the computer tool we needed. We still needed to code the data bits with category names, but we would have had to do that with any other programs as well.

Before we finalized our category set, we went through ten revisions--several of which were complete major revisions. If we had made these revisions manually, we would still be working on the project. However, with the computer, we accomplished major revisions in minutes rather than hours.

Dress rehearsal (coding)

Once the major task of transcribing interviews was done, the rest was simply a matter of coding and sorting the data according to the category schemes we developed as we analyzed our data. The following was the step by step process of how we accomplished that with WordPerfect®. We first coded the name (an alias) and turn number for each interview transcript as follows in Excerpt One:

Excerpt One

226 Rose	Q:	But you find with all these new experiences and _____ (inaudible) the theater and knowing yourself, it sounds like you really are, you've done some incredible work, do you feel you're able to trust people more because of your acting experience? Not having...
227 Rose:		That weird, I can trust people more on stage than in real life.
229 Rose:		_____ (inaudible) on stage, you have to trust them.
		"Line Space"
300 Rose:		....

We saw several advantages in coding and arranging the interview in the above format, and we developed changes in our process as we went along--an evolutionary process. Turn numbers (i.e. 226, 227) enabled us to quickly locate and track interview information within the original interview. Sometimes we needed to review context, which might not have been evident once we reduced the interview to data bits. Since the names were already aliases, we chose to use the name as the "code" for the person. We could have used numbers, but using names made it easier to simplify our own internal identification of respondents.

We also chose to separate the coding information from the body of the data to assist with identification and analysis. We created this alignment by using the "left indent" capability. We formatted our data bits as a paragraph for each bit. Left indent maintained the alignment until the end of each paragraph. We ended paragraphs with the "Return" or "Enter" key. Specifically, we entered the turn number, the name, F4 (left indent, function key 4 in version 6 of WordPerfect®), the data, and then the "Enter" key to end the paragraph. [We added this coding and alignment to existing transcripts by inserting the coding at the beginning of each turn: 226 Rose:F4 existing data--].

We then separately read all of the transcripts (many times) and high lighted the data bits. We were pleasantly surprised, when we got together again, that our agreement of data bits exceeded 90%. Initially we decided to include all data bits anyone identified. Later in our analysis, we edited the files to remove data bits that seemed extraneous or non relevant.

After our first scissor party with the identified data bits, we assigned initial categories to the data bits. We did this by manually arranging them on separate sheets of paper before we developed our computer process. We did it manually because we thought it beneficial for us to have gone through the process manually the first time, and we had not yet seen the need for computer help. Afterwards, we wondered if we could have done this first exercise on the computer had we known how.

Next, we took our pages of categorized data bits, created a new file of each interview (never mess with the original files), and added our category coding (i.e. 9001) to the data bits in the new file. We chose numeric coding for categories and created a code page to explain each category. We chose numeric instead of alphabetic (name) coding because multi-level categories required a way of keeping track of the levels. Numbers provided us an easy way to accomplish this (see Excerpt Two).

Excerpt Two

9001 226 Rose Q: But you find with all these new experiences and _____ (inaudible) the theater and knowing yourself, it sounds like you really are, you've done some incredible work, do you feel you're able to trust people more because of your acting experience? Not having...

9001 227 Rose: That weird, I can trust people more on stage than in real life.

9001 229 Rose: _____ (inaudible) on stage, you have to trust them.

"Line Space"

9001 300 Rose: ....

(Notice that some changes have already occurred.) In our case, one interviewer (Ques: or Q:) conducted all of our interviews, so no further identification was necessary. We could have identified multiple interviewers within the "Q" and name or number, i.e., "QBob" or "Q12", etc.

Also evident in our editing process at that point was our grouping of multiple components of some data bits. That is, sometimes, an answer was meaningless without the question, and sometimes the data bit spread over several turns or interruptions. In the above example of a data bit, a question (Q:) began the exchange with a response over two turns. We separated (formatted) the data bits as paragraphs by a "Line Space" before and after each data bit. When sorting, WordPerfect® looked for this "Line Space" to indicate the end of a paragraph.

We initially assigned a four digit category code (9001, etc.) to identify our categories for sorting and created a "code book" to provide descriptions of each category (i.e., Childhood and Adolescent Experiences). Later we made one of the first major changes to our category scheme. We changed from the four digit code to a five digit code. We did this to facilitate additional category/subcategory distinctions within the code. For small numbers of category changes, we simply edited the file and keyed in the changes, but for major changes, we used the "Replace" function of WordPerfect® (Under the "Edit" function of the menu bar at the top of the screen). The "Replace" function allowed us to "Search for" the old code (i.e. 3024) and "Replace with" the new code (i.e. 32003). (See Figure 1.) WordPerfect® then found all instances of 3024 in the file and replaced each with 32003.

With this first major change to our category scheme, we coded *levels* of categories within our category code numbers, which we illustrated in the following category scheme from our code book (see Excerpt Three):

Excerpt Three

30000 Adult Experiences. - What my life has been and is as an adult.
31000 In Character (on stage) - Those experiences of life directly relating to performing.
31001 Authority Figures - Experiences of directors, parents, teachers, etc. who served as authority figures to me.
31002 Observers - My experiences of those that served as observers in my life (audience, parents, teachers, peers).
31003 Self - My experiences with self - the thoughts, feelings, and coping with the events in my life.
32000 Out of Character (off stage) - Those experiences of life not directly related to being on stage.
32001 Authority Figures - Experiences of bosses, parents, teachers, etc. who serve as authority figures to me.
32002 Observers - My experiences of those that serve as observers in my life (horse, peers).
32003 Self - My experiences with self - the thoughts, feelings, and coping with the events in my life.

Although five-digit category coding could handle much more complicated category schemes than we needed, it made level visualization an easier task. With the coding completed, we came to the point where we could sort files. We first sorted a single interview file to see what it looked like according to our category scheme. Satisfied with the format, we combined all of our data bit files into one large file. We did that using the "Cut and Pate" feature to add each file to a single master file. Next, we sorted the master file according to how we wished to view the data bits. Appendix A showed one example of our sorted coding alignment of our data bit files in their final format.

Show time (sorting)

WordPerfect® sorted by selected words within a paragraph and could do both numeric and alphabetic sorts. Since we wished to view our data within our category scheme, we first sorted the data by category code (i.e., 32001), which was the first "word" (See Appendix A.) in each paragraph. We used version 6.0, which had the following procedures reflected in the menus of that version. (Different versions of WordPerfect® may have somewhat different menus to accomplish these functions.)

With the file we wished to sort (master file) on our editing screen, we selected "Tools" from the menu bar, which listed the tools available. (See Figure 2.) From that list, we selected "Sort." Next appeared a screen that asked for a "Source and a Destination file." Although WordPerfect® allowed us to sort directly from file to file, we chose to sort from the "Document on Screen" to the "Document on Screen." This choice allowed us to sort the data and view it immediately without affecting source files on disk. Since we wanted to do multiple sorts and see the results as we went along, we chose this screen to screen option and used "Save" to save our files after we were satisfied with the results.(See Figure 3.)

If you are not familiar with this type of procedure, the following sort procedure and screens may at first appear complicated. At the risk of being simple, we will explain sorting concepts and the step by step process as if you are unfamiliar with it. Our coding system is contained in the first three words of each paragraph (i.e., 32001 62 Butch:), so our sorting was done with these words. The first "Sort" menu (See Figure 4.) asked us for information about how we wanted to sort the data. The first thing (1) was the "Record Type." Our data consisted of words arranged in "Paragraph" form, which happened to be the default, so no change was necessary. The default "Type" shown (on the right side of the menu, Figure 4) happened to be for an "Alpha" sort for word "1." Our choice for sort was the first word, but it was numeric, so we selected (2) to change the "Sort Keys." "Edit" became our choice shown on the screen. The "Edit Sort Key" menu (See Figure 5.) allowed us to select the fields of the sort key to change. We selected number (2) and selected "Numeric" for that first sort. (See Figure 6.)

Once we had the correct fields set up for the sort (See Figure 7.), clicking on "OK" brought us back to the "Sort" menu, and we selected "Perform Action" to accomplish the sort. In a few seconds, WordPerfect® sorted the file and displayed it in order of category code. Considering a manual process for doing this, the speed was absolutely astounding. The sorted file was then available as a normal editing file (on screen) for the next step.

Next, especially for our final data presentation, we chose to continue our arrangement of data using another option of the sort capability. One by one we "Block[ed]" each category level just as one might block for "Cut and Paste." "Sort" confined itself to the part of the file we blocked. One by one, we separately blocked each category level. (i.e., all of the 32001's, then all 32002's, etc. See Appendix A.) Next we sorted the "Block[ed]" category by interviewee name using the "Edit Sort Key" procedure to select an "Alpha" sort, instead of a "Numeric" sort, on word three. (i.e., Butch, see Appendix A.)

Lastly, we "Block[ed]" each name in turn and did a numeric sort of word two (i.e., 56, see Appendix A.) to put the interviewee name in turn order. Our final result was a file that was in turn order, within name order, within category order, which was also in order by subcategories within categories.

At first, the above procedure seemed lengthy and tedious, but it was far faster and easier than doing it manually. Once we had done it a few times, we found it easy to use, and we accomplished even major revisions of our category scheme in minutes. Once we had a printout of the file, we viewed the structure, determined if we had properly categorized the data bits, and made changes to the copy as necessary.

None of us were accomplished typists. John had to look at the keyboard, and he still made errors. While he typed and watched the keyboard, one of the members of the team sat behind him reading the corrections and verifying his typing on the screen. Working in that manner, we experimented, modified, and evolved the categories without being dragged down by manual labor. We evolved our process to fit our particular study. Once we understood the concepts of coding and manipulating data, only our imagination limited how we might have evolved the process for our research data.

Finale (Conclusions)

WordPerfect® helped us with our data in three important ways. First, it helped to speed up the mechanistic process--how to store (by giving the right commands to the computer), to code (by assigning numbers to each interviewer/interviewee turn), and to organize the data (by cutting-and-pasting and categorizing the selected data bits). WordPerfect® helped us to be patient and curious as we synthesized different themes, categories, and patterns, which were the threads that wove the themes into a meaningful tapestry.

Second, by relying on WordPerfect®, we did not have to argue about which one of us was responsible for keeping the data--the four interviews, the nine sort keys, the several drafts, the final paper, and presentation aids. All of them were safely stored in separate and accessible files in the computer.

Finally, by enjoying the easy access to the data, we speeded up the qualitative research process and attended to the importance of our star--the data. We attended to the many relationships that emerged during that process among and between data bits, subcategories, and categories. WordPerfect® did not do the coding for us. It was a user-friendly program that did the

housekeeping. It kept our data bits alive, coded, saved, and easily accessible. WordPerfect®
proved to be a great help, reliable source and a trusted crew member in our qualitative play.

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Author Note

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