Learning Guide – Data Analysis – Part II

There are **many** kinds of qualitative data analysis – probably more than of statistical analysis! People use terms horribly, including in the literature. I often hear people say "I'm going to use content analysis." A couple of questions later I realize that they have no clue what content analysis entails. People often treat quite different kinds of qualitative data analysis as the same thing – content analysis, thematic analysis, discourse analysis, etc. They are all distinct. The readings that I have provided focus on the approaches to quantitative data analysis commonly called inductive analysis but also frequently called "thematic" analysis, and sometimes erroneously called content analysis. Content analysis is not the same thing as thematic or inductive analysis. However, some people label more or less all quantitative data analysis as "content analysis" and you will see this. Our readings do not go into more specific kinds of qualitative data analysis like discourse analysis and visual analysis. There are entire books (many) about each of these types of data analysis. Just as in the case of quantitative analyses, my objective is for you to understand how research question drives design decisions and to be able to understand and assess the quality and appropriateness of qualitative data analysis techniques used in the research literature. If you plan to use qualitative data analysis, you probably need to take a course to prepare you to do so, just as you need a course in statistics to prepare you to use statistical techniques.

Swisher – Comments about Qualitative Data Analysis

Qualitative data analysis is **hard**. I developed this set of comments to try to simplify things. I relied heavily on a book called "Handling Qualitative Data" by Lyn Felding to create this "cheat sheet." Full credit goes to her. This is a pretty "cookie cutter" or "step by step" approach and is a decent guide, I think, for the novice in qualitative data analysis. This can be helpful in Assignment 3 and perhaps in Assignments 4 & 5 if you decide to use qualitative data analysis.

Astroth & Chung

These authors use some phrases that I do not particularly like to use because they are frequently used in a sloppy, imprecise way, only vaguely conveying what the author actually did or how the author reached conclusions. However, other than my fear that you will acquire "sloppy habits" with regard to how you explain your decisions, the article is excellent. This journal has an entire department devoted to assessing the quality of research evidence. I certainly approve of their effort to ensure high quality in all of the evidence they present – whether it is analyzed statistically or qualitatively. Here are my "gripes" about this. **Gripe 1:** I think, as is so common, they confuse (see Qualitative Study Designs on p. 381) approaches to data collection with research design. Ignore that paragraph please. **Gripe 2:** They do use the term data saturation in discussing sample size (p. 383). I do not have a problem with the concept of data saturation as a component in determining sample size. However, my argument to you is that *first you determine how you will sample and then you decide whether you will use saturation as a kind of final check to make sure the sample is "big enough" to give you some confidence in your conclusions.* See my discussion of referral (snowball) sampling. I almost always include saturation as a final check after I think a sample is complete to make sure that we are not still finding new information. If we are, I add an additional tier of respondents. **Gripe 3:** I am not fond of the term trustworthiness and have provided readings that use other terms. These authors are very explicit in what they mean by the term and I have no disagreement at all with requisites they discuss. Please not these "gripes" as you prepare your comments. Make sure you review in detail Table 1.

1. How do the authors' comments about the use of the literature review what we have discussed in this class? Why is this important?

2. These authors point to two areas in which a study using qualitative data analysis will require that the author explain very explicitly his/her decision-making process – sampling decisions and "trustworthiness" of the data and their conclusions. I have said "ignore the sampling discussion." What do these authors mean by "trustworthiness" of data and by extension of the conclusions that flow from the data? Comment explicitly about how their definition of the term "trustworthiness" compares to the terms "valid and reliable."
3. What are four key practices to ensure what these authors call trustworthiness of the data – what I would call the rigor of the sampling and data analysis procedures?
4. Describe each of the four practices and explain how a researcher would accomplish each of them. For example, I almost always send a summary of the case file created in qualitative data analysis back to the person who provided the information – the respondent. Why do you think I do this? Which of the processes described here am I trying to complete in doing this?
5. What is inter-rater reliability? Compare how we employ inter-rater reliability measures in quantitative and qualitative data analysis.
6. Why is confirmability important? How do we achieve confirmability?
7. These authors use the term transferability. Which of the critical aspects of research design that we have discussed address transferbility?

Belcher et al.

Transdisciplinary (and interdisciplinary and multidisciplinary) research are increasingly important in contemporary scientific enquiry. In fact, many scientists now speak of "interdisciplinary science" as the norm and interdisciplinary majors that involve two or more traditional academic departments are appearing in the nations' leading research institutions, including UF. Duke University, for example, offers 18 interdisciplinary graduate degree programs, eight of which are include one or more sciences. They range from Bioethics and Science Policy and Global Health (both including social science components) to Computational Biology & Bioinformatics and Medical Physics (no social science component). My own work is highly interdisciplinary in nature, and 95% of the research I do (if not more) includes researchers in departments other than FYCS and a great deal of it involves biological scientists. Every grant-funded project in which I play a role involves an interdisciplinary team and USDA (United States Department of Agriculture) and DOE (Department of Energy) stress the need for interdisciplinary research in securing research funding. NSF (National Science Foundation) stresses the importance of interdisciplinary science as does NIH (the National Institutes of Health), the National Academies of Science, the AAU (Association of American Universities), and many if not most other major scientific organizations in the U.S. The same is true in many other nations. This article provides the results of a systematic review of the knowledge base concerning how best to define and assess the quality of interdisciplinary research.

1. How do Belcher et al. define relevance?
2. How is relevance related to the key ideas of internal and external validity and explanatory power that we have discussed in this class and to the quality (thick versus thin) of the research question?
3. What is credibility? Which of the concepts we have discussed is most closely related to these authors' concept "credibility"?
4. What is legitimacy? Which of the concepts we have discussed is most closely related to these authors' concept "legitimacy"?
5. How do these authors define effectiveness? Give at least one example of how their concept of effectiveness relates to each key concept we have discuss – internal validity, external validity, and explanatory power.
6. Look carefully at Table 3 starting on p. 9 of the document. Examine the rubric they provide for assessing the quality of research. Give several examples of how to use elements in this rubric to assess the quality of the articles you read.

Northcutt & McCoy

Northcutt & McCoy provide several examples of how to use quantitative data analysis to draw conclusions. Remember that results or findings are specific to a study. Conclusions, on the other hand, are broadly applicable to the theoretical population of interest to the researcher. We generalize conclusions – theoretically, statistically, or both. You should read one of the examples of conclusions (generalizable models, etc.) in Northcutt & McCoy and answer these questions based on the example you chose. E.g., you don't need to read all of the examples.

1. What are the conclusions (not results) in the example that you selected?
2. What general lessons about how to draw conclusions from qualitative data analysis can you glean from the example you selected?
3. How does the kind of model-building suggested by Northcutt & McCoy enhance the researcher's ability to
    a. Contribute to theory building?
    b. Contribute to the explanatory power of a body of knowledge?
    c. Permit the research to compare and contrast the explanatory power of different theories?

Hardy & Bryman

This selection discusses grounded theory. I want to make one thing clear – grounded theory is NOT a theory. It is an approach to building theory (for sure) and for some also an approach to data collection and interpretation (but not for everyone). The first part of the Hardy & Bryman article talks about this big discussion about grounded theory as method, grounded theory as interpretation and analysis, grounded theory as a way to build theory – even grounded theory as epistemology. Do **NOT** treat grounded theory as "a social theory." It definitely is NOT a theory and no one claims that. I honestly do not care how much attention you pay to the entire discussion of whether it is method, analysis, interpretive framework, etc. I **DO** care that you pay attention to the discussion of grounded theory as analytic method and approach to theory building. **This discussion starts on page 629. Feel free to ignore the preceding pages.**

1. Use your **own words** to state the common core of ideas about grounded theory as an analytic method and what makes these ideas distinctive in terms of how social scientists use qualitative data analysis. How does this set apart "using a grounded theory approach" to analysis and interpretation compared to other approaches?
2. Grounded theory as an approach also affects the development of research questions. Identify at least three main ways in which a "grounded theorist" would approach developing a research question from the advice you got about how to develop a question in Module 3 (Understanding Research Questions).
3. What does the constant comparison method of analysis and interpretation entail?
4. What is memoing and why is it important to theory building?
5. How do we use the development of categories to build theory?
6. How are models used in the grounded theory approach to analysis?
7. What is axial coding and why is it useful?

Patton

1. Patton comments on the issue of dealing with convergence and divergence in coding and classification in qualitative data analysis. This is a major challenge – simply figuring out "what

goes together" and "what is different enough to start a new category or classification." Explain in your own words his three requirements for a valid (rigorous) process.
2. What does "substantive significance" mean? What are the traits or characteristics of qualitative results that illustrate "substantive significance?"
3. What is "logical analysis?" How does this differ from coding, creating categories, or other forms of classification? Put another way, how does logical analysis move beyond or extend categorization?
4. Matrices are often very useful in logical analysis. Explain how to use at least three kinds of matrices in qualitative data analysis.
5. How do analysis and interpretation differ? Put another way, if you use statistics, you get results of an analysis and then you have to interpret what the results mean. What is the distinction between analysis and interpretation in qualitative data analysis?

Saini & Shlonsky

There are moves underway in the social sciences to establish common criteria to assess the rigor and credibility of primary studies using BOTH qualitative and quantitative analysis. In fact, there are major workshops occurring nationally and internationally to discuss this question. Put simply, what can we be "sure" or "relatively sure" that we know in the social sciences if we have no common standards of what constitutes reliable and valid research results? To some degree this is being solved through the journals and their editorial boards, which are demanding more detail and more justification for methodological choices than in the past. However, the move is also underway in academia and in the public sector in general to demand higher and uniform standards of what constitutes "evidence" on which we can base policy, decision-making, and programmatic interventions. This reading by Saini & Shlonsky addresses these critical issues, with a focus on qualitative analysis.

1. Discuss some of the ways in which researchers can set standards for (a) credibility (truth value), (b) transferability (generalizability), (c) dependability (reliability) and (d) confirmability?
2. What are some recommended practices to reduce the potential for researcher bias in the analysis process and for increasing fairness to research participants and accurately and truly reflecting what they say?
3. What is the qualitative research quality checklist?
4. Can you list at least five components in the checklist – not the specific items, but the facet or dimension of the research protocol, data collection process, and data analysis that the checklist approaches?
5. Some of the discussion about setting common criteria relates to what researchers and users of research should include in our own syntheses of "what we know and what we do not know." We have discussed this throughout this course with regard to internal validity, external validity and explanatory power and the ways in which those three dimensions drive what we consider a body of knowledge. In practical terms, setting common criteria would help establish what other would and would not include in, for example, a literature review. One of the conclusions of S&S is that "Including some assessment of quality is important for conducting qualitative synthesis given that some decisions need to be made on how to include studies of various qualities." Explain this conclusion (what it means and how they reached it) in your own words