

Virtual Work and Human Interaction Research

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Chapter 12

Conducting Effective Interviews about Virtual Work: Gathering and Analyzing Data Using a Grounded Theory Approach

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ABSTRACT

This chapter explicates interviewing as a viable research method for studying virtual work. The chapter begins with a review of the existing interdisciplinary scholarship on qualitative interviewing along with three modes of interviewing, interviewing techniques, formats, and rigor. Next, the chapter reviews exemplary research reports on virtual work to illustrate best practices in interviewing and data analysis. Finally, suggestions for collecting, analyzing, and interpreting interview data about virtual work are discussed.

INTRODUCTION AND BACKGROUND

“Qualitative research is an umbrella term that encompasses several philosophical or theoretical orientations” (Merriam, 2002, p. 15); it includes methodologies such as biography, case study, ethnography, and phenomenology (Creswell, 1998;

Merriam, 2002). Qualitative research provides a viable alternative to the limits imposed by the positivist research model and empirical analyses. A major strength of qualitative inquiry lies in its ability to provide a depth of understanding about the phenomenon under study (Rubin, 2000). Qualitative methods provide rich accounts of human experiences and, of particular interest to social scientists, how interactants apply meanings

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to those experiences (Fossey, Harvey, McDermott, Davidson, 2002; Rubin & Rubin, 2005). The most popular qualitative research methods include interviews, observation, and archival studies (Bowen, 2005). Of the many qualitative data collection methods, interviewing provides the most direct, research-focused interaction between researcher and participant (Kvale, 1996; Rubin & Rubin, 2005; Stroh, 2000). Interviewing is widely valued by multiple disciplines as a primary research tool that allows for initial exploration of a previously uninvestigated phenomenon. Conversely, interviewing can provide fresh insights into a well-explored but complicated phenomenon surrounded by theoretical controversy or conflicting findings.

The body of research on organizational behavior and the research literature examining online behavior both enjoy a rich tradition of qualitative methodologies, including interviewing. Thus, it comes as no surprise that interviewing emerges as a prominent research methodology in the study of virtual work. The purpose of this chapter is to explicate interviewing as a research methodology and its application to the study of virtual work. The chapter contains four distinct sections: First, we provide a brief literature review on qualitative interviewing along with a brief discussion of three specific modes of interviews (i.e., face-to-face, telephone, and online). Then we explain basic interviewing techniques, formats, and rigor. The third section provides multiple case studies of published research reports to illustrate the techniques and types of interviewing methods employed in the study of virtual work. Finally, we offer advice on how to conduct effective interview studies of virtual work by providing specific recommendations for data collection, analysis, and interpretation.

INTERVIEWING

Scholars have attempted to define the method of interviewing with different emphases. Rubin and

Rubin (1995) refer to interviewing as the art of hearing data. They further explain, “Qualitative interviewing is a way of finding out what others feel and think about their worlds. Through qualitative interviews you can understand experiences and reconstruct events in which you did not participate” (p. 1). Furthermore, interviewing involves many choices. Hookway (2008) argues that the interviewing method for data collection depends on participants’ willingness to generously share their feelings, thoughts, and experiences. On the other hand, Kvale (1996) maintains, “Interviewing is a craft: It does not follow content- and context-free rules of method, but rests on the judgments of a qualified researcher” (Kvale, 1996, p. 105). In both statements, the subjective choices by the participants and the researcher play an important role in data collection and interpretation.

Lastly, Seidman (1998) argues that interviewing is a method that “provides access to the context of people’s behavior and thereby provides a way for researchers to understand the meaning of that behavior... Interviewing allows us to put behavior in context and provides access to understanding their action” (p. 4). This definition highlights the need to understand participants’ meaning making and the context in which meaning making take place. Overall, qualitative interviewing involves hearing the data, finding out the feelings and thoughts of the informants, researchers’ making active interpretations and decisions, as well as understanding the meaning and context that prompted informants’ behaviors. Given this overview of the different definitions of interviewing, we will discuss three particular modes of interviewing modalities.

Face-to-Face Interviewing: Conducting an interview in person has several advantages. First, meeting face-to-face allows the researcher to pick up subtle nonverbal cues, such as hand gestures, body positioning, eye contact, facial expression, etc. (Holt, 2010). These nonverbal cues may provide useful insights for later data analysis, interpretation, and coding. Second, informants

often provide more detailed responses during face-to-face interviews, compared to telephone interviews (Sturges & Hanrahan, 2004). Therefore, conducting interviews in person is likely to yield more data for the researchers to work with. Third, assuring informants of anonymity and confidentiality can be better achieved when meeting face-to-face, and this is especially true in intercultural situations (Harvey, 2011). This argument points out the relational and rapport building needs for conducting effective interviews. While many traditional qualitative researchers believe that face-to-face interviews are the only path to best and authentic data (Silverman, 2001), this assumption can be challenged (Hookway, 2008). In fact, Sturges and Hanrahan (2004) argue that telephone interviews yield comparable data quality as face-to-face interviews. We will discuss telephone interviewing next.

Telephone Interviewing: Due to time constraints and the costs involved, sometimes it is not possible and not feasible for researchers to travel to multiple people and places to conduct face-to-face interviews (Gratton & O'Donnell, 2011). The first alternative is telephone interviewing. Telephone interviews can be more time efficient for both the researcher and the informants (Stephens, 2007). Instead of coordinating and traveling for an appointment for a face-to-face interview, a phone interview will help both the researcher and participant save time. Moreover, qualified informants and willing participants may not be many in the immediate vicinity of a researcher. By expanding the data collection method to using the phone, the researcher could greatly increase participation in the project (Harvey, 2011). Additionally, telephone interviewing can often help reduce the impact of the researchers and the informants, such as their race and ethnicity, during the interview (Holt, 2010). In some interview projects, the superficial identification, thus stereotypical assumption, of participants and researchers as perceived by each other, can distract both parties' attention away from the central topic of interests. Given all the

advantages discussed, Holt (2010) argue that phone interviewing could be considered a better choice over the traditional method under certain circumstances, and it should not be regarded as the 'second-best' option to the more familiar face-to-face approach. Here we will discuss yet another alternative to face-to-face interviewing, given the proliferation of Internet-based communication technologies.

Online Interviewing: Hine (2010) suggests that one way to define online interviewing is research that utilizes the Internet as its medium. Moreover, James and Busher (2006) refer to web-based approaches to interviewing as online interviewing. In today's world, the Internet provides many synchronous (i.e., skype, IM, etc.) and asynchronous communication (i.e., emails, webpages, etc.) technologies that makes online interviewing and information searching a viable choice for qualitative research. In a latter piece of work, James and Busher (2009) argue that the Internet is a complex phenomenon that involves dynamic social, spatial, and temporal dimensions that shape the relationships and context underlying a research project. In other words, online interviewing is a research method that deserves a careful discussion.

Under the category of online interviewing, one particular technique is email interviewing. James and Busher (2006) discuss several important advantages of this approach. First, participants decide when they want to respond to the interviewing questions via emails. This gives participants control in the research process. Second, email interviewing is less stressful for participants, because they can pace themselves and choose to respond at a time that is most suitable for them. Third, because there can be more time to compose one's response, the answers provided via emails are often more reflective and thoughtful. These three arguments provide a useful framework for comparing asynchronous online interviewing with face-to-face, telephone, and synchronous online interviewing.

INTERVIEWING METHODS

The goal of any qualitative research is to obtain a depth of understanding that provides a clearer and more comprehensive picture of the phenomenon under study (Cresswell, 1994; Rupsiene & Pranskuniene, 2010). As one of many qualitative data collection methods, interviewing provides a direct, research-focused interaction between researcher and participant (Kvale, 1996; Stroh, 2000; Rubin & Rubin, 2005) and is widely valued as a primary research tool by multiple disciplines (Rubin & Rubin, 2005). Indeed, interviewing is recognized both as an academic and practical research tool (Rubin & Rubin, 2005).

Basic Interviewing Techniques

As previously discussed, an interview traditionally takes the form of a one-on-one, Face-to-Face (FtF) conversation in which a researcher poses inquiries to a single respondent from a pre-prepared protocol containing questions or talking points about the topic under study. A researcher typically presents carefully scripted inquiries with appropriate probes and improvisation. Interviews tend to be relaxed conversations where the researcher primarily listens rather than questions aggressively. A researcher will conduct a series of such conversations with specific types of individuals about specific subject matter. Typically, interviews are audio- or video-taped and then transcribed for later analysis. Usually the transcription of the formal interview constitutes the “meat” of an interview study.

Interviewing can provide and increase understanding of experiences and/or events even when the researcher did not personally participate in the experiences (Rubin & Rubin, 2005). For example, interviews with virtual workers from Joplin, Missouri may provide the researcher with insights into post-tornado work life without the researcher being at ground zero during the tornado. Interviewing allows participants to describe their experiences

and thus affords researchers opportunities to explore meanings reflective of multiple participant views (Misheler, 1986; Murray & Sixsmith, 1998). During interviews, researchers can become involved with participants who become “partners rather than objects of research” (Rubin & Rubin, 2005, p. 10).

The concepts of multiple and socially-created realities (Berger & Luckman, 1967) is presumed in the nature of the interview (Corbin & Strauss, 2008; Denzin, 1998; Denzin & Lincoln, 1998). The issue becomes how the researcher can best facilitate the informants to reveal their perceived realities. While facilitating the revelation of meaning via the questions asked, the interviewer responds with neutral, accepting comments, thus maintaining the topical focus of conversation on the object of study (Denzin, 1998) and facilitating the informant to reveal his/her vision of reality concerning the phenomenon under study. After the interviews are completed, the transcripts provide researchers a text they can analyze for emergent themes. Such themes provide an understanding of “what is going on” for the participants.

Interviewing Formats

Interviewing formats range from the highly structured to the semi-structured and unstructured (where the participant tells his / her story, thus, assisting the researcher to identify areas of importance to the participant). Interviews have been described as conversations designed to provide researchers insight into the realities or worldviews of their informants (Kvale, 1996) and, as such, carry an unpredictable nature as the informants reveal their socially constructed meanings (Berger & Luckman, 1967). Regardless of the formality of the interviews, researchers and participants engage in conversations that allow meanings to emerge through interaction (Corbin & Morse, 2003; Corbin & Strauss, 2008; Rubin & Rubin, 2005).

Interviews can be conducted with individuals, focus groups, or both. For example, in a study of a global software team, Gibbs (2009) conducted both one-on-one and focus group interviews to yield rich data about how distributed workers negotiate dialectical tensions across time, space, and culture when they balance between a mix of face-to-face and virtual work arrangements during the project period. Interviews can take many forms including oral histories, life histories, and evaluations (Rubin & Rubin, 2005). Interviews can employ multiple communication modalities and formats, including many technologically-assisted channels of communication, as discussed in detail below.

Rigor in Interviewing

Rigor in interviewing may require engaging in lengthy interviews (rather than relying on brief conversations) and opting for more (rather than less) follow-up interviews as ways to allow and improve the interviewer's chances of overcoming potential social desirability biases (Merriam, 2002; Padgett, 1998; Rubin, 2000). Interviewing multiple participants aids in theme emergence and often involves collecting and presenting multiple stories to illustrate themes that emerge across interviews (Merriam, 2002; Rubin & Rubin, 2005).

Padgett (1998) suggested multiple methods of increasing the trustworthiness of the interview: auditing, prolonged engagement, triangulation of data, peer debriefing and support, member checking, and negative case analysis (where researchers conduct a thorough search for consistencies and inconsistencies). The goal of qualitative interviewing is not to eliminate inconsistencies but, rather, to provide information that increases understanding of inconsistencies and why they occur (Rubin & Rubin, 2005). Bowen (2005) suggested triangulating the interview data from numerous sources as a way to corroborate researcher(s) discovery, thereby, adding confidence to the trustworthiness of the conclusions.

Moran-Ellis et al. (2006) argue that triangulation can be understood as using multiple methods to “to reveal the different dimensions of a phenomenon and to enrich understandings of the multi-faceted, complex nature of the social world” (p. 48). In other words, insights in different forms can be complementary to each other in providing a fuller picture of the phenomenon of interests (Greene, et al., 1989). Researchers have acknowledged that triangulation is important because it helps us better get at the multiplex and contingent nature of social world (Fielding & Fielding, 1986). Later in this chapter, we extend these arguments to the use of various forms of online interviewing data, including online interviews, IM, emails, web pages, online profiles, etc.

Transparency involves leaving an audit trail of raw data (interview transcripts) that other researchers can use to determine if findings are reproducible and verifiable (Rubin, 2000, p. 175). Further, transparency in reporting involves providing a thorough and detailed methodological description that acknowledges strengths and weaknesses of the study (Rubin). In addition to transparency, Rubin and Rubin (2005) suggest that researchers must explain the consistencies or inconsistencies of themes, individuals, and across cases; such explanations communicate a description of what it means to be in the particular situation studied. Interviewing is a valuable way to build a “consistent portrait that is close to the evidence” through which readers can be persuaded the evidence is credible (Rubin & Rubin, p. 92).

In summary, qualitative interviewing provides researchers with a useful method for collecting, managing, and analyzing data that can be used to generate theory or discover themes and patterns within a data set. Interviewing is a particularly advantageous approach, given its conversational nature that can tap participants' socially constructed meanings (Berger & Luckman, 1967). The next section of the chapter focuses on conducting online interviews.

Conducting Online Interviews

A plethora of research recognizes the impact Computer-Mediated Communication (CMC) can have on personal, social, and professional relationships (see Wright & Webb, 2011). CMC has been recognized as an effective social support medium (Burlison, Albrecht, & Satason, 1994; Pennebaker & Traue, 1993) that can promote a socially created, friendly environment that assists in overcoming many barriers common to FtF interactions (Kazmer, 2007; Thompson-Hayes, Gibson, Scott, & Webb, 2009; Rheingold, 1991, 1993). CMC has been recognized for its potential to provide an effective interview platform and has served as the methodology for multi-faceted lines of research exploring technology-mediated work (e.g., internet, telephone, teleconference, Instant Messenger [IM], Skype) as well as the opportunities and challenges of virtual work (Davis, Bolding, Hard, Sherr, & Elford, 2004; Kazmer & Xie, 2010; Thompson-Hayes, et al., 2009).

According to Kazmar and Xie (2008), researchers increasingly rely on online interviewing such as interviews conducted via email or IM. For example, email interviewing is becoming increasingly common; McCoyd and Kerson (2006) argue that there is an emerging body of literature indicating an “acceptance of email interviewing as a legitimate research technology despite the scarcity of methodological analysis in the literature” (p. 392).

Using CMC to conduct interviews brings with it both obvious (and not-so-obvious) opportunities and challenges. Research suggests that CMC (e.g., e-mail, IM, teleconferencing, Skype, chat and team rooms, e-meetings) can be a valuable asset in the qualitative research process by helping to bridge and mitigate space, time, cultural, social, and educational differences (Kazmer & Xie, 2008; Thompson-Hayes, et al., 2009). Furthermore, CMC can encourage collaboration on interactive projects that, heretofore, only could be done FtF

(Ramirez, Walther, Burgoon, & Sunnafrank, 2002; Thompson-Hayes, et al., 2009; Walther, Loh, & Granka, 2005; Walther & Parks, 2002).

Opportunities. The flexibility of online interviews in text, voice, and video formats (Kazmer & Xie, 2008; Mann & Stewart, 2002) can accommodate the needs of both researcher and the participant (e.g., asynchronous or synchronous, public or semi-private). Similarly, email can help overcome difficulties in data transcription, provide access (e.g., ease in collaborating across geographical areas and time zones), and expand data gathering opportunities (Kazmer & Xie, 2008; Thompson-Hayes, et al., 2009). As a medium for interviews, CMC is not perceived to be less emotional or less personally involving medium than FtF interaction (Derks, Fisher, & Bos, 2008). Research suggests increased collaboration among geographically distant coworkers who use IM for data collection and analysis (Cameron & Webster, 2005).

Challenges. Despite the numerous possible communication technology options available for use in a single research project, most researchers prefer to use only a few types of CMC technology per study (Initial, 2011; Thompson-Hayes, et al., 2009), believing that switching from one technology to another may impede the collaboration process (Initial, 2011; Kazmer & Xie, 2008; Ramierz & Zhang, 2007). Further, researchers may be wary about mixing data obtained from differing interview modalities (e.g., telephone, IM interviews), believing that inherent inconsistencies between modes may contaminate data sets (Kramer & Xie, 2008; Wiesenfeld, Raghuram, & Garud, 2001).

Fewer Non-verbal Cues. While not posing insurmountable problems, among the most frequently reported challenges to virtual interviewing versus FtF interviewing is the reduced number of nonverbal cues available for decoding (Kazmer & Xie, 2008; Thompson-Hayes, et al., 2009). In their research on how professors use CMC to enact

their scholarly partnerships, Thompson-Hayes et al. suggest that, given the demands of virtual intellectual teams, multiple forms of communication technologies may be required to complete collaboration projects; the type of technology employed may vary depending upon the nature of the task. For example, edited documents are typically conveyed via email, whereas problematic topics (e.g., disagreements) and creative work (e.g., theorizing, developing a research design) typically are discussed in richer modes such as FtF interactions, Skype, or telephone conversations. Similarly, researchers may prefer richer modes of online interviewing, such as Skype or telephone conversations.

Lack of Access to or Hesitancy to Use Technologies. While electronic interfaces such as email may work well for less complicated tasks, email alone is not sufficient to complete complex virtual work tasks (Barile & Durson, 2002). Despite the numerous CMC options available for interviewing, commonly occurring challenges and frustrations identified in the research include lack of access to (Jankowski, et al., 2001) or hesitancy to use technology, often due to discomfort with the technology (Ingram, Hathorn, & Evans, 2000; Shedletsky & Aitken, 2001; Walther, et al., 2005) as well as the belief that the data gathered will be inferior to data collected via FtF interviewing (Initial, 2011; Kazmer & Xie, 2008). For example, in their study of how professors used CMC in their professional writing partnerships, Thompson-Hayes et al. (2009) discovered that few professors utilized IM technologies. However, this limitation seems less likely to occur in interviews with virtual workers, except perhaps for those new to the job.

Potential Ethical Dilemmas. Because online interviewing can prompt researchers to examine all steps in the research process, additional attention may be paid to how participants are recruited to participate in the research. Traditional methods of

assuring confidentiality do not necessarily apply when conducting qualitative research via CMC. Thus, online interviewing poses potential ethical dilemmas in recruiting, obtaining signed consent, and scheduling to interviews (Flicker, Haas, & Skinner, 2004; Hamilton & Bowers, 2006, Kazmer & Xie, 2008; Shachaf, 2008) as well as assuring confidentiality of *both* participant and researcher. For example, the researcher must consider (and attempt to safeguard against) the potential implications of confidential information that is distributed online as such material may potentially reach people other than, or in addition to, the intended interview participant (Hamilton & Bowers, 2006). Especially for researchers comfortable with technology, the convenience of conducting online interviews often outweighs the drawbacks, as many problems traditionally associated with FtF and telephone interviews (e.g., geographically distant, difficulty scheduling mutually convenient times, cultural differences in transcribing interviews) can be overcome through online interviewing (Shachaf, 2008; Thompson-Hayes, et al., 2009). Additionally, online interviews can supplement data from telephone and FtF interviews. Indeed, multiple modes offer multiple opportunities to gather unique data sets—each with distinct advantages—that can be used to triangulate results (Kazmer & Xie, 2008; Shachaf, 2008; Thompson-Hayes, et al., 2009), as discussed in more detail in a later section.

Given the challenges and advantages of online interviewing, its effective use may not be obvious. To provide clarity and to illustrate effective use of interviewing to study virtual work, including online interviewing, the next section provides in-depth descriptions of multiple case studies, specifically, multi-disciplinary published research on virtual work environments. Relevant methodological details are discussed to illuminate how researchers from a variety of disciplines employed interviewing to study virtual work.

CASE STUDIES OF BEST PRACTICES TO EFFECTIVELY STUDY VIRTUAL INTERACTIONS

Interviewing methods have been used to study virtual work and online interactions in three ways: in conjunction with surveys, to generate theory, and as data analytic tools. These three methods have been used individually as well as in combination to successfully conduct research on virtual work that has led to publication. This section of the chapter discusses three such research reports to illustrate these methods: Wiesenfeld, Raghuran, and Garad (2001), Shachaf (2008), and Thompson-Hayes et al. (2009).

Interviews in Conjunction with Surveys.

Interview data can be used in conjunction with survey data—both as a first step in survey research and as a means of interpreting survey results. In their study of organizational identification among virtual workers, Wiesenfeld et al. (2001) employed semi-structured interviews in two ways (1) to generate survey items measuring work-based social support and (2) to interpret the results of their subsequent survey. To develop new survey instruments, the authors modified existing survey instruments measuring social support based, in part, on their interview data: “We rephrased the items [of the work-based social support scale] slightly based on our preliminary interviews and pretests” (p. 220). The authors included interview items in an appendix. Questions that appear to tap into work-based social support included “Has your relationship with your manager changed? How? Has your relationship with your coworkers changed? How? and do you feel you received all the support you needed to telecommute?” (p. 277).

Although the authors did not report a thematic analysis of their interview data in this article, they interpreted their survey results in relationship to the interview data. For example, their survey data revealed that participants’ need for affiliation was positively correlated with organizational identification. The authors interpreted this result

as “consistent with themes that emerged in our interviews with virtual workers” (p. 221). Thus, Wiesenfeld et al.’s (2001) study provides an example of how quantitative and qualitative data co-mingle and how interview data can supplement survey research.

Interviews to Generate Theory. Interview data can be used to generate theory or theoretical models. This approach is aligned with grounded theory, a topic discussed by Gibson and Webb in another chapter in this book. For example, Shachaf (2008) conducted 41 interviews with members of Global Virtual Teams (GVTs) from nine countries to develop a model of the impact of cultural diversity, information, and technology on communication in decision-making. Shachaf developed an interview protocol from a review of relevant literature, conducted interviews, transcribed recordings of the interviews, and then analyzed the transcripts via “open coding” (i.e., identifying initial categories that emerge from the data by examining the data in minute detail without imposing a priori categories) to generate basic themes.

Next, Shachaf (2008) undertook “pattern coding” (i.e., breaking down abstract, thematic categories into smaller, more concrete categories) to further analyze the data through the use of the “constant comparison” process (i.e., comparing data to emerging thematic categories throughout the analysis process). To identify relationships among the variables, Shachaf used the “search and retrieve” function of NVIVO 1.3 software and developed a matrix of co-occurring ideas or themes (variables). Her research produced a model of relationships among variables that is grounded in and emerged from interview data. Specific findings from the study were that participants believed that (1) GVT projects are enhanced by multiple viewpoints and an array of skills that diverse members bring to a project. (2) Diversity can have the negative effect of producing misunderstandings due to language, verbal, and nonverbal differences. (3) Information and communication

technology (e.g., email, teleconferencing, Internet chat) can mitigate the negative effects of cultural diversity, while enhancing the positive effects. For example, participants said they could spend more time constructing an email to make the message clear and reduce misunderstandings.

Data-Analytic Tool with Interview Transcripts. Finally, qualitative analysis can be applied to interview data, where interview data is processed interpretively without the explicit intent of developing theory. In this circumstance, researchers look for patterns and themes in a dataset, while *not* building a theory or theoretical model. This inductive approach would simply shed light on *what is there* in the data without imposing meanings on the data.

Such approaches normally employ grounded theory techniques such as open coding. However, interview data also can be processed to supplement, extend, or expand existing theory in a more deductive process. For example, Thompson-Hayes et al. (2009) successfully used both approaches in their study of professorial collaborations. They conducted 20 semi-structured telephone interviews and subsequent email interviews with university professors to examine the role of CMC in their professional collaborations. Telephone interviews were conducted first and centered around an 11-item interview protocol based on suggestions from experts in qualitative interviewing (i.e., Fontana & Frey, 1998; Kvale, 1996). Next, the authors emailed a four-item, open-ended questionnaire to participants to follow up on specific areas of inquiry. The telephone interviews were independently conducted by three researchers on the four-person team. Each interviewer transcribed her interviews verbatim, then read and reread the transcripts to identify themes within her dataset through inductive analysis. Next, the three researchers met via one two-hour conference telephone call to discuss themes across the entire sample. As a validation procedure, a deliberate attempt was made to consider negative evidence

for the identified themes, in accordance with Miles and Huberman (1994) guidelines.

This interpretive process produced six discrete themes concerning CMC professorial collaborations: (1) limited technology (i.e., professors in the sample used primarily email for its ease of use and familiarity and few other technologies), (2) expanded opportunities (i.e., professors cited the convenience that CMC affords to work on projects that would have been difficult or impossible FtF), (3) instrumentality (i.e., professors indicated that CMC did not replace FtF communication but served as a value tool for working out the mechanical aspects of collaboration such as sharing edits), (4) nonverbal deficit (i.e., professors reported compensating for the lack of nonverbal elements inherent in CMC by using emoticons and strategic language to address potential misunderstandings or socio-emotional aspects of a message), (5) relational connection (i.e., professors indicated that they preferred to work with others they could trust), and (6) personal autonomy (i.e., while many professors appreciated working collaboratively, they liked the independence that CMC allowed). As a validation procedure, the fourth member of the research team independently examined randomly selected samples of the data set to confirm that each theme appeared in more than one transcript across at least two interviewers.

The lack of conceptual overlap along the emergent themes together with the discovery of two themes that formed a dialectic (i.e., relational connection and personal autonomy) prompted the fourth team member to organize the initial themes into dialectical tensions (i.e., relational connection vs. autonomy, creativity vs. mundane tasks, task vs. social emotional goals, novelty vs. efficacy of CMC). Then, the researchers undertook a secondary analysis: The three team members who served as the interviewers and original coders re-examined the interview transcripts to verify the presence of the proposed dialectics in the transcripts of the interviews they conducted as well as in the transcripts of the other two interview-

ers. The fourth coder reviewed random sections of each transcript and verified the presence of at least one dialectical tension in each transcript and multiple dialectics in multiple transcripts of individual interviews.

The Thompson-Hayes et al. (2009) study provides an example of how multiple interview methods can be mixed to achieve complex research goals. The study combined inductive as well as deductive approaches to processing interview data. Grounded theory procedures were used to identify initial themes; then a theory-driven, deductive approach was used in the second level of analysis to verify the emergent dialectics. The second level of analysis was unanticipated as the dialectics emerged from the grounded data analysis. Due to this development, a literature review on relational dialectics was not included in the beginning of the paper. In fact, a sentence in the “Discussion” section reads, “We did not anticipate finding dialectical tensions at the onset of this project and thus we here provide a brief explanation of communication and dialectics” (p. 213). Thus, although some scholars may argue that theory driven (deductive) versus data driven (more inductive) approaches are not compatible, we assert that sometimes the data speak to the researchers, and that the messages from the data can lead researchers to work within the parameters of an existing theory.

Further, the Thompson-Hayes et al. (2009) study employed a “mixed” methodological data set; telephone and email interview data were collected separately from the same set of participants and yet analyzed as one data set. Some researchers are reluctant to “trust” interview data from a “mixed” data set, believing that the findings will be “messy” or will lack depth and richness. FtF interviews may have the advantage of appearing “rich” but they pose serious potential drawbacks as well (e.g., geographic distance, scheduling mutually convenient times for the interviews, labor-intensive transcription process). We could

locate no evidence that interview data collected via differing communication channels produced data sets of different quality or content. In fact, Krusiewicw and Wood (2001) noted that “A comparison of face-to-face and email interviews revealed no notable differences in length, detail, disclosiveness, anecdotal content, and personal tone or substantive richness” (p. 790). Furthermore, it is increasingly common for virtual work researchers to report results from interview data collected via multiple communication channels (e.g., Gibbs, 2009; Kee & Browning, 2010).

Moreover, people who work in virtual environments may be more comfortable with online data collection. Online chat, email, and telephone interviews may be an *ideal* ways to supplement or replace FtF interviews with virtual workers. Further, if data collection progresses through stages, it may be advantageous to use one data set to guide protocols for the next data set.

The three case studies discussed above (i.e., Wiesenfeld, et al., 2001; Shachaf, 2008; Thompson-Hayes, et al., 2009) demonstrate the ways in which interviews have been used in published research on virtual work environments. The next section offers practical advice and specific strategies for collecting and interpreting interview data using GT techniques.

EFFECTIVE USE OF INTERVIEWING AS A RESEARCH METHOD

Given the above interdisciplinary overview of interviewing as well as the in-depth discussion of illustrative research studies of virtual work conducted via interviews, we here offer specific recommendations to researchers of every discipline who study virtual work and desire to employ interview methodologies. We organize these recommendations into subsections based on the stages of data collection, data analysis, and data interpretation.

Data Collection

The formal interview, whether synchronous (as in FtF, Skype, phone calls) or asynchronous (as in emails or to a certain extent, IM, because of some lag time), often constitutes the “meat” of research data about virtual work. During a formal interview, a researcher presents carefully scripted questions with appropriate probes and improvisation. This part of the interview produces research data. To gather rich interview data for studying the complex phenomenon of virtual work, we recommend that the researcher consider triangulating data by, in addition to conducting interviews, gathering data from additional sources such as organizational websites, individual online profiles, recruitment emails exchanges, follow-up communication, and organizational internal communication and/or listservs. We elaborate on these potential data sources in more detail below.

Organizational Websites. Virtual workers and their organizations often maintain a strong online presence. Today’s organizational websites and social media sites typically provide information about the companies and their employees. Furthermore, many virtual workers have strong social media presences, using web 2.0 tools such as LinkedIn, Twitter, and Facebook. Information displayed on these organizational and individual sites is often public. Therefore, information extracted from these sites could be used as the first type of data for studying virtual work. For example, Kee and Browning (2010) analyzed information from the website of the government agency that funds a distributed network of scientists and technologists; they compared the website information to their interview data to reveal a dialectical tension between investing in building a technological infrastructure to support virtual scientific work or to advancing the technology itself. This dialectical tension was discovered only as the result of incorporating information from the web into an interview study.

Communiqué with Participants as Data. Researchers today often approach potential research participants via recruitment emails. If a virtual worker agrees to participate in the study, a series of email exchanges typically clarifies the purpose of the study, verifies the fit of the potential participant with the study, and explains the research protocol. Thus, an informal interview has started with the first recruitment email. We suggest treating these email exchanges as research data, after receiving the participant’s consent to do so. Obviously, researchers of virtual work should keep careful records of emails with research participants. If there are short phone calls before and/or after the formal interviews, notes should be taken immediately as part of field notes. Such communiqué may prove useful as data (e.g., Kee, 2010).

Post-Interview Correspondence as Data. After a formal interview, a researcher often sends a thank-you email to the participant to show appreciation for his/her time and contribution to the study. Such an email may prompt the participant to provide additional information and/or engage in further conversation about the study. When a thank you email or follow-up email generates replies, we recommend the researcher seek consent from the participant to include the email as a part of research data for the study. For example, Kee and Browning’s (2010) study of virtual scientific work incorporated follow-up emails as a part of their data. When a participant used the numbers “4, 8, 12” during an interview, she did not explain the numbers. A follow-up email clarified that she was referencing “4, 8, 12 processors.” The word “processor” was then added in brackets to the transcript and ultimately to the data presentation in the published article.

Listserv Posts as Data. Some organizations and professional communities maintain a completely or semi-public listserv. To further sensitize the researcher to a particular virtual worker’s situation and to further contextualize the study, a researcher may consider joining such a listserv (if permission is granted by gatekeepers). Information gathered

from observing the listserv could be documented in the researcher's field notes. If a researcher gains access to internal listservs and intranets, the observational data of internal communication could shed light on the phenomenon under study. For example, in her study of a global software team, Gibbs (2009) joined the company as an intern and thus gained access to internal intranet, including listserv messages.

Data Analysis

Given the rich and multi-dimensional data available from a range of public websites, private emails, formal interviews, follow-up conversations, internal organizational information, and field notes, we now explain two approaches to data analysis: thematic analysis and grounded theory analysis.

Thematic Analysis. The first approach discussed is thematic analysis, and it can follow a series of sorting steps discussed by McCracken (1988) and a set of qualitative criteria articulated by Owen (1994). To begin sorting, McCracken's (1988) procedure has the researcher follow these steps: (a) sort out important data from unimportant data; (b) examine the slices of data for logical relationships and contradictions; (c) re-read the transcripts to confirm or disconfirm emerging relationships and to scan for the general properties of the data; (d) identify the general themes and sort the themes in a hierarchical fashion, while discarding those that prove useless in the organization; and (e) review the emergent themes for each of the transcripts and determines how they can be synthesized into a still wider set of overarching themes.

During the sorting process, researchers can apply Owen's (1984) criteria. According to Owen, themes are "a limited range of interpretations used to conceive of and constitute relationships" (p. 274), which means that the data are reduced by looking for outstanding properties. He presents

three criteria of thematic analysis: recurrence, repetition, and forcefulness.

First, *recurrence* refers to the resurfacing of "salient meanings" (p. 275); this search for recurrence accepts that (a) the actual wordings that reflect the meanings may vary and that (b) the same theme can be stated in different ways by communicators and that they (c) move in and out of each other's foreground and background in any given instance. In fact, it is in the various wordings that a salient theme or meaning is discovered and established. Owen explains, "This criterion allowed salient meanings to be discovered in the foreground of a report—a theme, while other meanings remained in the background" (p. 275). Second, *repetition* simply refers to the frequency at which key words, phrases, or sentences are being repeated in a report. The criterion of repetition is an extension of recurrence. However, repetition points to the repeated usage of the exact wordings used to communicate a theme.

Third, *forcefulness* refers to the vocal or visual accents placed on certain utterances offered in verbal or written forms. Vocal accents could be "vocal inflection, volume, or dramatic pauses" (p. 275) and visual accents could be "underlying of words and phrases, the increased size of print or use of colored marks circling or otherwise focusing on passages in the written reports" (pp. 275-276). In other words, forcefulness calls attention to the "the *form* of ... discourse" (p. 276). Van Manen (1990) describes the thematization process as an attempt to give "shape to the shapeless" (p. 88). Forcefulness refers to the style of the communication (Brummett, 2008).

Grounded Theory (GT) Analysis. The second approach of data analysis is guided by Grounded Theory. Although there is a separate chapter on grounded theory by Gibson and Webb in this book, we simply provide a brief discussion on five coding strategies researchers can use to study virtual work: open coding, axial coding, process coding, selective coding, and cluster coding (also called "clustering").

Open Coding. Open coding is the analytic fracturing and systematic interpretation of raw data (Corbin & Strauss, 1990). Thoughts, actions, events, and incidents in raw data are compared to identify similarities and differences. Similar concepts collapse to form meta-categories, categories, and subcategories. In GT analyses, preliminary open coding begins with the first interview as it is conducted and/or transcribed. Because a researcher is informed and guided by preliminary concepts and categories, he or she is able to ask generative and comparative questions with the next interview or during the next observation. Asking generative questions enables the researcher to recognize the implications/theoretical possibilities and to gather data to provide specificity to each category. Then, the properties and dimensions of each derived concept can be analyzed. Additional fieldwork can add specification to the concepts obtained.

Axial Coding. Axial coding is a process in which “categories are related to their subcategories, and the relationships [are] tested against data” (Corbin & Strauss, 1990, p. 13). This process is similar to the pattern coding and constant comparison process mentioned earlier in this chapter. Axial coding and its related strategies are an ongoing process, in which the researcher continues to develop and revise identified categories by paying close attention to how conditions, contexts, strategies (action/interaction), and consequences influence the relationships between subcategories and their meta-category. The researcher’s goal is to identify relationships tying concepts with conditions, contexts, strategies, and consequences. A researcher also can search for variations in the patterns and exceptions to the rules, using a constant comparison process. Once identified, categories can be revised with greater specificity until no variations and exceptions can be found in the data. Using this form of analysis, outliers lead to new, provisional, conditional categories. In this way, the researcher develops a theory conceptually denser, and identifies the linkages among concepts that

are increasingly more specific. A researcher may conclude, “Under these conditions, action takes this form, whereas under these other conditions, it takes another” (Corbin & Strauss, 1990, p. 14).

Process Coding. Because it is often overlooked by researchers, Baxter and Babbie (2003) separate and emphasize process coding in GT data analysis. They explain that process coding is the linking of sequences or flow of events, actions, interactions, and reactions *over time* to explain a social phenomenon. The temporal sequence and flow of concepts/categories derived from axial coding are important in GT because they can focus the researcher’s attention on the evolution of a social phenomenon.

We believe process coding can be especially important to the study of virtual work because such a work arrangement is rapidly emerging. When close attention is paid to how events, actions, interactions, and reactions are connected across time, such attention can provide a clearer understanding of the phenomenon of virtual work and enable more accurate descriptions. For example, a worker new to virtual work may struggle with managing multiple technologies in collaboration with multiple remote colleagues. However, over time, this worker may gain confidence and competence with the technologies and excel at virtual work. Without paying attention to the across-time learning process, the researcher’s explanation of the virtual work experience is incomplete.

Selective Coding. Selective coding often occurs during later stages of an investigation, when categories converge to reveal a core (or root) category. The core category is often the focal phenomenon of interest in a GT study. One way to integrate categories is diagramming (Corbin & Strauss, 1990). In a diagram, multiple categories can appear in relation to the core category, as conditions, contexts, strategies, and consequences change. A strong theory with explanatory power usually has categories and subcategories with high conceptual density. Poorly developed categories will be identified during selective coding, and

subsequently divided or merged. Thus, a weak theory can be strengthened by revisions of initial concepts, categories, and relationships. The newly revised theory can be verified by collection and analysis of additional data.

Cluster Coding or Clustering. In his work on grounded organizational communication theory, Browning (1978) takes GT techniques and selective coding to the next level by proposing that core categories can form “postulates” (p. 102) or general statements about the data and the phenomenon of interest. He calls this approach “generating theoretical clusters” (p. 93). Given clusters of core categories and postulates about a social phenomenon in virtual world, a researcher can propose hypothetical statements about the relationships between core categories emerging from selective coding about virtual work. In that case, the final GT of a social phenomenon concerning virtual work becomes a complex collection of hypothetical statements linking the core categories, evolving processes, conceptual variations, and theoretical concepts for a more robust explanation. We encourage interested readers to consult the chapter by Gibson and Webb on grounded theory for a detailed discussion.

Data Interpretation

Because qualitative interviewing is a rich and evolving approach to research and theory building, it is appropriate for studying the emerging phenomenon of virtual work. To explicate the connection between qualitative interviewing and virtual work research, we make two observations about data interpretation specific to research about virtual work.

Multiple Modes of Interviewing. While consistency of interviewing modes and data formats has been a methodological concern in traditional qualitative research (Kramer & Xie, 2008; Wiesenfeld, et al., 2001), we argue the new social phenomenon of virtual work could benefit

from exploration via a variety of interviewing modes and data formats. Because virtual work is a complex phenomenon that involves formal and informal communication (Long, 2010) and a mix of mediated and FtF communication (Kee & Browning, 2010), a grounded theorist of virtual work should not ignore a piece of data simply because it is not in the same format as the remaining data. Conversely, limiting research data to a single format may limit the richness of a robust GT. To avoid such an outcome, data interpretation can involve triangulation of data sets gathered via multiple modes of interviewing (e.g., Gibbs, 2009; Kee & Browning, 2010); online interview data be treated as equally valid or as supplement to traditional FtF interview data.

Online Interviewing. Because virtual workers may be more comfortable with online interviewing techniques (Kazmer & Xie, 2008), a researcher can rely on participants’ technical competence and allow their voices to emerge via online data collection. Shuy (2002) calls this allowing for “contextual naturalness” (p. 538). For example, Kazmer and Xie argue that textual data, such as comments in a participant’s email allow the researchers to bear witness to participants’ voices in their preferred venue, thus giving a participant power in their representation in the study. They cited the example of “MAC,” “mac,” or “Mac” for Macintosh, and argue that the variations can impact readers’ perceptions of the participant in a study. Such variations and choices of representation would not be possible in an audio or video interview transcript because the researcher determines the written form of the message during transcription. Therefore, we argue that researchers of virtual work could and should take advantage of the opportunity to allow participants to perform their identities in studies of virtual work via online data collection. As discussed earlier in the section on virtual interviewing, such an approach could allow participants to become research partners rather than mere informants or objects of study.

CONCLUSION: RECOMMENDATIONS FOR NOVICE RESEARCHERS

This chapter reviewed qualitative interviewing along with three modes of qualitative interviewing, explained interviewing techniques, formats, and rigor, introduced illustrative case studies, and provided suggestions for researchers collecting interview data to study virtual work. We end with “bullet point” suggestions for researcher using interviewing to study virtual work. The bullet points represent a brief summary of the key points for the effective use of interviewing generally, as well as the specific stages of data collection, data analysis, and data interpretation in research on virtual work.

- Be curious, be open-minded, and pursue the social phenomenon of interest and participants through multiple online and offline channels (i.e., triangulation).
- Keep a careful record of all information, communication, and observation about a social phenomenon of interest and participants involved in the study.
- Begin making sense of information about the social phenomenon (i.e., open coding) with the first interview and/or observation. Constantly compare and contrast initial/tentative codes with every new piece of data (i.e., axial coding).
- As you draw tentative conclusions, pay attention to how the contexts (i.e., conditional matrix) and timing (i.e., process coding) influence participants’ behaviors and explanations.
- Allow conceptual categories to converge (i.e., selective coding) and connect (i.e., cluster coding or clustering) to generate a robust framework to explain the phenomenon of interest.
- Whenever possible, allow participants to self-represent in the data. Invite will-

ing participants to co-construct data into meaning (Berger & Luckman, 1967).

- Avoid immediately disregarding voices that differ from the majority of the participants. Allow “forcefulness” to alert you to minority and/or outliers’ insights. GT is ongoing. Follow the participants’ lead by including forceful minority/outliers’ voices.
- Observe how the social phenomenon under study evolves over time under changing conditions.
- Allow clustered postulates to guide any quantitative extension of the study.

In conclusion, qualitative interviewing offers many advantages for studying virtual work. Interviewing offers a rich way to collect and organize data, by following the techniques and procedures discussed in this chapter, researchers can interpret data in ways that build theory, identify themes, reveal patterns, and/or serve as a first step in building quantitative survey instruments. Although interviewing can produce massive amounts of data and thus can seem overwhelming, the practical tips provided in this chapter will assist both the novice and experienced researcher in making sense of resultant data sets. Given the complexity of virtual work, qualitative interviewing, including online interviewing, provides a viable methodological option for research on virtual work.

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KEY TERMS AND DEFINITIONS

Coding: To develop categories for ideas that emerge from a data set.

Forcefulness: The strength of an informant's statement; the extent to which he/she indicates that an idea is important.

Grounded Theory: Allowing the central ideas within a text to emerge through the reading, rereading, and repetitive mention of those ideas within the text; then explaining the object of study via the central, emergent ideas.

Interviewing: A focused conversation between a researcher and participant in which the researcher posed queries about a specific subject matter and listens as the informant provides an explanation of his/her understanding of that subject matter.

Qualitative Research: Assessing ideas and understandings rather than quantitative measures.

Theme: A central idea that emerges from a text-based data set.

Virtual Interview: An interview conducted, not in a face-to-face format, but rather via a medium such as telephone, Skype, IM, and email.