

Only Time Will Tell: Conducting Longitudinal Research on Careers

Shoshana R. Dobrow and Hannah Weisman

Accepted for publication in *Handbook for Research Methods in Careers*, Jennifer Tosti-Kharas and Wendy Murphy (Eds.), 2021

Careers—defined as the individually perceived sequence of attitudes and behaviors associated with work-related experiences and activities over the span of a person’s life (Hall, 2002)—inherently and inextricably involve the role of *time*. At the individual level, time—and particularly change over time—is essential for understanding adults’ lives and careers, as noted by both traditional adult development theories (e.g., Erikson, 1963; Ginzberg, 1951; Levinson, Darrow, Klein, Levinson, & McKee, 1978; Super, 1992) and more recent career and identity development theories (e.g., Hall, 2002; Ibarra, 1999; Kroger, 2007; Pratt, 2000; Taylor, Marienau, & Fiddler, 2000). Indeed, research has consistently shown that time can shape work attitudes and experiences ranging from job satisfaction (Ng & Feldman, 2010; Rhodes, 1983) to callings (Dobrow, 2013) to professional identity (Pratt, Rockmann, & Kaufmann, 2006). Nonetheless, the nature of the relationships between important career constructs and time has often been understudied or, when studied, yielded inconsistent patterns of results across different timeframes or across studies. As a result, careers scholars regularly conclude their papers—almost to the point of cliché—by noting the lack of longitudinal research, either as a limitation of their own work or the research area in general, and then by calling for more longitudinal research in the future.

The bottom line here: Time is profoundly important for understanding careers. And yet, even though “everyone” says to do longitudinal research, scholars rarely do it—not only in careers research, but in organizational behavior research more broadly (e.g., George & Jones, 2000; Mitchell & James, 2001; Sonnentag, 2012; Wright, 1997; Zaheer, Albert, & Zaheer, 1999). Why? Put simply, conducting longitudinal research is really hard and takes a

long time. It is also amazingly worthwhile.

In this chapter, we draw on our experiences as longitudinal researchers to discuss the realities and challenges of conducting and publishing rigorous longitudinal research. We begin by defining what longitudinal research is, and is not. We then describe five key contributions that longitudinal research can make, above and beyond other research designs like cross-sectional studies. We conclude by offering a “Top 10” list of specific practical tips for conducting and publishing longitudinal research on careers. Throughout this chapter, we are mindful of noting many of the legitimate challenges in conducting and publishing longitudinal research—often drawing on “favorite” comments that we have received from journal reviewers—along with some suggestions for how to deal with them. We have learned a lot about how to do both quantitative and qualitative longitudinal research from actually doing it (as suggested in Pettigrew, 1990), and our hope is to share some of this acquired knowledge with other scholars who may be considering embarking on this type of ambitious data collection or who are already doing so. As an end goal, we hope this chapter will inspire you to conduct longitudinal research—with the benefit of having a realistic “research” preview (cf. Wanous, 1992) to help you weather its challenges and truly enjoy the upsides.

What Longitudinal Research Is—and Is *Not*

A longitudinal study is a type of research design involving repeated observations over time. When conducted on individuals, as would be the case for most careers research, this means repeated observations of individual people. However, longitudinal research can also focus on repeated observations at other levels of analysis, such as groups and organizations. There is considerable variety within this methodology: these observations can be quantitative, such as via surveys, or qualitative, such as via interviews. Sample sizes can be small or large or anywhere in between, while the timespan of data collection can range from short to long. What all longitudinal studies have in common is a quest to understand phenomena over

time—often to understand change over time (e.g., Singer & Willett, 2003).

Longitudinal studies fit careers research particularly well, because, by definition, careers and career development occur over time (Hall, 2002). Yet, in spite of this obvious fit between careers research and longitudinal methods, careers scholars have long bemoaned the predominance of cross-sectional (i.e., one wave) studies and have advocated for researchers to instead undertake longitudinal studies (e.g., Barley, 1989; Hall, 2002; Ployhart & Vandenberg, 2010). In recent years, journals have joined this effort by increasingly requesting or even requiring data that go beyond being “merely” cross-sectional. Nevertheless, longitudinal careers research is still all too rare.

Some scholars have responded to the growing requirement for non-cross-sectional research by conducting two-wave studies, often with a very short time lag between waves (e.g., a few weeks)—which they then label as “longitudinal.” However, longitudinal research, which by definition allows for examining change over time, requires three or more waves of data (Singer & Willett, 2003; Willett, 1989). So, if cross-sectional studies have one wave of data collection and longitudinal studies require three, what does this mean for *two*-wave studies? In some ways, two-wave studies are in a sort of methodological purgatory. Although using a two-wave design has some advantages over a cross-sectional design—namely, it can begin to mitigate journal and reviewer concerns over common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003)—we note that these studies are not, in fact, longitudinal. They can only examine change from Time 1 to Time 2 as “merely an increment of difference between two times” (Ployhart & Vandenberg, 2010, p. 97). They cannot shed light on the nature of this change, as longitudinal research can. Further, two-wave studies confound true change and measurement error, such that it is impossible to discern whether a measured difference between timepoints represents true change over time or instead measurement error that makes it look like there is a difference when there is not (Singer &

Willett, 2003). Thus, although there are appropriate occasions for using two-wave data collections, such as in quasi-experimental studies with before (Time 1) and after (Time 2) designs (for a review, see Grant & Wall, 2009), we caution against using two-wave designs to investigate most careers research questions, which often involve matters of causality or change. It is worth noting that in our own experience reviewing, two-wave studies are increasingly being rejected from journals, particularly when explicitly labeled as “longitudinal,” both because of the methodological shortcomings discussed above, as well as the problematic signalling issue that arises from the inaccurate assertion that a two-wave design is “longitudinal.” We hope that by calling attention to these issues with two-wave designs, scholars can avoid falling prey to the false assumption that these types of studies are true longitudinal studies and instead prioritize the careful match of research design to research question, whether longitudinal or not (Bono & McNamara, 2011).

The key value of longitudinal research is that it allows for the examination of many types of research questions that could not otherwise be studied—or at least could not be studied rigorously—by alternative research designs. In the next section, we outline key contributions that longitudinal research can make, above and beyond other research methodologies. To illustrate these contributions richly, and so provide a “behind-the-scenes” view of longitudinal research, we discuss some of the questions that we have examined in our own longitudinal research on topics such as calling, job satisfaction, and developmental mentoring networks. We also make suggestions for future longitudinal research. To aid you in developing your own longitudinal research questions, we organize all research questions mentioned in this chapter in Table 8.1.

Table 8.1 Sample Research Questions for Longitudinal Research on Careers

Research Aim	Sample Research Questions
--------------	---------------------------

Understanding the nature of change itself	<ul style="list-style-type: none"> • “How do developmental network characteristics change over a substantial period of time?” (Dobrow & Higgins, 2019) • “Does calling change?” (Dobrow, 2013) • “How do two time metrics, age and tenure, relate to job satisfaction above and beyond the other metric? That is, what is the fundamental picture of how job satisfaction changes over time?” (Dobrow, et al., 2018) • “How do the change trends of developmental network characteristics covary with one another?” (Dobrow & Higgins, 2019)
Understanding antecedents	<ul style="list-style-type: none"> • “What factors predict the change trends of developmental network characteristics over time?” (Dobrow & Higgins, 2019) • “Are higher ability, behavioral involvement, and social comfort in the calling domain related to a subsequent increase or decrease in calling over time?” (Dobrow, 2013)
Understanding consequences	<ul style="list-style-type: none"> • “To what extent does the degree of calling toward a domain experienced early in life positively predict career pursuit in this domain many years later—above and beyond the effects of other early predictors?” (Dobrow & Heller, 2015) • “How are developmental network characteristics related to professional identity over time?” (Dobrow & Higgins, 2005) • “How does support received from one’s developmental network during early career relate to career outcomes?” (Higgins et al., 2008) • “Do people make early career choices based on passions and interests (i.e., their early callings) versus talent (i.e., their early perceived or actual abilities)?” (Dobrow & Heller, 2015) • “To what extent is calling related to ignoring negative career advice in the (a) short term, (b) medium term, and (c) long term?” (Dobrow & Tosti-Kharas, 2012) • Relationship between developmental network characteristics and optimism from different time perspectives (Higgins et al., 2010): <ul style="list-style-type: none"> • Cross-sectional perspective: “To what extent is the amount of support provided by one’s developmental network (career or psychosocial) related to one’s optimism?” • Intercept perspective: “To what extent is the amount of support provided early on in one’s career by one’s developmental network (career or psychosocial) related to one’s current optimism?” • Rate of change perspective: “To what extent is the rate of change of amount of support provided by one’s developmental network (career or psychosocial) related to one’s current optimism?”
Understanding temporal sequences	<ul style="list-style-type: none"> • “To what extent is job rewards, as exemplified by pay, a mediator in the relationship between time, both age and tenure, and job satisfaction?” (Dobrow et al., 2018) • “To what extent is the relationship between degree of calling toward a domain experienced early in life and

	<p>career pursuit in this domain many years later mediated by perceived (or actual) ability—<i>above and beyond</i> the effects of other early (perceived ability, actual ability, and external pressure to pursue this career) and contemporaneous actual (or perceived) predictors?” (Dobrow & Heller, 2015)?</p> <ul style="list-style-type: none"> • “What is the relationship between early callings (in adolescence) and later career pursuit (in adulthood)?” (Dobrow & Heller, 2015) • “Does calling lead to perceived ability or, alternatively, does perceived ability lead to calling?” (Dobrow & Heller, 2015)
Understanding career processes	<ul style="list-style-type: none"> • “How do people make career transitions to pursue their callings?” (Weisman, 2019) • “How do people craft the self-narrative of a career transition to pursue a calling?” (Weisman, 2019)

Contributions of Longitudinal Research

Contribution #1: Understanding the nature of change itself

Research that primarily considers a construct from a cross-sectional perspective is, by definition, unable to examine the dynamics of this construct. Even though adult and career development theorists have long suggested that careers are dynamic (e.g., Hall, 2002; Ibarra, 1999; Levinson et al., 1978; Schein, 1978; Super, 1992), the predominant use of cross-sectional study designs means that, at a fundamental level, scholars may simply not have empirical evidence about whether constructs change or are stable over time. Understanding these dynamics of career constructs is critical for helping researchers gain greater insight into how career trajectories unfold. To address this gap in knowledge, we, along with our collaborators, have asked longitudinal research questions specifically aimed at understanding the nature of change itself, such as:

- “How do developmental network characteristics change over a substantial period of time?” (Dobrow & Higgins, 2019)
- “Does calling change?” (Dobrow, 2013)

The above types of questions may become more elaborate, or nuanced, by aiming to understand how multiple characteristics—of time or of the construct itself—may change over

time, for example:

- “How do two time metrics, age and tenure, relate to job satisfaction above and beyond the other metric? That is, what is the fundamental picture of how job satisfaction changes over time?” (Dobrow, Ganzach, & Liu, 2018)
- “How do the change trends of developmental network characteristics covary with one another?” (Dobrow & Higgins, 2019)

We note that, in spite of the important descriptive information provided by addressing research questions such as these, they are generally not “enough” to be standalone papers.

Typically, this type of research question may be the first of several in a given paper, followed by some of the types of research questions described below.

Contribution #2: Understanding antecedents

After establishing a basic understanding of a construct’s dynamics, as above, a next logical step is often to explore whether and which antecedent factors—that is, precursors of the construct—may shape its initial development and subsequent evolution. Given that careers unfold over time, often across multiple organizations in an increasingly “boundaryless” environment (Arthur & Rousseau, 1996), there should be tremendous utility in examining career-related constructs over time to understand what factors predict their development, sustainment, or even loss (e.g., in the area of calling research, see the following examples: Creed, Kjoelaas, & Hood, 2016; Dobrow, 2013; Dobrow & Tosti-Kharas, 2011; O’Keefe, Dweck, & Walton, 2018). However, this type of research has been highly lacking in careers research to date, perhaps because it requires a longitudinal approach, and cannot be adequately addressed using cross-sectional designs. This methodological concern also creates conceptual concerns: antecedents are conceptually distinct from correlates or control variables, yet when studied in cross-sectional designs, antecedents and correlates cannot be distinguished from one another (see Dobrow, Weisman, Heller, & Tosti-Kharas, 2019).

Additionally, over the course of time, scholars may come to view, or at least assume, that certain constructs are stable and unchanging, due in part to an over-reliance on cross-sectional research that can only provide a snapshot view of a construct. Indeed, scholars may end up not examining antecedents of a construct at all, instead focusing solely on the outcomes of that construct. As a result, scholars have noted the need for longitudinal research to disentangle questions along these lines, such as Bunderson and Thompson's (2009) exhortation to look at the calling construct as both a cause and as a consequence of various career and life outcomes (p. 53).

In sum, longitudinal research is able to address questions about antecedent factors and their role in shaping career constructs over time, as shown in the following examples. Note that when the focus is on antecedents of a focal construct, in statistical terms the antecedents are the independent variables and the focal construct is the dependent variable:

- “What factors predict the change trends of developmental network characteristics over time?” (Dobrow & Higgins, 2019)
- “Are higher ability, behavioral involvement, and social comfort in the calling domain related to a subsequent increase or decrease in calling over time?” (Dobrow, 2013)

Contribution #3: Understanding consequences

While careers research often aims to understand the consequences of particular career-related phenomena, such as linking attitudes or intentions to career behaviors, cross-sectional research simply cannot discern whether the career construct actually leads to the outcome or not. Instead, we encourage researchers to shift away from cross-sectionally worded research questions—“What is the relationship between people's satisfaction and performance in their jobs?”—to specify the role of time more precisely. For example, this question could evolve to include time even in a relatively generic way, “What is the relationship between people's satisfaction and *subsequent* performance in their jobs?,” or could include time in a more

specific way, depending on the research focus, “What is the relationship between newcomers’ satisfaction and subsequent performance in their jobs two years later?” Here are some sample research questions from our work that examine consequences of the focal construct:

- “To what extent does the degree of calling toward a domain experienced early in life positively predict career pursuit in this domain many years later—above and beyond the effects of other early predictors?” (Dobrow & Heller, 2015)
- “How are developmental network characteristics related to professional identity over time?” (Dobrow & Higgins, 2005)
- “How does support received from one’s developmental network during early career relate to career outcomes?” (Higgins, Dobrow, & Chandler, 2008)

A twist on the above research questions is to examine a focal construct in conjunction with another construct as predictors of consequences over time. This type of research question often positions the two predictors as rivals, and, so, if done well, can lead to significant theoretical contribution. An example of this type of question, which sets up calling and two types of ability, perceived and actual, as rivals, is:

- “Do people make early career choices based on passions and interests (i.e., their early callings) versus talent (i.e., their early perceived or actual abilities)?” (Dobrow & Heller, 2015)

Understanding the consequences of constructs from a longitudinal perspective often involves specifying or even parsing the time period of the construct, in a way that is not relevant for cross-sectional research. This leads to research questions that specifically aim to examine relationships over different amounts of time, such as:

- “To what extent is calling related to ignoring negative career advice in the (a) short term, (b) medium term, and (c) long term?” (Dobrow & Tosti-Kharas,

2012)

Another approach to understanding consequences is to flexibly apply time, such as examining levels of a construct at a specific point in time (e.g., the initial level, or intercept, of a construct earlier in people's careers), how this construct changes over time (e.g., a rate of change, or slope, of this construct over time)—and, somewhat ironically, sometimes even including cross-sectional analyses for comparison—researchers can gain considerable insight into when and how constructs relate to consequences. For instance, the following set of research questions first examines the cross-sectional relationship between two constructs, developmental network characteristics and optimism; then how the intercept of developmental network characteristics relates to optimism at a later point in time; and, then, finally, how the rate of change in developmental network characteristics relates to optimism at a later point in time (Higgins, Dobrow, & Roloff, 2010):

- Cross-sectional perspective: “To what extent is the amount of support provided by one’s developmental network (career or psychosocial) related to one’s optimism?”
- Intercept perspective: “To what extent is the amount of support provided early on in one’s career by one’s developmental network (career or psychosocial) related to one’s current optimism?”
- Rate of change perspective: “To what extent is the rate of change of amount of support provided by one’s developmental network (career or psychosocial) related to one’s current optimism?”

Contribution #4: Understanding temporal sequences

As careers unfold over time by definition (Hall, 2002), it is almost a truism that understanding how careers unfold over time is important. Put differently, if our goal as careers researchers is to truly understand careers, then we must consider the role of time. This may often mean identifying, explaining, and understanding the sequences, or order, in which

things occur over the span of our careers. For instance, considerable careers research has examined how people rebound from career setbacks, make career transitions, and choose their careers (e.g., Haynie & Shepherd, 2011; Holland, 1997; Ibarra & Barbulescu, 2010; Vough & Caza, 2017). Yet, if people are studied cross-sectionally (e.g., asked to report their attitudes and career circumstances simultaneously) or retrospectively (e.g., asked to reflect back on their reactions, transitions, or choices), the study cannot conclude that the reported attitudes or intentions led to the current circumstances—or whether the reverse is the case, namely that the current circumstances may actually lead to the attitude or intention via such mechanisms as reducing cognitive dissonance (Vroom, 1966), fostering retrospective rationalization (London, 1983), or rewriting one's career self-narratives over time (Ibarra & Barbulescu, 2010).

Thus, cross-sectional research can, at best, be agnostic about explaining questions fundamental to careers research, like why people choose their line of work, or, at worst, may erroneously draw causal inferences based on data that simply cannot shed light on causality. The challenge with cross-sectional research in this regard, and even some two-wave or short-term longitudinal designs (i.e., a few days, weeks, or months, depending on the research question; for exceptions see diary studies that can rigorously address research questions over many days, e.g., Yang & Diefendorff, 2009), is that it can yield confusing results, in terms of unknown or even jumbled sequences of how careers actually play out. Moreover, by not temporally separating the measurement of constructs, cross-sectional research may be subject to common method bias—systematic measurement error that can inflate, or deflate, the relationship between constructs due to their being measured via the same method or source (Podsakoff et al., 2003).

One key approach to understanding temporal sequences is to begin investigating mediators, or mechanisms, linking a career construct to its outcomes. It is important to note

that for these types of research questions to be addressed rigorously, they need to draw on longitudinal data that allow for the measurement of the independent variable, mediator, and dependent variable on temporally separate occasions (i.e., measured at different times than one another) and ideally measured in order (i.e., independent variable first, mediator second, and dependent variable third), as in the following examples:

- “To what extent is job rewards, as exemplified by pay, a mediator in the relationship between time, both age and tenure, and job satisfaction?” (Dobrow et al., 2018)

If possible, longitudinal studies that include repeated measures of the mediator allow for controlling for this variable as measured during an earlier time period, as follows:

- “To what extent is the relationship between degree of calling toward a domain experienced early in life and career pursuit in this domain many years later mediated by perceived (or actual) ability—*above and beyond* the effects of other early (perceived ability, actual ability, and external pressure to pursue this career) and contemporaneous actual (or perceived) predictors?” (Dobrow & Heller, 2015)?

Longitudinal research can also enable a second approach to understanding temporal sequences: exploring causality. Although most longitudinal studies, such as multi-wave survey studies, cannot definitively address causality—which can only be accomplished by experimental methods—they can speak to causality. As a start, they can temporally separate constructs, as in the examples of mediators above. More directly, they can use cross-lagged panel analyses to untangle the direction of causality (see methods described in Salamon & Robinson, 2008; Shingles, 1985). Questions involving the direction of causality can be substantive enough to be a paper’s primary focus:

- “What is the relationship between early callings (in adolescence) and later career pursuit (in adulthood)?” (Dobrow & Heller, 2015)

Or, these types of questions can be used in support of a newly proposed theoretical model, where it can be helpful to empirically demonstrate that the causal sequence goes in the direction from independent variable to mediator, for example, and not from mediator to independent variable:

- “Does calling lead to perceived ability or, alternatively, does perceived ability lead to calling?” (Dobrow & Heller, 2015)

Contribution #5: Understanding phenomena over the long term

Another contribution of longitudinal research is that it can speak to the long-term nature of careers in ways that other research designs are unable to do. Most importantly, longitudinal research needs to cover an appropriately long research timeframe to capture meaningful change. Indeed, a key limitation of cross-sectional research versus longitudinal research is that cross-sectional research captures only a snapshot in time whereas longitudinal research can capture phenomena over time, to the extent that the two types of study designs can sometimes yield opposite results (Ployhart & Vandenberg, 2010). Even across longitudinal studies, *longer-term* longitudinal research can yield substantively different results than shorter-term longitudinal study designs. For instance, in our own work we found:

- Over the span of two years, on average, developmental network density *increased* (Dobrow & Higgins, 2005).
- Over the span of ten years, developmental network density initially increased for a few years, but then *declined* in a curvilinear fashion in subsequent years (Dobrow & Higgins, 2019).

It is important to note that the above two papers came from the same longitudinal study. The first paper was published when the study included three waves of data spanning five years (1996–2001), whereas the second was published after another wave of data collection had occurred, such that there were four waves of data spanning 10 years (1996–2006). These

results highlight the different types of conclusions that might be drawn about the nature of change, in this case of developmental network density, depending on the timeframe used for data collection as well as the analytical approach used. The two years included in the first study represent a legitimately long amount of time by the standards of most careers research. We modeled change in density as the difference between Time 1 and Time 2, which led us to conclude that developmental network density increased over a two-year timeframe and predicted certain Time 3 outcomes.¹ Yet, when we examined developmental network density over a much longer amount of time, where the four waves of data spanning 10 years allowed for a more sophisticated analytical approach, multilevel modeling, we found that a very different picture emerged after the first two years.

In separate research on job satisfaction (Dobrow et al., 2018), we explored whether the job satisfaction “hangover” effect documented in the literature—reflecting that job satisfaction is typically higher at the start of a new job compared to the previous job (“honeymoon”) but subsequently tapers off (“hangover”) as novelty wears off and normalization sets in (Boswell, Boudreau, & Tichy, 2005; Boswell, Shipp, Payne, & Culbertson, 2009)—continued beyond the one-year timeframe documented in the literature. Drawing on two long-term nationally representative datasets spanning 29 and 11 years, we found that job satisfaction continued to decrease beyond the first year of employment. In fact, we discovered that job satisfaction displayed a cyclical effect, such that it continued to decrease throughout people’s tenure in a given organization until they changed organizations, at which point their job satisfaction experienced a boost (i.e., the “honeymoon”)—and then started to decline again (i.e., the “hangover”). Thus, a key benefit of longer-term longitudinal studies like this was our ability to extend intriguing results about the honeymoon-hangover effect (Boswell et al., 2005; Boswell et al., 2009). We were able to demonstrate the long-term

nature of the relationship between time and job satisfaction, which could not be explored with cross-sectional or shorter-term longitudinal designs.

We suggest that the contrasting findings above do not reflect methodological weaknesses in the shorter-term studies; rather, they reflect that the time perspective researchers select, as well as the selection of statistical techniques, can significantly impact the nature of the findings. Given this, we suggest that for most careers research, the longer the timeframe of data included, the better. That said, as much as we would like our research to be guided by purely conceptual goals, the pragmatic reality in longitudinal research—especially in labor-intensive, long-term research that spans many years—is that scholars need to draw the line somewhere to publish from their longitudinal datasets at different points along the way of data collection, as exemplified by the two different studies of developmental network density mentioned above.

The choice about how many waves of data to include in a given manuscript can even evolve during the review process. In our experience, we once submitted a manuscript with three waves of longitudinal data, with a fourth wave of data collection occurring separately and in parallel to the review process. By the time we received the invitation to revise and resubmit, this fourth wave of data was available for inclusion in the manuscript—and it ultimately contributed to our manuscript's acceptance by allowing us to address specific reviewer concerns (Dobrow & Heller, 2015). Thus, the passage of time, even when it comes to waiting for reviews to come back from journals, can actually be beneficial to longitudinal research. These examples also highlight that often in longitudinal research there is simply no right answer about how many waves of data are “best” or how many waves “should” be included in any given manuscript. Rather, this is a judgment call on the part of researchers, ideally guided by the research question, as well as other theoretical and practical considerations. Longitudinal researchers therefore need to become comfortable with thinking

flexibly about their own data collection strategies as well as their choices about how much of their data belong in any given paper.

Contribution #6: Understanding career processes

Another major advantage of longitudinal research, particularly longitudinal *qualitative* research, concerns its ability to shed light on career processes (Langley, 1999). While research into processes remains relatively limited in the careers literature, existing research indicates that longitudinal, qualitative methods provide researchers with unique opportunities to build and elaborate theory in this area (Lee, Mitchell, & Sablynski, 1999). For instance, Pratt, Rockmann, and Kaufmann's (2006) qualitative study employed a six-year longitudinal design to develop new theory on the process by which medical residents, and professionals more broadly, constructed their professional identities as they transitioned from medical school graduates to independent medical practitioners. Drawing on multiple sources of qualitative data (e.g., archival documents, observation, short surveys, and four rounds of interviews spanning the duration of the residency program), the researchers elucidated an important, but undertheorized, career and role transition process whose discovery was only possible through the use of longitudinal data (Pratt et al., 2006).

Longitudinal qualitative data can also be useful for delineating processes that connect the dots, so to speak, between career constructs whose relationships have been demonstrated quantitatively. For instance, the benefits of callings have been well-documented in the literature (see Dobrow et al., 2019 for a meta-analytic review), but this research cannot explain the *process* by which people transition from unfulfilling lines of work to pursue their callings, as in the following research questions (Weisman, 2019):

- “How do people make career transitions to pursue their callings?”
- “How do people craft the self-narrative of a career transition to pursue a calling?”

Thus, a qualitative longitudinal design—here, three rounds of semi-structured interviews with participants, spaced roughly evenly over the course of 18 months—is well-suited for investigating these questions because occupational transitions are dynamic phenomena that unfold over time. Examining these same research questions cross-sectionally (i.e., with one round of interviews) would simply not allow for an understanding of the focal process of interest, nor would it allow for insight into the implications of this process. Indeed, as Langley (2013) noted, “Longitudinal data (whether obtained with archival, historical, or real-time field observations) are necessary to observe how processes unfold over time” (p. 6).

Top 10 Practical Tips for Conducting and Publishing Longitudinal Research on Careers

In the previous section, we discussed the key contributions—as well as many of the very real challenges—of conducting longitudinal research. Here, we want to build on these points to offer a “Top 10” list of practical suggestions about conducting and publishing longitudinal research on careers. To the extent possible, we draw on specific comments we have received from reviewers as well as our own anecdotal experiences doing longitudinal research to highlight that these issues do come up in the review process and in our research activities—and offer advice on how to handle them. We include a tip specifically oriented toward qualitative longitudinal research to complement the other more quantitatively-oriented tips. We summarize these “Top 10” tips in Table 8.2.

Table 8.2 Summary of “Top 10” Practical Tips for Conducting and Publishing Longitudinal Research on Careers

Practical Tip	Key points
Tip 1: Get your measures “right”—or as right as possible	<ul style="list-style-type: none"> • For quantitative research: Recognize that you are effectively “stuck” with whatever you measure you choose to include in the initial wave of data collection. Therefore, you need to do your homework about the different measurement options available before embarking on any (quantitative) longitudinal data collection. Nonetheless, we encourage you to add

	<p>measures in subsequent waves of data collection, as applicable.</p> <ul style="list-style-type: none"> • For qualitative research: You should feel free to go where the research takes you, and to update your interview protocol flexibly over time to explore emerging themes. Your data will dictate the area of careers research that you ultimately contribute to.
Tip 2: Get your sample “right”—or as right as possible	<ul style="list-style-type: none"> • Your research question should guide which sample you recruit. Think about what type of individual would be ideal for examining your particular research question (e.g., is it someone in a particular life stage or career transition?). • If conducting a qualitative study of individuals going through a particular career process, consider recruiting participants who can provide both retrospective and real-time accounts of that process.
Tip 3: Choose your study length and time intervals carefully	<ul style="list-style-type: none"> • The length of your study, and the embedded measurement periods, should be informed by the process or phenomena under consideration. • Reviewers will expect you to provide a rationale for the length of your study and measurement intervals. Provide this rationale in your manuscript, or be prepared to add it (when reviewers will likely ask for it) during the review process.
Tip 4: Leverage the passage of time	<ul style="list-style-type: none"> • With the passage of time comes the opportunity to collect more data. Take advantage of this opportunity! • Consider following up with a sample you have studied in the past (regardless of whether or not you have already published a paper drawing on that sample). • You may also look into collecting data that was sensitive or restricted in the past. Sometimes, data become more accessible with the passage of time.
Tip 5: Be flexible with your data analyses	<ul style="list-style-type: none"> • Keep in mind that you do not always have to use the data you have collected in its entirety (i.e., use all waves of data in a single paper). • Seek opportunities to learn new ways of analyzing longitudinal data, so that you can be flexible in your approach to data analysis. • Recognize that tools for analyzing longitudinal data are constantly evolving. Developing an openness to ongoing learning will be important for your success as a longitudinal researcher.

<p>Tip 6: Publish multiple papers from longitudinal datasets</p>	<ul style="list-style-type: none"> • Longitudinal research is arduous for you to conduct and valuable for careers scholarship. Thus, it is of benefit to both your career and the field that you publish multiple papers from a longitudinal dataset. • When attempting to publish multiple papers from a single dataset, be prepared to provide journals with a detailed and transparent overview of the data that have appeared in prior publications.
<p>Tip 7: Leverage and embrace technological change</p>	<ul style="list-style-type: none"> • Social media and other technology provide new and exciting opportunities for conducting longitudinal research, such as for keeping in touch with your participants and recruiting new participant samples. Think about how you can take advantage of these opportunities.
<p>Tip 8: Organize, analyze, and memo as you go—a specific tip for qualitative research</p>	<ul style="list-style-type: none"> • Longitudinal qualitative research often generates enormous amounts of data in the form of interview transcripts, observations, and archival documents. It is important to stay on top of these data from the outset, and to analyze and organize continuously throughout the research process, to avoid data overload. • Write memos as you conduct your interviews to summarize key ideas and make note of surprising findings. • Participants in longitudinal qualitative studies want to know that you value and respect their time. After an initial interview with a participant, you should enter every subsequent interview with the ability to demonstrate your knowledge of the previous interview. You can do this by reviewing your memo from the previous interview, or, even better, by re-reading the transcript.
<p>Tip 9: Be resilient</p>	<ul style="list-style-type: none"> • Given the extra time and effort involved in conducting longitudinal research, any journal rejection can feel particularly painful. Stay positive! If you have collected rigorous longitudinal data to investigate an interesting research question, you will almost certainly find a home for your research!
<p>Conclusion and Tip 10: Do longitudinal research!</p>	<ul style="list-style-type: none"> • Longitudinal research is fundamental to advancing knowledge of careers. • There are major opportunities for you to shape the field by harnessing this ambitious and rigorous type of data collection.

Tip 1: Get your measures “right”—or as right as possible.

“You’d better get this right,” Richard Hackman, my (Shoshana’s) dissertation chair, said to me, at the time a first-year doctoral student, somewhat ominously. We were meeting to discuss the finishing touches on the survey that was meant to be the first in a multi-wave longitudinal study of calling in the context of young musicians—to which I responded by bursting into tears. The need to repeat measures over several data collections, which is necessary for measuring change over time, felt—and can still feel—like a weighty research choice. In the case of my study, at the time of its launch, there was exactly one existing empirical study on calling in the field of organizational behavior (Wrzesniewski, McCauley, Rozin, & Schwartz, 1997), so there was a tremendous amount about this construct that was unknown. As a result, I included Wrzesniewski and colleagues’ scale in my data collections, and also made what felt like a bet to develop and use my own scale for the study’s focal construct, calling, which would ultimately be published only many years later (Dobrow & Tosti-Kharas, 2011). My dissertation ended up including four waves of data spanning as many years. At my defense, I could not have been prouder when my dissertation chair told me I was his first doctoral student who had done a longitudinal dissertation—which highlights both the merits as well as, perhaps, the riskiness of conducting longitudinal research at the doctoral career stage.

Longitudinal researchers also have to be comfortable with the fact that new constructs, as well as new measures for existing constructs, will enter the literature after your study’s first data collection. You may also get ideas for new constructs or measures to include after your study has launched. As an example, an informal conversation I (Shoshana) had with a professional musician that occurred between Times 1 and 2 of my longitudinal study of musicians led to the inclusion of new social encouragement measures at Time 2, which turned out to be theoretically and empirically important in my study (Dobrow, 2013). The practical reality of conducting surveys is a need to balance the inclusion of a variety of

measures with concern for length and time to complete the survey, both of which affect respondent fatigue. This can lead you to opt not to include measures in a given data collection that, in retrospect, you wish you had (e.g., I did not include my scale to measure calling on the Time 3 survey, as this data collection centered on other aspects of my participants' lives, but I wish I had collected it). Thus, in a sense, longitudinal studies can seem like time capsules of where the literature—or where the researcher's thinking—stood at a particular point in time.

To address these types of concerns when conducting quantitative longitudinal research, you should accept that you are effectively “stuck” with the measures you select at the launch of your study. This point applies not only to primary data collection, but also to quantitative longitudinal research that draws on archival data. In these cases, you may be limited by measures that are not exactly what you would have chosen (e.g., a single-item, global measure of the focal construct, job satisfaction, rather than a multi-item scale, as in Dobrow et al., 2018) or changes in how the constructs were measured at different waves of the data collection (e.g., shortening scale lengths, such as by dropping items, over time). In contrast, when conducting qualitative longitudinal research, particularly using a grounded theory approach, it is often a best practice to modify your interview protocol as needed, stay true to your data, and let emerging findings direct your subsequent data collections, rather than allowing your early thinking to, by necessity, dictate the direction of your research—even if that means drawing on new literatures or new constructs.

As your work progresses through the publication process, you may very well need to defend your choice—or, in the case of archival data, the choices made by the parties that collected the data—to reviewers, even many years later. These points can be somewhat awkward to respond to, as the following reviewer comment shows. I (Shoshana) submitted a paper based on my longitudinal study of musicians, which included the core measure of

calling dating back to the study's launch in 2001, even though this scale was published only later:

You mention that you used the Dobrow and Tosti-Kharas (2011) 12-item calling scale to measure calling. I had a few issues with this ... you say that you "collected this measure five times over 11 years (Times 1 through 5)," yet Time 1–4 periods all occurred prior to 2011 when the Dobrow & Tosti-Kharas measure was published. Can you explain this discrepancy?

This comment was difficult to respond to without violating the norms of the double-blind review process. This type of sequencing issue leads us to strongly encourage reviewers to be aware of and compassionate to similar issues that may come up in quantitative longitudinal research. All this said, if and when you encounter new ideas and/or new measures during the course of your longitudinal study, as we have, we strongly suggest you include them in your subsequent data collection. As we discuss in Tip 5 below, you should be flexible in how you analyze your data and there may very well be approaches you can use to rigorously include measures that were not collected at all previous timepoints.

Tip 2: Get your sample "right"—or as right as possible.

You also need to make a bet about the sample you focus on in longitudinal research, as again, you are effectively "stuck" with it. Even the most brilliant longitudinal researchers do not have crystal balls. They cannot possibly know how participants' careers will unfold over time—nor can they foresee the external shocks that may impact participants' careers, such as in the case of the COVID-19 pandemic. This uncertainty is both one of the joys and one of the challenges of being a longitudinal researcher. Ultimately, as with other research designs, you need to select a sample that is the best possible fit for your research question at the time. For instance, my (Shoshana's) longitudinal study of young musicians progressing from high school into adulthood, an "unconventional" sample for organizational behavior or management research (Bamberger & Pratt, 2010), spans the specific, critical life stages relevant to addressing research questions about early career choices in a challenging labor

market context, where the core construct being studied—calling—is highly salient. With longitudinal research, you especially need to be mindful of your participants' likelihood of continuing to participate over the years. Whether you are conducting quantitative or qualitative longitudinal research, your participants' involvement in multiple, time-consuming rounds of surveys or interviews is truly generous. We thus encourage longitudinal researchers to acknowledge participants' contributions through various means, which may include offering research incentives, expressing thanks verbally or in writing, and providing follow-up information about your research findings.

Tip 3: Choose your study length and time intervals carefully.

To be effective, longitudinal study designs should include the “right” time periods, such that they span the specific and/or critical life stages relevant for addressing your research question in your particular type of context. For instance, in my (Hannah's) three-wave qualitative longitudinal study of the process by which people transition from unfulfilling lines of work to pursue their callings, I needed a timeframe that would allow me to observe turnover behavior in a sample of adults considering career “jumps.” This resulted in my choice of an 18-month study design—with the three data collections occurring at the beginning (Time 1), middle (Time 2, roughly 9 months after Time 1), and end (Time 3, roughly 18 months after Time 1)—which prior research has suggested is an appropriate length of time to observe these types of behaviors (Felps et al., 2009).

In the first review I (Shoshana) ever received on a paper from my longitudinal study of musicians, one reviewer asked, “Why were these particular time intervals chosen?” To this day, I am mindful of this question in terms of both being as thoughtful as possible about structuring the spacing of data collections in longitudinal research designs as well as being as clear as possible about this in my manuscripts. However, longitudinal data collections present

numerous challenges, and you—as well as your reviewers—should appreciate the need to be both conceptually- and pragmatically-driven with longitudinal data collection timings.

You might be surprised to see how often editors and reviewers of papers that use multi-year, multi-wave longitudinal datasets still, nonetheless, ask the authors for yet more waves of data during the revision process. Granted, this may be justified conceptually, as in the following comment from an action editor in regard to the initial submission of a paper based on my longitudinal study of musicians. At the time, it was a four-wave, seven-year study:

It also occurs to me that it has been several years since the last data collection on this sample; are there plans for continued collection with them? If such data exist or will in the near future, I think it would be a mistake to hold them out of this paper. I think it will be difficult to reach the standard for contribution if your revised model continues to end with just behavioral intentions as an outcome.

In this case, we were not “holding data out” of the paper; rather, the next data collection was happening at the same time—which fortunately already included the type of behavioral outcomes the editor requested. We were able to add this wave of data, including a new, stronger dependent variable, into our manuscript, such that the version that was ultimately accepted was based on a five-wave, 11-year study. At a big picture level, we cannot overstate how important it is for your data to address your underlying conceptual questions (Bono & McNamara, 2011)—no matter how much impressive longitudinal data you might have.

Tip 4: Leverage the passage of time.

Not only does the passage of time offer numerous conceptual and methodological benefits to your study, as already discussed in this chapter, but it can also create another potential benefit: access to more data. Data that are sensitive at one point in time, and thus potentially unavailable to you as a researcher, may become available to you at a later point in time. For instance, if you are studying adolescents progressing into adulthood, as is often relevant to research about initial career choices (e.g., Rogers, Creed, & Glendon, 2008), some topics that

are sensitive (e.g., mental health, sexual orientation) or even not applicable (e.g., marital status) for minors during an earlier wave of your data collection may become less sensitive and more relevant and/or appropriate during a later wave of data collection when your participants are adults.

Another example comes from my (Shoshana's) longitudinal study of musicians. From early on in the study, I knew I wanted and needed some measure of objective musical ability. My participants were originally students at two selective summer music programs in 2001 that used auditions to ascertain who would be admitted. These audition ratings, which were consistent across participants within each site, were the best possible indicator of objective ability that I could think of—and I desperately wanted these data for my study. However, not only did the summer programs not inform the participants of their own audition ratings, but they also refused to grant me access to this information because it was too sensitive. Only in 2005, four years after the auditions occurred, did the programs finally grant me access to this information in their archives. In one case, the data were electronic, and so, relatively easy to handle, and in the other case, the data existed only in hard copy in basement archives where I spent considerable time doing manual data entry. The bottom line here is that patience and persistence can pay off when it comes to longitudinal data. And, when there are data you need, be willing to put in the work to get it.

Tip 5: Be flexible with your data analyses.

Once you are at the stage of analyzing your longitudinal data, we strongly encourage you to be flexible with your approach to using your data. You do not always need to use all waves of your data nor do you always need to examine change over time. For instance, I (Shoshana) first learned how to do longitudinal analyses using multilevel modeling, also known as individual growth modeling (Singer & Willett, 2003), in a course during my doctoral program. It took me quite a while afterward to realize that I did not *need* to use this analytical

approach—that is, using all available waves of data and/or analyzing change in the focal construct over time—for every analysis of longitudinal data afterwards. Rather, as with all empirical research, it is important to match your analyses and use of data to your research questions. For example, several of my (Shoshana's) own papers that draw on longitudinal data use multiple regression analyses (e.g., Dobrow & Heller, 2015; Dobrow & Tosti-Kharas, 2012; Higgins et al., 2010) while others use more sophisticated multilevel modelling, both two-level (e.g., Dobrow & Higgins, 2019; Dobrow, 2013) and even three-level (Dobrow et al., 2018; see Snijders & Bosker, 2011 for an introduction to multilevel analysis). We discuss tips for analyzing qualitative longitudinal data in Tip 8.

To prepare for these different analytic approaches, you can and should train yourself in analytical methods to the extent possible and always keep your eyes open for new opportunities to gain this type of expertise (e.g., if you're a doctoral student, take any/all courses related to longitudinal analyses, and if you're in a more advanced career stage, you can enroll in training seminars or attend workshops at conferences). It is also typical for virtually every quantitative paper you write to require at least one new type of statistical analysis that you have never done before, so it is important to recognize and even embrace this aspect of continual learning in your research. There are other tactics you can use if you find that your longitudinal study requires analyses beyond your expertise, including recruiting a coauthor who knows these types of statistical approaches or hiring a statistician.

Related to Tip 7, the passage of time can offer statistical advances that benefit longitudinal research. When I (Shoshana) first started trying to publish papers using multilevel modeling, this type of analysis was regarded as highly novel, even unusual and borderline impenetrable, by many editors and reviewers. As such, over the years, as is often the case with leading-edge methodological and statistical approaches, I have had to devote a lot of energy, both in manuscripts and in responses to reviewers, introducing, justifying,

explaining, and defending the (appropriate) use of this type of analysis. Indeed, reviewers have even asked us to switch from this type of analysis to more “standard” multiple regression analyses, which would not have been as good a match for our research question or data, likely because they were not familiar with multilevel analyses. Reviewers have also confused our multilevel analyses with similar, but different, approaches like latent growth modeling. Fortunately, as multilevel modeling, as well as other analytical approaches like structural equation modeling, have become more mainstream, the burden on longitudinal researchers to justify even the most basic aspects of their analytical choices has diminished. Yet, we find that we are still routinely asked by editors and reviewers to explain our analyses in such a way that readers who are unfamiliar with these methods can understand.

In sum, we encourage scholars to follow the latest best practices in longitudinal research, in general. While the methods discussed in this chapter and adopted in our previous research may reflect “current” best practices (or best practices at the time when the research was conducted), longitudinal research methods and analytical approaches are rapidly evolving and increasing in sophistication over time. Overall, just as longitudinal research sheds light on the evolution of constructs, the methods for conducting and analyzing longitudinal research are going through an evolution of their own over time.

Tip 6: Publish multiple papers from longitudinal datasets.

Given the investment required to collect longitudinal data, you most likely will want more than one publication out of your dataset. To successfully do this, each paper needs to make novel contributions to the literature in order to “justify” a separate publication. In our experience, the threshold for demonstrating a contribution from the same dataset may be—or at least feel—even higher than for a paper that uses a novel dataset. Thus, it is incumbent upon longitudinal researchers to be extra clear in articulating novel contributions from datasets that have generated previous publications already. The following example is from a

rejection of a manuscript using the first author's longitudinal study of musicians dataset.

Here, a reviewer expressed concern—which was very frustrating to hear—about the potential for contribution based on this longitudinal dataset that had already generated prior publications: “However, given the previous research on the topic, including several papers based on this data, I struggled to see how this study significantly increases our understanding of the phenomenon.”

The rise in calls for transparency in research—including pre-registering studies and making datasets publicly available—poses unique challenges for longitudinal research. First, when submitting a paper based on data that has been used in prior publications, the current norm at most journals is that authors must provide information about data transparency (often in the form of a table), describing variables included in those prior publications as well as in the current manuscript. This is relatively straightforward to do, but comes with some risks of unblinding the review process as well as potentially unintentionally raising the bar for contribution by highlighting prior work from the same dataset. We have found in our experience that sometimes this information is shared with not just the editor considering the manuscript but with reviewers as well. Second, if you began collecting longitudinal data in the past, practices like pre-registration, which are now strongly encouraged, were not at all common (Center for Open Science, 2017). Some psychology scholars have suggested that in cases such as this, where pre-registration is no longer possible, it is still possible to share study protocols, data, and other materials on the Open Science Framework (OSF) (e.g., Tackett, Brandes, & Reardon, 2019). Even for longitudinal studies starting now in the current era of transparency, practically speaking, it would be impossible for most longitudinal researchers to accurately predict, and, so pre-register, studies that will continue long into the future. Third, some scholars may rightfully feel less comfortable making their longitudinal

datasets, which require such high levels of investment, public relative to other types of datasets that are considerably easier to obtain.

Given these particular issues, we encourage scholars, including the OSF, to push for methods of transparency tailored to diverse research methodologies. In the case of newly launched quantitative longitudinal research, transparency may include pre-registering variables and research questions prior to each data collection, as well as sharing survey materials. However, for ongoing or already-completed longitudinal studies, journals and reviewers should be mindful that requirements to pre-register may be applied moving forward, but are impossible to apply retrospectively.

Tip 7: Leverage and embrace technological change.

Significant amounts of time pass over the course of conducting long-term longitudinal research on careers, and so we must expect that the technology we use in conducting this research will evolve. For instance, my (Shoshana's) initial involvement in longitudinal studies in the early 2000s saw a shift from drawing on paper-based surveys in the early waves of data collection to online surveys, which were considered quite technologically advanced at the time, in later waves. If you fast forward to studies launched more recently, current technologies like online communities can enable both data collection and access to samples. For example, I (Hannah) recruited participants for my qualitative longitudinal study from an online community comprised primarily of individuals who made or were deliberating making a "jump" to pursue a passion in their careers. This context was thus an ideal, "extreme" context for finding participants who could shed light on the career phenomenon of interest (Eisenhardt, 1989), but would have been difficult to pinpoint without this type of online community even as recently as several years ago.

Technology is also critical for a key task of longitudinal research: the ongoing ability to track and contact your participants over time. For instance, in the early stages of my

(Shoshana's) longitudinal study of musicians, around 2001–2003, I collected—and used—mailing addresses and phone numbers to stay in contact with participants. As my data collection shifted to online surveys, I needed a different type of contact information—email addresses. This information was not stable for participants like mine, who were graduating from high school, entering college, and then entering the workforce, with each transition often yielding a new email address. Thus, be prepared to put in a lot of effort—and creativity—to track participants over the long term if you want to achieve high response rates.

During its first few years of existence, roughly 2004–2006, Facebook was a social networking platform for university students only—and as such, it seemed like a perfect means to reach out to my primarily university-aged study participants for whom I did not have current contact information. For my data collections occurring during these years, I did successfully reconnect with many participants this way. Nonetheless, a word of caution: unlike email or other direct means of communication, platforms like Facebook have their own standards of use that may limit your ability to use the platform for your research purposes. For instance, I apparently sent enough similar-looking emails via Facebook to my study participants that, in spite of these messages being for legitimate academic research purposes, Facebook classified the emails as spam and shut down my account. Platforms like LinkedIn can also be extremely useful for longitudinal research—with the same caution that each platform has its own standards for use. We are highly aware that the rapid rate of technology change makes even these relatively recent examples almost immediately sound outdated, thus reinforcing this tip to be ready to leverage and embrace technological change!

Tip 8: Organize, analyze, and memo as you go—a specific tip for qualitative research

Based on our experience, we offer two main suggestions for conducting qualitative longitudinal research on career processes. First, use highly organized practices for managing

your data because qualitative longitudinal studies involve extraordinary amounts of data. For instance, a 45-minute interview can yield a typed transcript of 10 or more pages. Thus, if your study involves 50 participants interviewed at three points in time, you can expect to conclude your study with over 1,500 pages of interview transcripts. Moreover, if you attempt to triangulate your interview findings with other qualitative sources (e.g., archival or observational data), as we often do in our own qualitative research, you will likely end up with hundreds of additional pages in archival documents, observational notes, and memos. It is thus not surprising that scholars often mention the sheer magnitude or “immense amount of data” (Lifshitz-Assaf, 2018, p. 752) generated by their longitudinal qualitative studies.

In order to avoid “death by data asphyxiation” (Pettigrew, 1990, p. 281), it is important to develop systematic procedures for naming and storing files, keeping track of future contact dates for each participant, and conducting timely analyses of interview transcripts. This last point is particularly important, as promptly analyzing the interview transcripts one-by-one (or even in small batches) allows researchers to stay on top of emerging findings that can be explored in subsequent rounds of data collection (Spradley, 1979). Indeed, as a result of this process, your interviews can even become “progressively more focused to capitalize on emerging themes” (Petriglieri, Petriglieri, & Wood, 2018, p. 485) across your rounds of data collection. In sum, it is crucial to begin data analysis early on. If not, you may become overwhelmed by your data, and you may discover unexpected findings that you are unable to explore further. Analyzing your data along the way enables you to approach the data in manageable chunks, and to modify your interview protocol alongside your emerging theory (Glaser & Strauss, 1967).

Our second suggestion concerns writing memos, a hallmark of the grounded theory method of data analysis (Glaser & Strauss, 1967). Memo-writing is important for qualitative research in general, and we would argue that it is especially important for longitudinal

research involving successive rounds of semi-structured interviews. Weeks, months, or even years pass between interview rounds, making it difficult for qualitative researchers to remember with accuracy the precise content of their previous interviews. Researchers who enter interviews unable to remember their previous conversations may have to spend time clarifying technical points (e.g., about participants' job roles or career histories) covered in those prior conversations. Not only does this use up valuable time in the interview, but such clarifications may also inadvertently annoy participants by violating participants' expectation that the researcher would enter the conversation with some level of baseline knowledge based on prior conversations and, further, may signal that the researcher places little value on participants' time. Thus, unless it is appropriate for your research—for example, your research focuses on sensemaking (e.g., Maitlis, 2009; Vough & Caza, 2017) or the evolution of people's self-narratives (Weisman, 2019), which specifically require understanding how answers to the same questions change over time—it is important to demonstrate this baseline knowledge. Try to avoid repetitive questions and be prepared to answer participants' questions, such as “Can you remind me what I said last time?” One technique we recommend for being prepared in this way is by writing memos after each interview, and by reviewing these memos before each subsequent interview. If you have time, you can also re-read the prior transcripts on the interview day.

Tip 9: Be resilient.

Weathering the ups and downs—and risks—of conducting long-term research, where the payoff in terms of results and publications may take years, requires resilience. The first paper I (Shoshana) submitted to a journal from my longitudinal dissertation initially received a revise and resubmit—and was then rejected in the next round of review. One of the reviewers boldly proclaimed: “I appreciate how hard it is to give up on a project in which so much time has been invested in data collection and in manuscript preparation.” Well, in spite of the fact

that this reviewer’s comment is permanently seared in my memory, I certainly did not “give up” on this study—five years into collecting data, at that point—and I not only collected subsequent waves of data but also successfully published papers from this dataset. Thus, when the going gets tough, remind yourself why it matters to you—and our field more broadly—to study your research questions in the first place.

Conclusion and Tip 10: Do longitudinal research!

We hope this chapter has highlighted the legitimate benefits—and challenges—of conducting rigorous longitudinal research to better understand careers, along with tips on how to address some of these challenges. Although hearing cautionary advice from your dissertation chair like, “You’d better get this right,” could make you burst into tears (as it did for Shoshana!), we nonetheless encourage you to undertake the amazing journey of conducting longitudinal research, even for your dissertation. Both of us have done it, and so, too, can you. We fully acknowledge that doing longitudinal research, especially over the long term, can sometimes seem, to put it bluntly, crazy, but it is also completely worth doing. The caveat here is when you make the decision to launch a longitudinal study, it should be for a real research purpose, not simply because you think you need this type of data to get published. Longitudinal research can offer insights into career phenomena in a way no other research methodology can. It can also be very powerful in your own career for helping you establish a clear research identity.

An exciting aspect of longitudinal research on careers is that no matter what career stage you choose to focus on in your study, your participants will likely be facing significant questions about what the next steps in their careers—and lives—will be. As a result, any given data collection is truly a journey into the lives of your participants. At the end of each data collection, you, as a researcher, are left with a cliffhanger about what will happen next. This is the blessing and curse of longitudinal research: each new answer or insight leads to

numerous new questions. This sets the stage for an ongoing research program, where, ultimately, only time will tell.

References

- Arthur, M. B., & Rousseau, D. M. (1996). Introduction: The boundaryless career as a new employment principle. In M. B. Arthur & D. M. Rousseau (Eds.), *The Boundaryless Career: A New Employment Principle for a New Organizational Era* (pp. 3–20). New York, NY: Oxford University Press.
- Bamberger, P. A., & Pratt, M. G. (2010). Moving forward by looking back: Reclaiming unconventional research contexts and samples in organizational scholarship. *Academy of Management Journal*, *53*(4), 665–671.
- Barley, S. R. (1989). Careers, identities, and institutions: The legacy of the Chicago School of Sociology. In M. B. Arthur, D. T. Hall & B. S. Lawrence (Eds.), *Handbook of Career Theory* (pp. 41–65). New York, NY: Cambridge University Press.
- Bono, J. E., & McNamara, G. (2011). From the editors: Publishing in AMJ—Part 2: Research design. *Academy of Management Journal*, *54*(4), 657–660.
- Boswell, W. R., Boudreau, J. W., & Tichy, J. (2005). The relationship between employee job change and job satisfaction: The honeymoon-hangover effect. *Journal of Applied Psychology*, *90*(5), 882–892.
- Boswell, W. R., Shipp, A. J., Payne, S. C., & Culbertson, S. S. (2009). Changes in newcomer job satisfaction over time: Examining the pattern of honeymoons and hangovers. *Journal of Applied Psychology*, *94*(4), 844–858.
- Bunderson, J. S., & Thompson, J. A. (2009). The call of the wild: Zookeepers, callings, and the double-edged sword of deeply meaningful work. *Administrative Science Quarterly*, *54*(1), 32–57. doi: 10.2189/asqu.2009.54.1.32
- Center for Open Science. (2017). A brief history of COS, from <https://cos.io/about/briefhistory-cos-2013-2017/>
- Creed, P. A., Kjoelaas, S., & Hood, M. (2016). Testing a goal-orientation model of antecedents to career calling. *Journal of Career Development*, *43*(5), 398–412. doi: 10.1177/0894845315603822
- Dobrow, S., Ganzach, Y., & Liu, Y. (2018). Job satisfaction over time: A longitudinal study of the differential roles of age and tenure. *Journal of Management*, *44*(7), 2558–2579.
- Dobrow, S., & Heller, D. (2015). Follow your heart or your head? A longitudinal study of calling and ability in the pursuit of a challenging career. *Journal of Applied Psychology*, *100*(3), 695–712. doi: dx.doi.org/10.1037/a0038011
- Dobrow, S., & Higgins, M. C. (2019). The dynamics of developmental networks. *Academy of Management Discoveries*, *5*(3), 221–250. doi: <https://doi.org/10.5465/amd.2013.0029>
- Dobrow, S., Weisman, H., Heller, D., & Tosti-Kharas, J. (2019). *Calling attention to 20 years of research: A comprehensive meta-analysis of calling*. Best Papers Proceedings of the Academy of Management Conference, Boston, MA.
- Dobrow, S. R. (2013). Dynamics of calling: A longitudinal study of musicians. *Journal of Organizational Behavior*, *34*(4), 431–452. doi: 10.1002/job.1808
- Dobrow, S. R., & Higgins, M. C. (2005). Developmental networks and professional identity: A longitudinal study. *Career Development International*, *10*(6/7), 567–583. doi: 10.1108/13620430510620629

- Dobrow, S. R., & Tosti-Kharas, J. (2011). Calling: The development of a scale measure. *Personnel Psychology, 64*(4), 1001–1049. doi: 10.1111/j.1744-6570.2011.01234.x
- Dobrow, S. R., & Tosti-Kharas, J. (2012). Listen to your heart? Calling and receptivity to career advice. *Journal of Career Assessment, 20*(3), 264–280. doi: 10.1177/1069072711434412
- Edwards, J. R. (2001). Ten difference score myths. *Organizational Research Methods, 4*(3), 265–287.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review, 14*, 532–550.
- Erikson, E. H. (1963). *Childhood and Society*. New York, NY: Norton.
- Felps, W., Mitchell, T. R., Hekman, D. R., Lee, T. W., Holtom, B. C., & Harman, W. S. (2009). Turnover contagion: How coworkers' job embeddedness and job search behaviors influence quitting. *Academy of Management Journal, 52*(3), 545–561.
- George, J. M., & Jones, G. R. (2000). The role of time in theory and theory building. *Journal of Management, 26*(4), 657–684.
- Ginzberg, E. (1951). *Occupational Choice: An Approach to a General Theory*. New York, NY: Columbia University Press.
- Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago, IL: Aldine Publishing Company.
- Grant, A. M., & Wall, T. D. (2009). The neglected science and art of quasi-experimentation: Why-to, when-to, and how-to advice for organizational researchers. *Organizational Research Methods, 12*(4), 653–686.
- Hall, D. T. (2002). *Careers In and Out of Organizations*. Thousand Oaks, CA: Sage Publications.
- Haynie, J. M., & Shepherd, D. (2011). Toward a theory of discontinuous career transition: Investigating career transitions necessitated by traumatic life events. *Journal of Applied Psychology, 96*(3), 501–524. doi: <https://doi.org/10.1037/a0021450>
- Higgins, M. C., Dobrow, S. R., & Chandler, D. E. (2008). Never quite good enough: The paradox of sticky developmental relationships for elite university graduates. *Journal of Vocational Behavior, 72*(2), 207–224. doi: 10.1016/j.jvb.2007.11.011
- Higgins, M. C., Dobrow, S. R., & Roloff, K. S. (2010). Optimism and the boundaryless career: The role of developmental relationships. *Journal of Organizational Behavior, 31*, 749–769. doi: 10.1002/job.693
- Holland, J. L. (1997). *Making Vocational Choices: A Theory of Vocational Personalities and Work Environments* (3rd edn.). Englewood Cliffs, NJ: Prentice Hall.
- Ibarra, H. (1999). Provisional selves: Experimenting with image and identity in professional adaptation. *Administrative Science Quarterly, 44*, 764–791.
- Ibarra, H., & Barbulescu, R. (2010). Identity as narrative: Prevalence, effectiveness, and consequences of narrative identity work in macro work role transitions. *Academy of Management Review, 35*(1), 135–154.
- Kroger, J. (2007). *Identity Development: Adolescence Through Adulthood* (2nd edn.). Thousand Oaks, CA: Sage Publications.
- Langley, A. (1999). Strategies for theorizing from process data. *Academy of Management Review, 24*(4), 691–710.
- Langley, A., Smallman, C., Tsoukas, H., & Van de Ven, A. H. (2013). Process studies of change in organization and management: Unveiling temporality, activity, and flow. *Academy of Management Journal, 56*(1), 1–13.

- Lee, T. W., Mitchell, T. R., & Sablinski, C. J. (1999). Qualitative research in organizational and vocational psychology, 1979–1999. *Journal of Vocational Behavior*, 55(2), 161–187.
- Levinson, D. J., Darrow, C. N., Klein, E. B., Levinson, M. H., & McKee, B. (1978). *The Seasons of a Man's Life*. New York, NY: Knopf.
- Lifshitz-Assaf, H. (2018). Dismantling knowledge boundaries at NASA: The critical role of professional identity in open innovation. *Administrative Science Quarterly*, 63(4), 746–782.
- London, M. (1983). Toward a theory of career motivation. *Academy of Management Review*, 8(4), 620–630.
- Maitlis, S. (2009). Who am I now? Sensemaking and identity in posttraumatic growth. In L. Morgan Roberts & J. Dutton (Eds.), *Exploring Positive Identities and Organizations: Building a Theoretical and Research Foundation* (pp. 47-76). New York, NY: Psychology Press.
- Mitchell, T. R., & James, L. R. (2001). Building better theory: Time and the specification of when things happen. *Academy of Management Review*, 26, 530–547.
- Ng, T. W. H., & Feldman, D. C. (2010). The relationships of age with job attitudes: A meta-analysis. *Personnel Psychology*, 63(3), 677–718. doi: 10.1111/j.1744-6570.2010.01184.x
- O'Keefe, P. A., Dweck, C. S., & Walton, G. M. (2018). Implicit theories of interest: Finding your passion or developing it? *Psychological Science*, 29(10), 1653–1664.
- Petriglieri, G., Petriglieri, J. L., & Wood, J. D. (2018). Fast tracks and inner journeys: Crafting portable selves for contemporary careers. *Administrative Science Quarterly*, 63(3), 479–525.
- Pettigrew, A. M. (1990). Longitudinal field research on change: Theory and practice. *Organization Science*, 1(3), 267–292.
- Ployhart, R. E., & Vandenberg, R. J. (2010). Longitudinal research: The theory, design, and analysis of change. *Journal of Management*, 36(1), 94–120.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. doi: 10.1037/0021-9010.88.5.879
- Pratt, M. G. (2000). The good, the bad, and the ambivalent: Managing identification among Amway distributors. *Administrative Science Quarterly*, 45(3), 456–493.
- Pratt, M. G., Rockmann, K., & Kaufmann, J. (2006). Constructing professional identity: The role of work and identity learning cycles in the customization of identity among medical residents. *Academy of Management Journal*, 49(2), 235–262.
- Rhodes, S. R. (1983). Age-related differences in work attitudes and behavior: A review and conceptual analysis. *Psychological Bulletin*, 93(2), 328–367.
- Rogers, M. E., Creed, P. A., & Glendon, A. I. (2008). The role of personality in adolescent career planning and exploration: A social cognitive perspective. *Journal of Vocational Behavior*, 73(1), 132–142.
- Salamon, S. D., & Robinson, S. L. (2008). Trust that binds: The impact of collective felt trust on organizational performance. *Journal of Applied Psychology*, 93(3), 593–601. doi: 10.1037/0021-9010.93.3.593
- Schein, E. H. (1978). *Career Dynamics: Matching Individual and Organizational Needs* (Vol. 24). Reading, MA: Addison-Wesley.
- Shingles, R. (1985). Causal inference in cross-lagged panel analysis. In H. M. Blalock (Ed.), *Causal Models in Panel and Experimental Design* (pp. 219–250). New York, NY: Aldine.

- Singer, J. D., & Willett, J. B. (2003). *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*. New York, NY: Oxford University Press.
- Snijders, T. A. B., & Bosker, R. J. (2011). *Multilevel Analysis: An Introduction to Basic and Advanced Multilevel Modeling* (2nd edn.). London: Sage Publications.
- Sonnentag, S. (2012). Time in organizational research: Catching up on a long neglected topic in order to improve theory. *Organizational Psychology Review*, 2(4), 361–368.
- Spradley, J. P. (1979). *The Ethnographic Interview*. New York, NY: Holt, Rhinehart & Winston.
- Super, D. E. (1992). Toward a comprehensive theory of career development. In D. H. Montross & C. J. Shinkman (Eds.), *Career Development: Theory and Practice* (pp. 35–64). Springfield, IL: Charles C. Thomas.
- Tackett, J. L., Brandes, C. M., & Reardon, K. W. (2019). Leveraging the Open Science Framework in clinical psychological assessment research. *Psychological Assessment*.
- Taylor, K., Marienau, C., & Fiddler, M. (2000). *Developing Adult Learners: Strategies for Teachers and Trainers*. San Francisco, CA: Jossey-Bass.
- Vough, H. C., & Caza, B. B. (2017). Where do i go from here? Sensemaking and the construction of growth-based stories in the wake of denied promotions. *Academy of Management Review*, 42(1), 103–128. doi: 10.5465/amr.2013.0177
- Vroom, V. H. (1966). Organizational choice: A study of pre-and post-decision processes. *Organizational Behavior and Human Performance*, 1(2), 212–225. doi: 10.1016/0030-5073(66)90013-4
- Wanous, J. P. (1992). *Organizational Entry: Recruitment, Selection, and Socialization of Newcomers* (2nd edn.). Reading, MA: Addison-Wesley.
- Weisman, H. (2019). *For better or for worse? Changing careers to pursue a calling*. Paper presented at the INFORMS/Organization Science Best Dissertation Proposal Competition, Seattle, WA.
- Willett, J. B. (1989). Questions and answers in the measurement of change. *Journal of Research in Education*, 15, 345–422.
- Wright, T. A. (1997). Time revisited in organizational behavior. *Journal of Organizational Behavior*, 18(3), 201–204.
- Wrzesniewski, A., McCauley, C. R., Rozin, P., & Schwartz, B. (1997). Jobs, careers, and callings: People's relations to their work. *Journal of Research in Personality*, 31(1), 21–33. doi:10.1006/jrpe.1997.2162
- Yang, J., & Diefendorff, J. M. (2009). The relations of daily counterproductive workplace behavior with emotions, situational antecedents, and personality moderators: A diary study in Hong Kong. *Personnel Psychology*, 62(2), 259–295.
- Zaheer, S., Albert, S., & Zaheer, A. (1999). Time scales and organizational theory. *Academy of Management Review*, 24(4), 725–741. doi: 10.5465/amr.1999.2553250

¹. We add a cautionary note that our use of a difference score to model change in this paper reflected guidance at that point in time (early to mid 2000s), where readers were not assumed to have been exposed to analytical approaches (e.g., multilevel analyses) appropriate for analyzing three or more waves of data, as they are currently. We do not encourage future research to use difference scores (Edwards, 2001).