Phronetic Iterative Data Analysis

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Phronetic iterative qualitative data analysis is a qualitative method coined by Sarah J. Tracy (2013) that alternates between emic, or emergent, readings of qualitative data on the one hand, and etic use of existing models, explanations, and theories on the other. The iterative component (something developed by a number of previous scholars) refers to a systematic, repetitive, and recursive process in qualitative data analysis.

This approach is phronetic and praxis-based because the researcher begins by identifying a practical problem, dilemma, or curiosity in the field, around which qualitative data can be gathered, organized, interpreted, analyzed, and communicated to address and transform real-world concerns. *Phronēsis* is generally translated as "prudence" or "practical wisdom." As such, the context or practice from which this wisdom comes is of prime importance. Such wisdom is grounded in field-based, contextual knowledge from specific, self-reflexive subject positions and local value positions. The research then aims toward action—serving "to clarify and deliberate about the problems and risks we face and to outline how things may be done differently, in full knowledge that we cannot find ultimate answers to these questions or even a single version of what the questions are" (Flyvbjerg, 2001, p. 140). The approach takes as an assumption that qualitative research methods are especially valuable for unpacking normative questions of value and power—components that are always changing, and thus necessitate analysis that pays attention to situational particulars.

The analysis process contrasts from a grounded approach and is iterative because of the continual and intermittent attention paid to past literature for framing and shaping the emerging analysis. Rather than the study's core meaning being grounded solely in the emergent data, an iterative approach encourages reflection upon the active interests, current literature, granted priorities, and various theories the researcher brings to the data. Logical reasoning is often categorized as either inductive (a bottom-up, "little to big" approach) or deductive (a top-down, "big to little" approach). An iterative approach makes use of each, recursively alternating between the two.

Emic refers to data that comes from a research participant's point of view and is context or field specific. This is contrasted from *etic* understandings in which researchers reference externally and already derived, non-culture-specific theory and knowledge. As noted by Tracy (2013), "a good way to remember the difference between these approaches is that inductive and *EM*ic research refers to meanings that *EM*erge from the field. In contrast, a deductive and *ET*ic research begins with *E*xternal *T*heories (presuppositions or criteria) to determine and frame meanings" (p. 21). By alternating between these two, the researcher visits and revisits the data, connects it with emerging

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insights, and progressively refines focus and understandings (Miles, Huberman, & Saldaña, 2013).

The analysis proceeds by creating guiding research questions, considering past literature that frames the emerging study, and organizing data so it is simple to read and absorb. Key aspects of the analysis include creating first-level descriptive and second-level analytic codes that attend to the research question, and then turning to more advanced qualitative interpretive approaches (such as metaphor or exemplar analysis), when needed, to make interesting claims that impact practice. After several coding cycles, researchers engage in a loose analysis plan, develop codebooks, and write analytic memos. The method is especially appropriate and well suited for applied projects in which the goal is not only to contribute to theory and knowledge, but also help solve a practical problem in the field.

Research questions: Creating a map for the research

Research questions serve as guiding mechanisms through the phronetic iterative analysis process (Figure 1). Qualitative researchers begin with the basic question, "What is going on here?" (Lindlof & Taylor, 2011), with "here" referring to various practices, contexts, cultures, groups of people, documents, or electronic sources. A phronetic approach suggests that good initial questions include: (a) Where are we going? (b) Who gains, and who loses? (c) Is it desirable? and (d) What should be done? (Flyvbjerg, 2001). These questions pay attention to not only "what is," but also, "what should be," or "what could be." These general questions can then be made more specific based upon the specific discipline or context of study. For instance, a communication scholar may be especially interested in asking: "What are people saying?" or "What stories mark this scene?" Meanwhile, a management scholar may ask, "How are organizational structures and polices influencing participant activity?"

Devising research questions early in the research process helps researchers orient themselves to the field and navigate an unfamiliar research context. With preliminary research questions in hand, researchers enter the scene with a sense of purpose, have a compass for their journey, notice new cues that stretch their initial research questions, and modify along the way. The early research questions will likely morph and change as the research unfolds. This approach invites researchers to continually revisit and revise their guiding research questions to attend to interpretations and data emerging in the field.

Organizing and preparing the data and analysis options

A phronetic iterative approach to data analysis views systematic organization and preparation of data as more than simply a logistical part of analysis. Chronological organization of data is helpful for demonstrating the trajectory of a field problem or issue, and may be particularly valuable for analyses interested in correlation, causation, and change over time. Data can also be organized by *type* (e.g., placing field notes in one file, interview transcripts in another), by *source* (all data from one family here, and

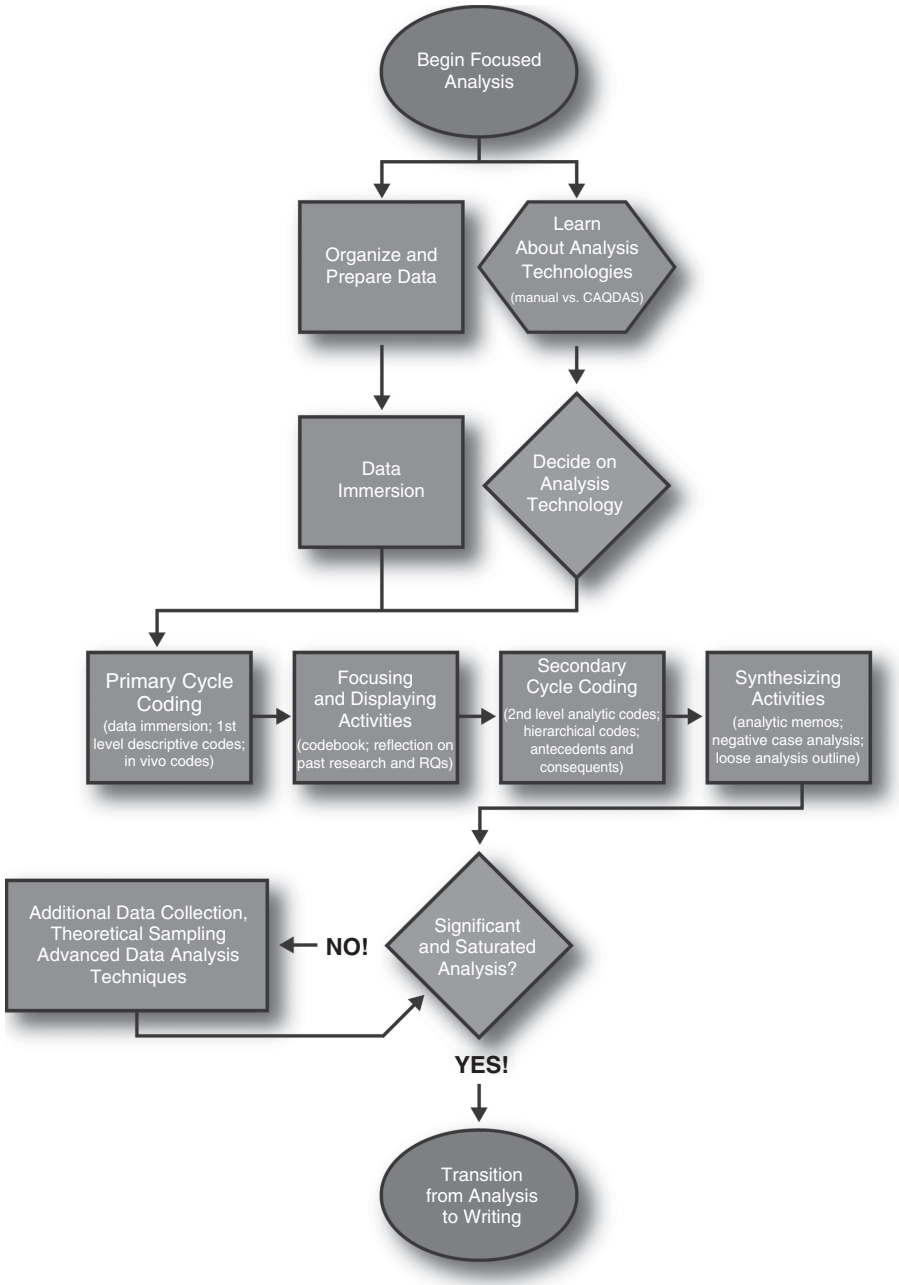

Figure 1 Flowchart depicting iterative analysis process.
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from another family there), or by *demographic attribute* (e.g., all the data from female participants in this folder, male participants in another folder). When data is organized in a certain way, it implicitly encourages the researcher to see some comparisons and overlook others.

One choice to make during this time is which data to include for the analysis. For example, a researcher may have gathered *all* the training documents used in a certain organization, or *all* the emails sent among a research team. However, if the current project's or paper's research question does not need all data, it is important to bracket portions of it so that the focus of the analysis can hone in on more pertinent data. In a phronetic iterative approach, researchers need not analyze all the data collected for the project. The point is to answer a specific research question or questions—not tell the story of an entire culture.

During the organization phase, researchers should consider their personal preferences for managing, processing, and analyzing data. Some people like working on their laptop or with interactive software programs. Others enjoy working with hard copies or whiteboards. A number of analysis choices are available –from low-tech "table-top categories" (Saldaña, 2015) and use of colored pencils, to high-tech use of qualitative data analysis software such as NVivo, Atlas.ti, Dedoose, and MAXQDA. Researchers should realize that software programs, similar to data-processing programs like Microsoft Word, do not *analyze* the data for them, but rather provide a platform from which to do the analysis. Further, any number of low-tech or computer-aided programs can be compatible for phronetic iterative qualitative data analysis (Tracy, 2013).

Data immersion and primary-cycle coding

About three-fourths of the way through data collection, phronetic iterative qualitative data analysis calls for researchers to submerge themselves in the entire breadth of the data through reading and rereading it, listening to it, and thinking about it. During this *data immersion phase*, and in contrast from classic approaches to grounded theory, researchers should also talk with participants, mentors, and collaborators about the data and emerging interpretations. Along the way, they should record early hunches, but reserve judgment for making final conclusions. Researchers should go back to those early open-ended questions such as, "What is an important story here?" Answering such questions begins the process of coding.

Codes are short phrases or single words that refer to a salient or evocative attribute of the data, or to a certain phenomenon such as a belief, action, theme, cultural practice, or relationship (Saldaña, 2015). *Coding* is the active process of identifying data as belonging to or representing to a code.

The first activities of coding in this approach are similar to grounded approaches in that they are open and emergent. The term *primary-cycle coding* refers to initial coding activities that occur more than just a "first" time. Primary-cycle coding begins by examining the data and assigning words or phrases that capture its essence. Primary-cycle codes are usually, but not always, also *first-level codes* that focus on the content of what is present in the data—the basics of who, what, where, when. First-level codes are

descriptive, showing the data's basic activities and processes (e.g., TALKING, JOKING) and generally require little knowledge of past theory or literature to create. Primary-cycle codes may also make use of words or phrases that emerge from the data itself, such as local jargon, slang, or vocabulary.

The *constant comparative method* can also be useful during this stage—a circular reflexive process by which researchers compare data applicable to each code and modify code definitions to fit new data (or else break off and create a new code) (Charmaz, 2006). In primary-cycle coding, researchers can either lump data into large categories or fracture it into smaller derivatives based upon their research goals and personal preferences. Fracturing data into small pieces lends itself to precision, but usually requires connecting codes into larger categories later. Lumping first can provide a big picture of the data, and larger categories (e.g., "humor") can be broken into smaller pieces later on (e.g., "sarcasm," "horsing around").

In choosing which data to code first, it makes sense for researchers to first choose data that is typical or interesting in some way, and then move to a piece of contrasting data. The first data chosen for analysis impacts the resulting coding scheme, so it also makes sense to choose a large breadth that represents a range of the data available. Finally, a detailed primary-coding cycle is not necessary for all of the data. A phronetic iterative approach suggests that doing line-by-line open coding is only necessary for about 20 percent of the data before it is time to move on to several focusing activities, such as creating a codebook.

Focusing the analysis and creating a codebook

Primary-cycle coding provides a start-list from which to create a list of codes and a brief definition and representative example of each via a codebook. Codebooks are like guidebook glossaries for the data—providing a shortcut to knowing the key phenomena that you're finding and continuing to look for during the analysis. Codebooks are especially crucial when collaboratively analyzing data so that each member of the research team is conceptualizing key phenomena in a similar way. Codebooks are also useful for communicating the data analysis process to those outside of the project (e.g., external reviewers) who must judge the rigor of the iterative method.

Unlike a long list of codes that may develop in first-cycle coding, codes in the codebook should be limited. First, they should be limited to those that attend to the unfolding research question(s). Codes are essentially shorthand for potential answers to research questions. If the codes are not attending to the research question, this is the time for researchers to rethink their codes, modify the research question(s), or collect more or different data. Of course, a variety of codes, when variously grouped, could answer a variety of questions. As such, it makes sense to focus on the questions (and corresponding codes) that are of most theoretical or practical significance, interest, and value. Second, the codes should be limited in number to those that the researcher or research team can manage and efficiently process. This number will vary from person to person, but it is important to realize that when the research team cannot hold the corpus of code definitions in short-term memory, or cannot efficiently recall them

through a computerized software program, then analysis quality is compromised. A rule of thumb is to be able to have all codes viewable and searchable on a single page or document (even if this page or document covers an entire whiteboard or easily searchable/viewable computer system).

Secondary-cycle coding: Second-level analytic coding

Secondary-cycle coding asks the researcher to critically examine the primary-cycle codes, then organize, synthesize, and categorize them. Whereas first-level codes are generated by and reflect the data, the researcher uses first-level codes coupled with interpretive creativity and theoretical knowledge to generate *second-level codes*, which explain, theorize, and connect the data. Second-level coding requires identifying patterns and cause/effect progressions, and connecting data to relevant theories and models. Indeed, to do second-level coding, the researcher benefits from having a familiarity with theory and research connected to the topic and research question(s). For instance, while a researcher could create a first-level code as "stress" without in-depth knowledge in emotion theory, the second-level code of "emotional contagion" requires an understanding of past burnout research that shows that when a caregiver takes on the stress of a client, they become stressed and burned out. The second-level code of "emotional contagion" can only emerge and be understood by referencing past literature.

To creatively process and develop second-level codes, researchers can also juxtapose various literatures and borrow from other fields, models, and assumptions—a process called "prospective conjecture." For example, perhaps by considering burnout literature alongside knowledge worker literature, a new code might emerge that relates to the emotional fatigue from always having to seem like you are developing new knowledge—say, "innovation labor." This type of novel new second-level code may indeed be a primary contribution of the research project (Rush, 2010).

In secondary-cycle coding, researchers also begin grouping together first-level codes into larger groups. Similar to *axial coding* (Charmaz, 2006), this process, termed *hierarchical coding* in a phronetic iterative approach, includes systematically assembling codes into hierarchical or umbrella categories that make conceptual sense. For example, if a researcher was studying the emotional toll of doing innovation work, and came up with the larger code of "innovation labor," several smaller types of innovation labor may fall within this larger code, such as: (a) faking an inflated mood or (b) artifacts of success. The hierarchical code would serve to link these other codes together.

Throughout the primary and secondary coding cycles, researchers gradually progress from inductive and descriptive coding to more focused and analytic coding. This process helps researchers see how the unfolding data analysis helps solve the problem or dilemma identified at the beginning of the research process, and points to how it attends to salient research foci/questions in the existing literature. If the analysis is not attending to these issues, the researcher may need to collect more data, or else move toward additional synthesizing activities.

Synthesizing and making meaning from codes

The phronetic iterative data analysis approach asks researchers to systematically record their interpretive thoughts and ideas as they conduct their analysis. Doing so can take a number of forms. For example, researchers can create a "methods section draft" that chronologically discusses accomplishments and timeline (e.g., week of December 8, read and color-coded my data with marginal notes; week of December 15, started focusing in on 10 descriptive first-level codes such as …). This "methods draft" document is invaluable as the researcher creates an accountability trail for use in resulting publications, grant reports, or advisor discussions.

During this stage, the researcher should also write *analytic memos*—informal documents where researchers are able to free-write, reflect, and converse with themselves about the data and generally dump their thoughts. Memo-writing is a space to write first and understand later—through writing such memos, researchers gain insight about the fundamental stories. Although analytic memos can take many forms, they are often characterized by a code definition, explication of its properties or conditions, its consequences, its connection to other codes, examples of raw data that illustrate the code, and hypotheses about the code (Charmaz, 2006).

As researchers make meaning, they will continue to revise research questions, claims, and hypotheses. Some data will strengthen claims but researchers should also question themselves by actively seeking out deviant data that contradicts or questions the emerging hypothesis, and then revise arguments so they better fit *all* the emerging data. This process, known as "negative case analysis" in grounded theory, discourages the practice of only focusing on data that fit early explanations.

Another important practice midway through secondary-cycle coding, is creating a *loose analysis outline* that notes the primary research questions/foci and potential ways the emerging codes are attending or not attending to these (see Tracy, 2013 for an example). This document outlines the scope of the research project, while codes and analytic memos can serve as the ingredients that help flesh it out. The outline serves to focus the analysis, and identifies which codes are most appropriate to probe and follow in the final cycles of coding. After developing this outline, the researcher can go back to the data, and use the resulting codes in a more etic, top-down, deductive manner.

After progressing through these steps, researchers should be able to answer the question, "Is this study interesting and significant?" If the answer is no, this means the data collection or analysis is not yet complete. Past literature may also be helpful to sensitize the researcher to issues or contexts they are not yet able to appreciate in the data. Finally, researchers can also turn to more advanced types of data analysis—such as analyzing for exemplars, metaphors, typologies, doing discourse or conversational analysis, or making use of flowcharts and matrices. Each of these advanced types of data analysis can pair well with the basics of a phronetic iterative qualitative data analysis.

SEE ALSO: Axial Coding; Code List/Codebook; Constant Comparison; Data Saturation; Grounded Theory; Inductive Model; Qualitative Research Question; Thematic Analysis/Interpretive Thematic Analysis

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