

Exploring, Understanding, and Promoting Pluralistic Strategies for (Qualitative) Research

by

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Dedicated to

My son, Suleiman, for always reminding me that I am a “strong woman”!

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Abstract

There have been growing calls in the field of management for pluralistic research, primarily because it allows for scientific discovery and advancement. However, despite these calls, the field of management is still homogenous in its research approaches and practices. This motivates the aim of this thesis, which is to explore, understand and promote pluralistic (qualitative) research. The present thesis has six chapters, which have been grouped under three parts - *exploring disclosure as a prerequisite for pluralism, understanding pluralism in qualitative research & promoting pluralism in qualitative research*. In part I of this thesis, we explore disclosure, which is also seen as a prerequisite for embracing pluralistic research. Therefore, in Chapter I, we interrogate transparency for quantitative papers, in which the aim is to understand the degree of disclosure of research procedures. We also interrogate the impact of transparency on article citations. In Chapter II, we interrogate the issue of disclosure for qualitative case study papers. The aim is to understand the relationship between different rigor criteria and case study design on article citations. Findings from this chapter form the basis for part II, in which the aim is to understand pluralism in qualitative research. Therefore, in this, part we interrogate three methodological aspects, which we discuss in Chapter III, Chapter IV and Chapter V. In Chapter III, we investigate case selection strategies for qualitative single case study research. In Chapter IV, we conceptualize different modes of theorizing styles for qualitative single case study research. In Chapter V, we interrogate different temporal modes of theorizing for qualitative research. Our insights from part II of this thesis are applied on part III, in which our aim is to promote pluralistic qualitative research. Therefore, in Chapter VI, we analyze an empirical single case study, which is the 2008 Large Hadron Collider breakdown at the world's most renowned Physics' lab, Conseil Européen pour la Recherche Nucléaire (CERN). In this regard, we advocate for pluralistic (qualitative) research, which will allow both academic researchers and industry practitioners to understand management related phenomenon better.

Keywords: Pluralism, qualitative, transparency, case study research, rigor, impact, case selection, theorizing, time, organizational identity, identity work, technology

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Introduction

Introduction

This cumulative thesis comprises of six independent projects, and one of the underlying theme that emerges is 'pluralism' in research. Pluralistic research is essential as it allows new paths for scientific discovery and advancement (Folger & Turillo, 1999). However, a lack of it creates homogenous ways of thinking, which only impoverishes sensemaking (Delbridge & Fiss, 2013). Moreover, pluralistic research is quite relevant, especially now, since much of the editorial focus in management research has shifted towards understanding "Grand Challenges" (e.g., climate change, urban poverty, migration, income inequality). Since such problems are by nature complex; to understand them, the academic community must be open for embracing 'newer' ways of doing research (Eisenhardt et al., 2016; Ferraro et al., 2015; George et al., 2016; Suddaby et al., 2018).

Despite the numerous calls to embrace more pluralistic approaches in the field of management (Brannen & Doz, 2010; Delbridge & Fiss, 2013; Piekkari et al., 2009; Ragins, 2015; Welch et al., 2011; Welch & Piekkari, 2017); the field still lacks heterogeneity in research approaches (Delbridge & Fiss, 2013; Piekkari & Welch, 2011; Welch et al., 2011). In fact, the management discipline has been criticized for "fragmentation and lack of novelty" (Fisher & Aguinis, 2017: p 458). This lack of novelty has led to an over-reliance on 'theory borrowing' from other disciplines (Oswick et al., 2011). Therefore, there is a concerted need to be more inclusive. Moreover, researchers need to avoid 'mindless' application of established templates (e.g., see Harley & Cornelissen, 2020; Locke, Feldman, & Golden-Biddle, 2020; Mees-Buss, Welch & Piekkari, 2020; Pratt, Sonenshein & Feldman, 2020). In this, regard this thesis is able to provide the needed and necessary pathway to achieve the goal of embracing pluralistic research, by exploring, understanding and promoting it.

Structure of the Cumulative Thesis

To explain the underlying theme of ‘pluralism’, which emerges out of the six projects/chapters, we divide this cumulative thesis in three parts. The first part explores disclosure as a prerequisite for pluralism for both quantitative and qualitative research. The second part interrogates specific methodological considerations and decisions to understand pluralism in qualitative research. The third part applies learnings from part I and II on an actual empirical case study with the aim to promote pluralism in qualitative research.

In part I, we explore disclosure because it is an essential aspect towards embracing pluralistic approaches. This part has Chapter I and Chapter II. In Chapter I, we undertake a purely deductive study and focus on transparency to interrogate reporting practices for quantitative research. In contrast for Chapter II, we undertake induction and deduction (i.e. abduction) to interrogate disclosure practices concerning rigor and case study design for qualitative research.

In part II, we are interested in understanding pluralism for qualitative research, and we group chapters III, IV and V in this part. In Chapter III, we inductively interrogate selection strategies for single case study research. In Chapter IV, we conceptually interrogate theorizing styles for qualitative single case study research. In Chapter V, we inductively interrogate temporal theorizing styles for qualitative research. Our aim for all chapters in part II is to contribute to pluralistic strategies of conducting qualitative research.

Finally, in part III, we are interested in promoting pluralistic research. We apply learnings from part II on an actual empirical qualitative single case study, the 2008 Large Hadron Collider Breakdown at Conseil Européen pour la Recherche Nucléaire (CERN). This is chapter VI of this thesis. As such, the thesis structure looks the following, which we also indicate in the visual abstract (see figure 1).

Part I: Exploring Disclosure a Prerequisite for Pluralism

- Chapter I: The “WHAT” and “SO WHAT” of Transparency reporting: Exploring 20 years of Quantitative Field Studies in Management
- Chapter II: Designing for Impact: The Effect of Rigor and Case Study Design on Citations of Qualitative Case Studies in Management

Part II: Understanding Pluralism in Qualitative research

- Chapter III: Towards Two-Level Selection Strategies for Theorizing from Single Case Study Research
- Chapter IV: Better Stories and Better Constructs - Towards a Typology of Different Theorizing Styles from Qualitative Single Case Study Research
- Chapter V: The Forgotten Role of Time in Qualitative Theorizing for International Business Research

Part III: Promoting pluralism in Qualitative research

- Chapter VI: Getting back up! Managing the Relationship between Technology and Organizational Identity

Work-related to all six chapters in the thesis was done at the Università della Svizzera italiana (Lugano, Switzerland) as a registered doctoral researcher between 2017 and 2021. In figure 2, we showcase all academic contributions during this doctoral research at the Università della Svizzera italiana. In subsequent sections, we provide an overview of the three parts as well as the six chapters.

Figure 1: Visual Abstract of the Thesis

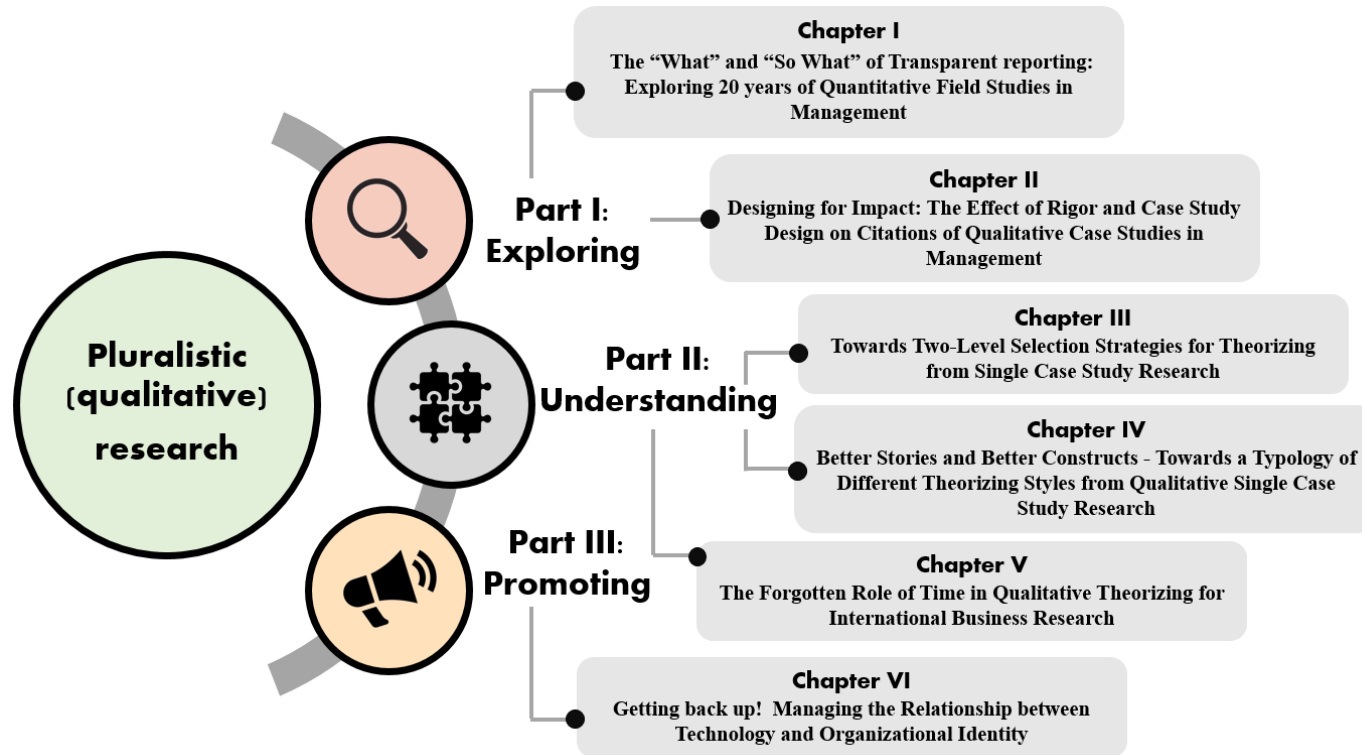


Figure 2: Academic Contributions of this Thesis

Publications

Accepted

- **Hoorani, B. H.**, Nair, L. B., & Gibbert, M. 2019. Designing for impact: the effect of rigor and case study design on citations of qualitative case studies in management. *Scientometrics*, 1-22.

Submitted

- **Hoorani, B.H.**, Plakoyiannaki, E., & Gibbert, M. The Forgotten Role of Time in Qualitative Theorizing for International Business Research. *Journal of World Business*.

Peer Reviewed Conference Papers

- **Hoorani B. H.**, & Gibbert M. 2021. Towards Two-Level Selection Strategies for Theorizing from Single Case Study Research. *European Academy of Management*.
- **Hoorani B. H.**, & Gibbert M. 2020. Selection Strategies for Single Case Study Research. *Academy of Management Meeting*.
- **Hoorani B. H.**, Gibbert M., & Phillips N. 2020. The Evolution of Mindfulness: the Case of the Large Hadron Collider Breakdown at CERN. *SMS. Strategic Management Society Annual Conference*.
- **Hoorani, B.H.**, Plakoyiannaki, E., Gibbert, M., 2019. Unboxing the Black Box: Towards a Typology of Theorizing from Qualitative Single Case Studies. *British Academy of Management*.
- Weiss, M., Nair, L.B., Gibbert, M., Hoegl, M., Doms, H. & **Hoorani, B.H.**, 2019. Towards inclusion in strategy research: Transparent reporting of field studies as a catalyst between qualitative and quantitative scholars. *European Academy of Management*.
- Gibbert, M., Nair, L.B., & **Hoorani, B.H.**, 2018. Hitting the bullseye! Impact of methodological rigor and research design on article citations for qualitative case studies. *British Academy of Management*.

- **Hoorani, B.H.**, & Gibbert, M., 2018. Diamonds in the Dust: A Tale of Two Level Case Selection. Academy of Management.

Submitted in Peer Reviewed Conferences

- **Hoorani, B.H.**, Gibbert, M., & Phillips, N., 2021 Getting back up! Managing the Relationship between Technology and Organizational Identity. British Academy of Management.
- **Hoorani, B.H.**, Plakoyiannaki, E., & Gibbert, M. 2021. The Forgotten Role of Time in Qualitative Theorizing for International Business Research. British Academy of Management.
- Weiss, M., Nair, L.B., Gibbert, M., Hoegl, M., **Hoorani, B.H.**, .2021. “What” and “So What” of Transparent Reporting: Exploring 20 Years of Quantitative Field Studies in Management. British Academy of Management.

Accepted Book Proposal

- Nair, L.B., Gibbert, M., & **Hoorani, B.H.** (2022). Combining Case Study Designs for Theory Building. Cambridge University Press

Awards & Nominations

- Nominated for the PhD Prize award for “The Evolution of Mindfulness: the Case of the Large Hadron Collider Breakdown at CERN” at the Strategic Management Society Annual Conference 2020.
- Received the Best Paper Award in the Research Methodology division for the paper “Hitting the bullseye! Impact of methodological rigor and research design on article citations for qualitative case studies” at the British Academy of Management 2018.

Part I: Exploring Disclosure as a Prerequisite for Pluralism

Disclosure is defined as the extent to which papers reveal procedural information with stakeholders (Pirson & Malhotra, 2011). It plays an essential role in ensuring inclusion, as it allows for the needed conversation to understand, appraise, improve, appreciate and include the different ways of conducting research (Aguinis et al., 2018; Cook & Campbell., 1979; Bettis et al., 2014; Moravcsik, 2014; Pirson & Malhotra, 2011). Moreover, it allows different stakeholders to assess the quality of research (i.e., rigor/trustworthiness). In this regard, we see disclosure as the *sine qua non* for embracing pluralistic research.

Therefore, in this part of the thesis, disclosure via reporting practices is explored for quantitative and qualitative research. Moreover, we analyze the causal relationship between these reporting practices and article impact (i.e., article citations), primarily because scientific advancement is the fundamental goal of any research.

We begin this interrogation with Chapter I, which looks at 'transparency' for quantitative papers. In this chapter, we provide an analysis of reporting practices, as well as their impact on article citations. This analysis yields an intuitive insight that more transparent papers tend to garner higher citations. On the contrary in Chapter II, we find counterintuitive results for qualitative case study papers in which rigor criteria have no direct impact on article citations. We provide an overview of Chapter I and Chapter II below.

Overview of Chapter I:

In Chapter I, we interrogate transparency of reporting practices for quantitative research. We undertake an analysis on 200 quantitative papers published from 1997 until 2016 (i.e., over 20 years) for five top management journals: *Academy of Management Journal*, *Administrative Science Quarterly*, *Strategic Management Journal*, *Organization Science* and *Journal of Management*. In this chapter, we explain what is being reported in

published quantitative papers by examining frequencies of actual reporting practices. Moreover, we confirm the robustness of results using Item Response Theory. This chapter also analyzes the relationship between transparency and article impact (i.e., article citations) using a negative binomial regression.

An earlier version of this chapter was accepted at the *European Academy of Management conference* 2019, which included quantitative and qualitative papers. However, the idea of analyzing both quantitative and qualitative papers was abandoned, since formulating a consistent transparency index for both quantitative and qualitative papers was becoming a challenge. Consequently, the revised version included an analysis of quantitative papers only. The current version of this chapter is under review at the *British Academy of Management conference* 2021 and is ready to be submitted in the journal of *Organizational Research Methods*.

Overview of Chapter II:

In this chapter, we examine the interrelationships between rigor (i.e., quality of research) and case study design (i.e., research design) on article impact (i.e., article citations) for qualitative case study research. The primary outcome variable is scientific impact (i.e., article citation). This is because citations play a significant role in evaluating the reputation of a researcher, academic department, and journal (Aguinis et al., 2014; Judge et al., 2007; Mingers & Xu, 2010). In this chapter, we apply content analysis on 173 qualitative case study articles published from 1996 until 2006 in *Academy of Management Journal*, *Administrative Science Quarterly*, *Organization Science*, and *Strategic Management Journal*. We then apply ordinary least squares and logistic regressions to understand the role of different rigor criteria and case study design on impact. This analysis yields a counterintuitive result that more rigorous papers have no impact on article citations. However, case study papers using replication logic are getting higher citations compared to non-replication logic papers. Moreover, replication logic papers are also better at disclosing than non-replication logic papers. In this chapter, we make important contributions by offering a new empirical classification on case study design and discusses

seven critical rigor criteria that can make qualitative case study research more rigorous and impactful.

An earlier version of this paper was accepted at the *British Academy of Management* 2018, which was also awarded the Best Paper Award at the Research Methodology Division. The current chapter has been published in *Scientometrics*. Moreover, findings from this chapter motivate part II of this thesis, in which the aim is to understand pluralism in qualitative research.

Part II: Understanding pluralism in Qualitative research

In this part of the thesis, we interrogate pluralism in qualitative research for two reasons. First, there has been a growing push back from qualitative researchers on the mindless application of research templates (Mees-Buss et al., 2020; Pratt et al., 2020; Welch & Piekkari, 2017). Consequently, there is an understanding that homogeneity can be counterproductive for understanding a particular phenomenon (Harley & Cornelissen, 2020; Pratt et al., 2020). Recently, Pratt & Colleagues (2020) have recommended the practice of 'bricolage', in which researchers transparently relay their 'analytical moves' (Pratt et al., 2020). This practice of 'bricolage' can be seen as the needed gateway in embracing pluralism in qualitative research. Second, there is consensus among qualitative methodologists that pluralism is necessary for rigorous/trustworthy research, as it allows for newer "ways of addressing questions in daring and playful ways" (Hjorth & Reay, 2018, p. 7). Moreover, "intellectual pluralism ultimately aids collective learning" (Tsoukas et al., 2003, p. 1005; Kellert et al., 2006; Piekkari et al., 2009; Piekkari & Welch, 2011; Pratt et al., 2020; Welch et al., 2011; Welch et al., 2013; Welch & Piekkari, 2017).

Therefore, in this part we interrogate different methodological aspects to understand pluralism in qualitative research. In Chapter III, we investigate case selection strategies in qualitative single case study research. In Chapter IV, we conceptualize different modes of theorizing styles for qualitative single case study research. Moreover,

in Chapter V, we interrogate different temporal modes of theorizing for qualitative research. An overview of each chapter is provided below.

Overview of Chapter III:

In this chapter, we examine selection strategies for qualitative single case study research. Case selection plays a vital role in ensuring rigor, primarily because the inferential power of a single case study rests quite literally 'by design' upon the case that the researcher selects. Therefore, without a clear understanding on how a case was selected, different research stakeholders can have serious doubts on the merits of conclusions reached (Cuervo-Cazurra et al., 2016; Eisenhardt & Graebner, 2007; Gerring & Cojocaru, 2016). While, in the methodological literature, there is consensus regarding the importance of case selection strategies (Cook & Campbell, 1979; Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Eisenhardt et al., 2016; Fletcher & Plakoyiannaki, 2011; Geddes, 1990; Gerring & Cojocaru, 2016; Miles et al., 2014; Patton, 2002; Seawright & Gerring, 2008; Yin, 2009); currently there is still a lack of understanding about actual case selection practices (Fletcher et al., 2018). In this chapter, we address this gap by looking at 300 single case study papers published between 1999-2019 in *Organization Studies*, *Organization Science*, *Academy of Management*, *Administrative Science Quarterly*, and *Strategic Management Journal*.

By disentangling different reported selection strategies for the qualitative single case study research, we find that on the case level, papers justify case selection on *constructs*, *context*, and *access*. In contrast, for the sub-unit level (i.e., sub-cases or embedded units within the single case), papers motivate selection on *different sub-units*. In this regard, we contribute to the methodological pluralism literature by proposing a two-level case selection framework.

Earlier versions of this chapter have been accepted at the *Academy of Management* 2018 and *Academy of Management* 2020 conferences. The current chapter has also been

accepted at the *European Academy of Management* 2021 conference and is ready to be submitted in the journal of *Organizational Research Methods*.

Overview of Chapter IV:

In this chapter, we examine the theorizing prowess of qualitative single case study research. This is important to investigate as different theorizing styles from single case study research are not known. This oversight might be due to the skepticism on the usefulness of the qualitative single case study research (Eisenhardt, 1989; Eisenhardt, 1991; Eisenhardt & Graebner, 2007; Gerring, 2004; Gerring, 2007a; Goldthorpe, 1997; King et al., 1994; Miles & Huberman, 1994). We interrogate the classical debate on case study research between Dyer & Wilkins (1991) and Eisenhardt (1989, 1991) to examine this lacuna. By interrogating tensions of this classical debate, we propose a typology on theorizing styles for single case study research: *narrative theorizing*, *variational theorizing*, *counterfactual theorizing*, and *story corroboration theorizing*. The former two represent archetypical modes of theorizing, namely *narrative theorizing* and *variational theorizing*; and the latter two represent two new additional styles of theorizing, namely *counterfactual theorizing* and *story corroboration theorizing*. We contribute by conceptualizing a theorizing typology, which provides further granularity to pluralistic styles of theorizing from qualitative single case study research.

Earlier versions of this chapter have been accepted at the *Academy of Management* 2019 and *British Academy of Management* 2019 conferences.

Overview of Chapter V:

In this chapter, we examine different temporal theorizing styles for qualitative research. It is important to understand this primarily because time is central to theorizing for the field of International Business (IB) (see Doz, 2011; Welch et al., 2011). However, there has been growing consensus by methodologists in International Business (including in other

fields of management) that time is not integrated well enough in the theorizing process (Blazejewski, 2011; Brouthers & Hennart, 2007; Eden, 2009; George & Jones 2000; Hurmerinta et al., 2016; Jones & Caviello, 2005; Lee & Liebenau 1999). This issue of 'timelessness' is problematic, as it can lead to a 'myopic' understanding of IB phenomena. This can compromise the trustworthiness of empirical evidence; and also harm the field's vibrancy as well as relevancy to address contemporary IB issues (Delios, 2017; Poulis & Poulis, 2018). In this chapter, therefore, we address this important gap.

We apply qualitative content analysis on papers published in two top tier IB journals- *Journal of World Business* and *Journal of International Business*. We find limited disclosure when it comes to explicating time-related methodological aspects. We also find that IB qualitative researchers report time via *snapshots*, *evolutionary phases*, *variational phases*, and *plots*. In this regard, this chapter contributes by proposing a typology on temporal theorizing in qualitative research, leading to four distinct temporal theorizing modes, which are *temporal co-variance*, *temporal evolution*, *temporal accumulation*, and *temporal narration*. As such, our typology opens up the spectrum of current temporal theorizing styles, which will increase the scope of possible theoretical gains in IB.

This version of the chapter has been submitted to *British Academy of Management* 2021 and submitted to *Journal of World Business*.

Part III: Promoting pluralism in Qualitative research

In this final part, learnings from part II are applied on an actual single case study, which is the 2008 Large Hadron Collider Breakdown at the world's most renowned Particle Physics' lab, Conseil Européen pour la Recherche Nucléaire (CERN). We select this case using insights developed in Chapter III. Moreover, we use learnings on theorizing from Chapter IV and V to theorize the relationship between technology and organizational

identity. In this regard, our work contributes to the literature on identity work and structuration view of technology. We provide an overview of Chapter VI below.

Overview of Chapter VI:

In today's organization, technology is so ubiquitous that identity of many renowned organizations is based on a particular technology (e.g., from Dyson, Tesla, NASA to Zoom, Google, Amazon, Facebook, Apple, and Microsoft, etc....). However, to this date, there is a limited understanding on the relationship between technology (i.e., an organization's flagship project) and organizational identity (Gal et al., 2014; Kilduff et al., 1997; Nag, Corley & Gioia, 2007; Ravasi & Canato, 2015; Ravasi & Schultz, 2006; Tripsas, 2009). Moreover, we do not know fully what will happen if this technology breaks down? Therefore, in this chapter, we examine the relationship between organizational identity and technology.

We analyze a unique context of the 2008 breakdown of the Large Hadron Collider (LHC) at Conseil Européen pour la Recherche Nucléaire (CERN). The Large Hadron Collider (LHC) was CERN's technological flagship project, which took 20 years to build with the collaboration of 10,000 scientists from around the world (Evans, 2009). Therefore, when the LHC broke down just nine days after its first run in September of 2008, CERN found itself amidst an organizational disruption that if mishandled, could have threatened its reputation. Given CERN's successful recovery, we use this critical case study to develop a theoretical understanding on the relationship between technology and organizational identity.

For this we select two different temporal embedded units, which are the periods before and after the breakdown. By comparing these temporal embedded units, we capture changes in the relationship between identity and technology. These changes are then used to propose a processual theoretical framework that theorizes the relationship between technology and organizational identity, mainly when the organization is singularly engaged with that technology, which also then breaks down.

In this chapter, we find that CERN shared different relationships with different parts of the same technology. This relationship was driven primarily through the prism of its organizational identity. In this regard, we contribute to the literature on social constructionist perspective of organizational identity, and structuration view of technology.

An earlier version of this chapter was accepted at the *Strategic Management Society* 2020, in which the paper was also nominated for the PhD prize award. The current chapter has also been submitted to the *British Academy of Management* 2021.

Part I: Exploring Pluralism

Chapter I*: The “What” and “So What” of Transparent Reporting: Exploring 20 Years of Quantitative Field Studies in Management

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Abstract

Research procedures need to be reported transparently to successfully integrate them into the body of scholarly knowledge. Relatedly, several guidelines and publications have suggested various specific aspects that need to be reported in quantitative management field studies for establishing a sufficient level of transparency. These guidelines and publications represent the normative reporting standards in our field. However, it is far from clear which of these aspects represent actual reporting standards in management field studies. Moreover, the factors that are associated with the transparency of quantitative management field studies as well as when and to what extent such transparency actually pays off in terms of a field study's impact, is currently not well understood. To rectify this, we review 200 quantitative field studies across five major management journals published over 20 years (1997-2016). This comprehensive sample allows us to identify actual reporting practices in management field studies and how they developed over time, along with their consequences for article impact (i.e., citation count).

Keywords: field studies; transparency; impact; citations; reporting practices.

Introduction

Transparency, that is, the degree to which relevant information is shared with stakeholders (Pirson & Malhotra, 2011), matters in research methodology. In order to appreciate a study's results, and to successfully integrate them into the body of scholarly knowledge, they need to be transparently relayed (Aguinis et al., 2010; Aytug et al., 2012; McGrath et al., 1982; Miguel et al., 2014). Transparency constitutes a prerequisite for evaluating the rigor (i.e., the quality of research): without clarity about key characteristics of the sample, the data, the study design, and the applied methods of analysis, rigor parameters such as validity and replicability are difficult to assess (e.g., Aguinis et al., 2018; Cook & Campbell, 1979). Most recently, many scholars assigned (the lack of) transparency in reporting practices a key role in the problems connected to questionable research practices (Banks et al., 2016; Fanelli, 2013). In this regard, transparency acts as a preventive through facilitating an appraisal of a given study's rigor and enabling replication (Banks et al., 2016; Goldfarb & King, 2016; Miguel et al., 2014; Nosek et al., 2015).

In management, while the rigor of research procedures has been studied for decades (Aguinis et al., 2010; Daft & Lewin, 2008), transparency (which is rigor's logical prerequisite) is less well understood and has received only scarce attention (Aguinis et al., 2018; Aguinis & Solarino, 2019). The type and amount of information which actually ends up in the manuscripts has dire consequences for the publication and review process. For instance, the lack of transparency often causes additional revision rounds during the review and the publication process. Even after successful completion of the review process, the lack of transparency in field research can hinder the audience from fully understanding the implications of presented results. Fortunately, recent discussions have put the appraisal of transparency to the attention of management scholars, leading to a basic understanding of what constitutes 'transparent' research procedures in quantitative field work (Aguinis et al., 2018). This understanding is complemented through recommendations and guidelines from fields other than management (in particular psychology and medicine), leading to greater cohesion in the reporting conventions regarding research context, methods, and data analysis (e.g., APA, 2008; Hancock &

Mueller, 2010; Kilkenny, et al., 2010; Schulz et al., 2010). Clearly, then, evaluating to what extent published management field studies adhere to these recommendations matters in its own right to diagnose actual reporting practices. Beyond anecdotal evidence, there has not been an empirical investigation of such actual reporting practices. In sum, this knowledge would help in identifying weak spots in current reporting practices and provide authors, reviewers, and editors with actionable and evidence-based recommendations for improving reporting practices.

Beyond that, the extent to which transparency ‘matters’ in terms of the impact of a given article on the field appears to be of great interest to management scholars. In particular, it would appear that articles with transparent methods would be more readily appreciated and consequently gain more impact in the academic community and thus provide a natural incentive for authors to reveal more information about the context, methods, and analyses in their studies. Impact, in this context, is operationalized by article citation counts, which represents the conventional and most frequently method used (Adam, 2002; Leung, 2007; Stremersch et al., 2007). However, we currently lack any evidence whether there is actually a connection between transparency and impact as measured through citation counts.

To tackle these research gaps, we investigated 200 papers published in five leading management journals over an extended period of time (1997–2016). By doing so, we hold up a mirror to management field research by identifying actual reporting practices and linking an article’s transparency to its recognition and appreciation in the academic community (in terms of the impact of the published article). We thus provide a long-missing assessment of just what is actually reported in articles published in particularly well-reputed journals, when compared to what is recommended in normative publications. We specifically focus on top-tier management journals, since they supposedly showcase the *crème de la crème* of management research. Top-tier management journals are also considered as the trend setters of the discipline and which landmarks for those who conduct impactful field research in management. The results of our study thus show what ‘passes’ reviewers’ and editors’ value systems in terms of reporting (and thus establish de

facto reporting standards in journals). Furthermore, we also scrutinize whether variance in transparent reporting across individual articles is related to how scholars in the field reference articles over time. Thus, we aim to establish whether these standards actually ‘matter’ (i.e., whether more transparent articles have a higher level of impact and are better appreciated by the journals’ readers. In the past, several antecedents of article impact were examined, including clarity, coherence, structure, methodological rigor, as well as the impact of the journal or type of issue in which it has been published (Bergh et al., 2006; Conlon et al., 2006; Flickinger et al., 2013; Haslam et al., 2008; Judge et al., 2007). However, transparency of reporting has not been included in the set of antecedents of article impact so far.

Operationalizing Transparency

In this research, we refer to a straightforward definition of transparency as the degree to which authors share relevant information with stakeholders (Pirson & Malhotra, 2011). In our case, stakeholders are those involved in the decision to publish a paper (i.e., reviewers, editors), as well as the readers of the published article (Aguinis et al., 2010). These stakeholders usually depend on the author to report the relevant information regarding the procedures of empirical field and laboratory studies. Naturally, only what gets reported can be assessed, so transparency constitutes the fundamental prerequisite for assessing the quality (i.e., rigor) of a study (Banks et al., 2016). Consider also the power distance between the two groups of stakeholders: those involved in the decision to publish a paper (i.e., the reviewers and editors) may at least exert some influence on authors to provide (more) relevant information (Green et al., 2016; Pratt, 2008). The second group of stakeholders, the actual consumers of the published article, lack this option (Aguinis et al., 2010; Nair, 2020). Ultimately, though, both groups of stakeholders depend upon the transparency of a given article to appropriately interpret, appreciate, and (perhaps) approve its results by integrating them into the existing body of scholarly research via citations (Banks et al., 2016; Cook & Campbell, 1979).

Note that transparency as defined here refers to whether certain methodological procedures are reported in a paper (the realm of transparency), which does not judge what

these procedures look like (the realm of rigor). As such, an adequate level of transparency in reporting methods and data properties constitutes a necessary prerequisite for allowing readers to evaluate the rigor of a specific field study, and thus the validity of its findings (Aguinis et al., 2018; Cook & Campbell, 1979). To illustrate, consider a paper presenting the results of a quantitative field study: to operationalize transparency, we need to know whether the authors of this paper report reliability coefficients for the variables used. Assessing rigor would then entail evaluating the reported levels of variable reliability, which is beyond the scope of a study on transparency. In the following section we will outline the important features which should be reported in a paper. These features are all derived from existing guidelines or reporting standards (AERA, 2006; Aguinis et al., 2018; Hancock & Mueller, 2010; Sterba et al., 2011; Wilkinson, 1999).

Regarding quantitative field studies, features to be reported as mentioned by manuals and guidelines on reporting issues can be grouped in three major categories: (1) setting as well as practices of data collection, (2) properties of the collected data, and (3) data analysis and its results. For many features within these categories, we find certain quantifiable indicators, as well as predefined thresholds or rules of thumb. These thresholds are usually derived from statistical theory, or experience (or both), even though their use and specific values are not always consistent or well founded (Lance et al., 2006; Lance & Vandenberg, 2009; LeBreton & Senter, 2008). Regardless of such inconsistencies, the idea behind most of the features to be reported in quantitative field studies is clear -that is, to provide quantified information about the data collection, the dataset, and the data analysis, which can thereafter be compared to any predefined critical value in order to provide 'hard' evidence for the results' validity.

Reporting certain key features of the data collection process in quantitative field studies first of all serves the purpose of providing readers with information about the setting of the study (Wilkinson, 1999). This includes details on the business context in which the field study was conducted, such as the specific industry, geographical area, and time in which data was collected. Moreover, detailed information about the organizations from which the data were collected as well as the specific sample entities and respondents

targeted in data collection, is recommended to be reported here. Ideally, information on the study setting is accompanied by the rationale behind its selection and any underlying theoretical consideration. Other features in this category correspond to the actual data collection process, namely the report of details concerning circumstances (e.g., the response rate) and the method used to collect the data (Church, 2001; Weigold et al., 2013).

Reporting features related to data properties allows the evaluation of the realized sample (Wilkinson, 1999). Besides the details about the setting of the study, additional information about the attributes of the selected cases should be included in the article. For example, authors should mention the size and type of firms or teams, and the demographics of the respondents. This information is necessary to assess the representativeness of the sample and to allow a better interpretation of the results. Furthermore, features that provide information about the general properties of the data are expected to be reported here (Wilkinson, 1999). For instance, correlation tables showing interrelations between variables included in the study, descriptive data, information on the presence of outliers and missing data (Aguinis et al., 2013; Gibbert et al., 2021; Newman, 2014), as well as properties of the instruments used to measure the variables that allow the assessment of reliability and construct validity of the used measures (Hinkin, 1995) are to be included in the article.

The third category of features that are recommended for reporting in papers concerns information on data analysis and its results (APA, 2008; Sterba et al., 2011). This category includes all the information on the statistical analyses used to test hypotheses. This information constitutes the foundation of the conclusions drawn in the paper (Wilkinson, 1999) and is important for the assessment of the given interpretation of the study results. It is particularly important to provide confidence that the analyses have been executed rigorously so that appropriate conclusions can be drawn from these results (Cook & Campbell, 1979). This category also includes features such as reporting information on the use of control variables or error terms (Aguinis et al., 2010; APA, 2008; Bernerth & Aguinis, 2016).

Methodology

Sample

To address the above mentioned research gaps and to assess the state-of-the art of article transparency as well as its influence on scientific impact (i.e., article citations), we selected a representative set of management journals from which we could draw our sample of articles. In this study, we focused on a set of five top-tier management journals that publish articles reporting field studies. This selection is based on previous work rating the impact of management journals (Gomez-Mejia & Balkin, 1992; Podsakoff et al., 2005; Tahai & Meyer, 1999), as well as on recent statistics of journal impact ratings from the SSCI Journal Citation Reports. The journals were *Academy of Management Journal*, *Administrative Science Quarterly*, *Journal of Management*, *Organization Science*, and *Strategic Management Journal*.

In the next step, we manually searched through these journals for quantitative studies. This search covered the period from 1997 to 2016, which, on the one hand, represents a period long enough to provide the opportunity to control for or examine any time effects regarding the analyzed relationships. On the other hand, as per prior studies which suggested that a longer post-publication time period allows for the accumulation of citations (Walters, 2011), our sample time period also allows for meaningful analyses of article citation counts.

Following related prior research (Judge et al., 2007) and to achieve sufficient power for our statistical analyses, we selected 200 articles reporting quantitative studies, at an average of 40 per journal. This sample size provided sufficient statistical power for our design (Ferguson & Ketchen, 1999). For transparency of the research procedures employed here, an even more detailed description of the sampled articles can be found in Table 1.

Table 1: Sample Description

	Published Quantitative Articles
Academy of Management Journal	42
Administrative Science Quarterly	35
Strategic Management Journal	42
Organization Science	41
Journal of Management	40
Total	200

Interview study

To complement our quantitative empirical analyses and findings we conducted an interview study with 11 editors (associate editors, senior editors, and co-editors) from the selection of top-tier management journals presented above. Six out of these 11 interviews were conducted on-site, while five interviews were conducted via telephone. The interviews typically lasted between 20 and 35 minutes and have been voice-recorded and transcribed.

In the interview study, we followed a semi-structured approach. First, we asked the editors for aspects they considered most important to be reported in quantitative field studies. Second, we asked them for the most important aspects to be reported with regard to each stage in the research process (i.e., data selection, data collection, data analysis, presentation of results). We used this input for developing our selection of transparency features as explained below. Finally, we gave the editors the opportunity to express their general thoughts and opinions regarding the topic of transparency in the field of management. Following similar approaches of previous studies (e.g., Pratt, 2008), we used these statements for a better interpretation of our empirical findings and have integrated quotes of the editors' statements in the discussion section.

Measures and data extraction

Transparency

To identify a meaningful set of aspects that are expected for reporting quantitative field studies in management, we looked through manuals, textbooks, and journal articles on quantitative research methodology (e.g., Aguinis et al., 2018; APA, 2008; Cook & Campbell, 1979; Hancock & Mueller, 2010; Nosek et al., 2015; Sterba et al., 2011). From these sources, we created a list of features recommended for reporting quantitative field studies. For reality and relevance check, we then matched these features with those mentioned by the editors in our interview study and deleted those features that have not been mentioned as an important feature by at least one editor. The complete set of features relevant for transparent reporting of quantitative field studies resulting from this two-stage approach is shown in Table 2.

Table 2: Codes for Transparency of Quantitative Field Studies

Category	Transparency codes	Relevant literature
Data collection	1. Description of access to data provided	(AERA, 2006; Aguinis et al., 2018; APA, 2008; Church, 2001; Miller et al., 2013; Sterba et al., 2011; Stone & Shiffman, 2002; Weigold et al., 2013; Wilkinson, 1999)
	2. Rationale for data selection provided	
	3. Description of data collection approach provided	
	4. Details on study context provided	
	5. Voluntariness of participation mentioned	
	6. Response rate given	
	7. Formal definitions for all focal variables provided	
	8. All items used in the study provided	
	9. Source/development of scales and items mentioned	
Data properties	10. Details on sample provided	(AERA, 2006; Aguinis et al., 2013; Aguinis et al., 2018; APA, 2008; Atinc et al., 2012; Bernerth & Aguinis, 2016; Bliese, 2000; Gibbert et al., 2021; Hinkin, 1995; Newman, 2014; Wilkinson, 1999)
	11. Presence/absence of missing data indicated	
	12. Rationale for all control variables provided	
	13. Information on interrater reliability/agreement given	
	14. Descriptive statistics provided	
	15. Correlations between study variables provided	
	16. Variable reliability indicated	
	17. Presence/absence of outliers indicated	
Data analysis and results	18. Unit of analysis explicitly indicated	(AERA, 2006; Aguinis et al., 2018; APA, 2008; Cook & Campbell, 1979; Wilkinson, 1999)
	19. Standard errors or equivalent values given	
	20. One vs. two-tailed significance testing indicated	

To obtain the data on transparency, we extracted information about the features listed in Table 2. In line with our approach and definition of transparency, our primary concern in this regard was whether each of these features that could affect the results and conclusions of the field studies was reported fully and transparently. In contrast, we did not code what was reported (e.g., the specific values or rationales). Thus, all the codes relating to transparency represented dichotomous variables (yes/no), indicating whether the respective feature has been reported or not. For example, the item “Was the presence/absence of outliers explicitly mentioned?” was assigned with a score of 1 if this information was reported, and 0 if the authors did not report it.

In addition to coding the single transparency items, we calculated an overall transparency score for each article in our sample. It is important to note that the individual transparency items are not universally applicable to all field studies; some are conditional on the studies’ specific research designs. We therefore based the computation of the percentage of applicable features that were actually reported on each study’s specific research design. For example, in studies using multiple respondents from the same unit of analysis, such as teams, it is relevant to report the level of agreement between these representatives of the same entity, while this does not apply for studies using individuals as the focal units of analysis.

For further robustness checks of our results, we created two separate indices to measure the transparency of a paper. The mean index is a simple arithmetic mean of the relevant transparency criteria in each article. In contrast, the second index is a ‘robust index’, which we formulated via Item Response Theory (IRT) (De Boeck & Wilson, 2004; Foster et al., 2017). The theory is suitable to measure unobservable characteristics. In our case, we assume that transparency is not a directly observable characteristic and we measured it through observable indicators (i.e., our transparency criteria). Therefore, in IRT we predicted the probability that a paper will report a certain transparency criterion. To measure our latent variable transparency, we used the one parameter model (De Boeck & Wilson, 2004). Finally, we normalized the robust index to scale so that the values of

the index fell between 0 and 1, where ‘0’ represents ‘absence’ of transparency and ‘1’ represents full transparency. We normalized it by applying the min-max scaling.

Article impact

Impact of articles was operationalized by article citation counts, which represents the conventional and most frequently method used (Adam, 2002; Leung, 2007; Stremersch et al., 2007). We used the number of citations that accumulated for each article until May 2020. We utilize ISI Web of Knowledge for obtaining data on citation counts. All citation data was collected on the same day to avoid distortions due to the steady growth of citation counts.

Control variables

We controlled for the journal in which articles have been published, applying six dummy variables representing the journals in our sample (with Administrative Science Quarterly as the reference group). Moreover, in our analyses regarding the relationship between article transparency and impact, we included the core author and article attributes as specified in previous studies on related topics (e.g., Bergh et al., 2006; Jones et al., 2008; Judge et al., 2007) in all equations, since these attributes of authors and articles have been shown to be also directly related to article impact in prior studies (Bergh et al., 2006; Conlon et al., 2006; Haslam et al., 2008; Stremersch et al., 2007). Specifically, we included the following author attributes that might have an influence on how transparent an article is: Number of authors, gender of first author (coded 0 for male and 1 for female), gender ratio within the author team, and geographical location of first author’s affiliation using dummy codes for continents: North America, Europe, Asia, Oceania (with North America as reference group). With regard to the article attributes that might influence its transparency we incorporated the following variables in our models: Article age (number of years since publication), article length (number of pages), publication in special issue versus publication in a regular issue (coded 0 for regular issue and 1 for special issue), article type: research note versus regular article (coded 0 for regular article and 1 for

research note), and article position in the issue (coded 1 for first article in the issue and 0 for the rest). Finally, we included the quadratic term of article transparency in order to control for potential curvilinear effects that might otherwise bias the linear effects.

Coding

The articles in our sample were content analyzed and coded by multiple coders, two for each article. The coding procedure was as follows. First, a standardized coding scheme was developed. To facilitate intercoder agreement we ensured that all coders agreed on the coding scheme and clarified eventual disagreements. To further ensure standardization and reliability of the coding approach, each pair of coders checked and calibrated the coding after each individual coder coded 10 articles. To estimate the reliability of the coding process, we checked the level of agreement between coders in each pair. Initial agreements were high, 92.8% of codes were coded identically by the two coders. Resulting disagreements were discussed among the coders and the first author.

Analytic Strategy

Beyond the descriptive statistics provided to illustrate de facto reporting standards for each transparency aspect, we regressed article impact on the transparency index, along with the abovementioned author and article characteristics we controlled for. Since our dependent variable impact was a count variable (discrete) and was skewed to the left, and because our data had over dispersion, we used a negative binomial model for the regression analysis (Hilbe, 2011).

Results

Actual reporting practices

Table 3 shows the percentage frequency of each of the coded items in our sample. Identifying which features have been reported regularly versus which features are reported only rarely in field study articles illustrate the actual reporting practices in top management journals. The least frequently reported features are the presence/absence of outliers, the explicit mentioning of the unit of analysis and the voluntariness of study participation, and the discussion of the presence/absence of missing data. In contrast, six of our 20 codes have been mentioned in most papers (i.e., by more than 80%) and thus indeed seem to reflect common features for reporting. Specifically, these are the description of the data collection approach, details on the study context, the study's response rate, the provision of descriptive statistics and correlations, and the variable reliability indicators. A noteworthy observation among the correlations is the strongly significant negative correlation between article age and article transparency, which points to a strong tendency of increasing transparency over time.

Table 3: Reporting Frequency of Individual Codes (percentages)

Transparency codes/items	Yes
1. Description of access to data provided	69.5
2. Rationale for data selection provided	44.5
3. Description of data collection approach	88.9
4. Details on study context provided	85.5
5. Voluntariness of participation mentioned	24.0
6. Response rate given	86.5
7. Formal definitions for all focal variables provided	61.0
8. All items used in the study provided	60.7
9. Source/development of scales and items mentioned	69.7
10. Details on sample provided	72.0
11. Presence/absence of missing data indicated	26.5
12. Rationale for all control variables provided	60.1
13. Information on interrater reliability/ agreement given	61.5
14. Descriptive statistics provided	91.0
15. Correlations between study variables provided	88.0
16. Variable reliability indicator given	94.3
17. Presence/absence of outliers indicated	6.0
18. Unit of analysis explicitly indicated	20.5
19. Standard errors or equivalent values given	58.8
20. One vs. two tailed significance testing indicated	31.5

Table 4: Difficulty Parameters for each Transparency Criterion from IRT

	Coefficient	Standard errors	P>z
Discrimination parameter	0.503	0.061	0.000
Variable reliability indicator given	-5.805	0.911	0.000
Descriptive statistics provided	-4.800	0.741	0.000
Description of data collection approach	-4.338	0.673	0.000
Correlations between study variables provided	-4.146	0.646	0.000
Response rate given	-3.870	0.608	0.000
Details on study context provided	-3.700	0.586	0.000
Details on sample provided	-1.983	0.396	0.000
Source/development of scales and items mentioned	-1.766	0.379	0.000
Description of access to data provided	-1.731	0.374	0.000
Formal definitions for all focal variables provided	-0.943	0.322	0.003
All items used in the study provided	-0.927	0.323	0.004
Information on interrater reliability/ agreement given	-0.856	0.404	0.034
Rationale for all control variables provided	-0.817	0.336	0.015
Standard errors or equivalent values given	-0.748	0.314	0.017
Rationale for data selection provided	0.464	0.304	0.127
One vs. two tailed significance testing indicated	1.631	0.367	0.000
Presence/absence of missing data indicated	2.140	0.411	0.000
Voluntariness of participation mentioned	2.416	0.438	0.000
Unit of analysis explicitly indicated	2.837	0.482	0.000
Presence/absence of outliers indicated	5.691	0.884	0.000

For IRT, we report our difficulty parameters for each transparency criterion as shown in Table 4. The difficulty parameters show which transparency criterion was easier or harder to report. Negative parameters on a particular transparency criterion are easier to report, while positive parameter coefficients are difficult (or harder) to report. These results are consistent and therefore robust with our findings on percentage frequencies calculated for each transparency criteria (as shown in table 3). Moreover, all our pre-defined transparency criteria expect one (rationale for data selection), are significant. We do not remove this criterion to maintain consistency between items included in the mean index and robust index (created via IRT). However, to see if results hold without the significant criterion, we created a second robust index without the ‘rationale for data selection’. Our results do not change significantly.

Transparency and article impact

Finally, we examined the effect of article transparency on impact. The descriptive statistics and intercorrelations of variables included in the regression models are provided in Table 5. The mean transparency scores of papers in our sample is 0.598 for mean index and 0.658 for robust index. . We report two models, one for each operationalization of the transparency index. The results of the negative binomial models for the impact of transparency mean index and transparency robust index are presented in Table 6 and table 7 respectively. This means that the more transparent a paper, the higher its impact (i.e., the number of article citations received). Apart from minor differences, analyses based on the differently operationalized transparency index yielded similar results.

Table 5: Descriptive Statistics, Frequencies and Variable Correlations (n=200)

	Mean	SD	Freq	1	2	3	4	5	6	7	8	9	10
1. Transparency Mean Index	0.598	0.123	-	1.000									
2. Transparency Robust Index	0.658	0.153		0.981	1.000								
3. ISI Citations	218	303	-	-0.159	-0.144	1.000							
4. Gender (First author Female=1)	-	-	67	-0.058	-0.056	-0.022	1.000						
5. Number of Authors	2.58	1.05	-	-0.035	-0.032	-0.068	-0.050	1.000					
6. Female Ratio	0.327	0.372	-	-0.055	-0.055	-0.042	0.795	-0.062	1.000				
7. Article Age	13.5	5.780	-	-0.412	-0.388	0.394	-0.047	-0.136	-0.023	1.000			
8. Article Length	20.29	6.97	-	0.038	0.031	-0.027	0.047	-0.016	0.069	-0.052	1.000		
9. Article Position	-	-	20	0.030	0.039	0.023	0.011	-0.073	-0.014	0.095	0.135	1.000	
10. Special Issue	-	-	12	-0.007	-0.011	0.070	0.044	-0.079	0.061	0.205	-0.026	-0.014	1.000
11. Research Note	-	-	12	0.006	0.012	-0.028	-0.090	-0.099	-0.119	-0.037	-0.310	-0.084	0.025

Table 6: Negative Binomial Regression Results using Mean Index of Transparency

Article Citation (ISI)	Coefficients	Robust Std. Errors	P>z
Constant	1.957	0.879	0.026
Gender (First author Female=1)	-0.026	0.150	0.866
Europe (first author from Europe=1)	0.105	0.098	0.287
Asia (first author from Asia=1)	-0.032	0.199	0.873
Oceania (first author from Oceania=1)	-0.277	0.219	0.205
Number of authors	-0.124	0.054	0.023
Female ratio	-0.149	0.094	0.114
Article age	0.117	0.014	0.000
Article length	0.100	0.010	0.271
Article position	-0.172	0.170	0.312
Special issue	-0.156	0.054	0.004
Research note	0.157	0.248	0.527
Transparency index (arithmetic mean)	5.098	2.415	0.035
Transparency index² (arithmetic mean)	-3.757	1.990	0.059
Maximum h-index author	0.020	0.008	0.008
Top affiliation	0.087	0.124	0.480

Table 7: Robustness Check of Negative Binomial Regression Results using Robust Transparency Index

Article citations (ISI)	Coefficients	Robust Std. Error	P> z
Constant	2.249	0.688	0.001
Gender (First author Female=1)	-0.029	0.145	0.840
Europe (first author from Europe=1)	0.094	0.096	0.328
Asia (first author from Asia=1)	-0.020	0.197	0.919
Oceania (first author from Oceania=1)	-0.296	0.230	0.198
Number authors	-0.130	0.055	0.019
Female ratio	-0.144	0.092	0.118
Article age	0.115	0.014	0.000
Article length	-0.012	0.010	0.261
Article position	-0.181	0.171	0.290
Special issue	-0.157	0.057	0.006
Research note	0.144	0.245	0.557
Robust transparency index (IRT)	4.253	1.467	0.004
Robust transparency index² (IRT)	-3.079	1.289	0.017
Maximum H-index of author	0.021	0.008	0.007
Top affiliation	0.074	0.113	0.516

Discussion

De facto reporting practices

In this study, we scrutinized the transparency of research procedures reported in 200 quantitative field studies published in leading management journals. Our results point to considerable heterogeneity, depending on the aspects to be reported. Several of the coded aspects are clearly reported nearly by default, such as variable reliability metrics, response rates, correlations between study variables, and descriptive statistics. However, other coded aspects that are potentially important for assessing the rigor of a quantitative field study and its analysis tend to be mostly lacking, such as the indication of presence/absence of missing data or outliers in the data. However, even some of the more frequently reported features are so basic that one would expect them actually to be reported in any paper published in top journals, which, strikingly, is not the case in our sample. Consider, for example, that more than ten percent of the examined articles did not report the response rate of the field studies and the correlations between study variables. Both of these aspects are normally considered standard reporting aspects, as they are necessary to scrutinize and appropriately interpret presented empirical results.

In this sense, the present study makes a step towards the clarification of transparency standards for field studies in management by portraying the actual reporting practices in the discipline. During our interviews, most editors had generally stressed the importance of offering a degree of transparency that allows for replicating a field study, echoing recent calls in this direction (e.g., Banks et al., 2016; Goldfarb & King, 2016; Nosek et al., 2015; O'Boyle et al., 2014). However, it is important to note that the intention of our research is mainly reflective, mirroring actual practices in management field studies, and are not intended to be prescriptive or judgmental. We acknowledge that there are factors affecting transparency that are beyond the control of the authors of a paper. For instance, the journals have space constraints, which in turn put natural limits to an article's capacity to exhibit transparency elaborately. However, management journals are now increasingly providing authors the opportunity to include the statistics and other relevant

study information extensively through online web appendices. Therefore, the space constraints will be alleviated or at least considerably reduced in the near future, providing the authors more possibilities for transparent reporting without being weighed down by space constraints.

Our study will encourage and assist management article authors in this quest towards transparent reporting by providing some general guidelines for reporting. These reporting guidelines do not entail a rigid set of aspects to be mechanically reported in any field study. Relatedly, we acknowledge that too much transparency could also be an adverse trend. As an editor in our interview sample mentioned: “It is possible for people to overdo things as well. One can be ‘scientistic’, using methods for the sake of methods. This sort of overelaboration is not necessary.” Accordingly, our study intends to provide an evidence-based foundation for a much-needed discussion about the desired level of transparency rather than a rigid checklist for reporting quantitative management research. Our results could form the basis of research decision-making trees and help authors to account for contingencies with respect to the context and purpose of individual field studies.

Transparency ‘matters’: Transparent papers get cited more

Our results showed that reporting practices matter not only from an-ethical or a methodological perspective. Our analysis showed that the level of article transparency is related to article citation and therefore, could be included as an additional meaningful explanatory variable in studies on article impact. Our study contributes to literature by suggesting this feature, which has been missing from the literature on article impact in management so far (Bergh et al., 2006; Flickinger et al., 2013; Judge et al., 2007). These results are even more meaningful, given that our sample exclusively consisted of articles published in top-tier management journals, which have lower acceptance rates and are supposed to be of higher quality than the other journals. Logically, such high quality, top-tier journals are expected to publish very transparent articles. . However, despite this

potentially high level of general transparency in the top-tier management journals we sampled, we were still able to detect substantial effects. Specifically, we found direct effects of transparency on citation count that point to the importance of transparency for the decision to refer to field studies' results.

One explanation of this finding might be that a higher degree of transparency allows today's scholars to better evaluate whether the applied methods in older papers still comply with current standards of rigor and thereby facilitate citations. An elevated level of transparency might cause higher trust in the findings (Bråten et al., 2011; Nicolaou & McKnight, 2006), especially when one is not sure about past standards of rigor. This is mirrored by the statements of several editors in our interview study, who emphasized the pronounced role of transparency for creating trust with regard to a field study's findings (e.g., "the main criterion is to trust the results"). An alternative interpretation of this finding, however, could be that authors who are able to design field studies that have a high impact are not only able to offer important contributions that advance the theoretical state of the art, but also tend to go beyond current methodological standards and offer an elevated degree of transparency in reporting their studies. This might matter even more, given that our data suggest a trend of increasing transparency over the examined period of time that materialized in a negative effect of article age on article transparency, which implies that papers being more transparent in times characterized by lower levels of transparency might stand out more visibly in a crowd of publications. Thus, we can sum up that article transparency benefits citations. This knowledge might also provide an incentive to journal editors and reviewers to ensure high levels of transparency in papers reporting the results of field studies and thereby help in implementing appropriate procedures to guarantee these high levels of transparency (Nosek et al., 2015).

Questionable research practices or 'best' practices?

It is important to underscore that we do not intent to instrumentalize the inconsistent reporting practices and the strikingly varying degrees of transparency provided in the papers as a foundation to criticize the parties involved in the publication process, i.e., authors, reviewers, and editors. As Aytug et al. (2012) noted, unless there are established

and explicitly outlined reporting standards, as is the case in some other disciplines (e.g., Kilkenny et al., 2010; Lepage et al., 2001; Schulz et al., 2010) such as Bioscience, Medicine, or in methodological approaches such as meta-analysis (e.g., APA, 2008; Aytug et al., 2012; Kepes et al., 2013; Moher et al., 2009), one can hardly expect anyone to behave in accordance to such (absent) standards. Several of the editors in the interviews stressed this, underscoring that there are no common standards for reporting transparency in quantitative field studies in the management domain.

At the same time, precisely because the field of management studies at present suffers from underspecified reporting standards when it comes to transparency, the dividing line between ‘best’ research practices and academic misconduct, i.e., questionable research practices, is not clear (Banks et al., 2016). This leaves authors, editors, and ultimately readers unsure about how to best showcase their work in the short term, while fending off potential criticism in the longer term. While certain research practices may sometimes be questionable, the same research practices might turn out to be sound and valid depending on the specific conditions underlying the judgment calls for their application (Banks et al., 2016). In this twilight zone transparency plays a key role, as the reader can only make an informed evaluation if the necessary information is provided by the authors, disclosing the very conditions and the rationale that led them to their research practices (Simmons et al., 2011). Therefore, it is easily understandable why transparent reporting practices have been frequently promoted as the major preventative to questionable research practices (Banks et al., 2016; Miguel et al., 2014; Nosek et al., 2015; O’Boyle et al., 2014). Moreover, transparent reporting practices not only support the prevention and detection of questionable research practices and help the audience of an article to better evaluate its rigor and interpret its results, they can also safeguard authors from wrongful allegations of inappropriate research practices, by offering authors the opportunity to explain the judgment calls behind their research practices. Thus, the classic finding from communication research also holds in the case of academic management research, namely that transparent communication prevents (unjustified) rumors (DiFonzo & Bordia, 1998; Schweiger & Denisis, 1991). On the way towards defining reporting standards in management field studies, and ultimately increasing the quality and integrity

of management research, our article is intended to serve as a catalyst, by offering a starting point and a first roadmap in this direction. In this regard, however, the results of our analyses also paint a positive picture of our field. We not only show that the level of transparency has increased over time, but also that self-controlling mechanisms act on the demand side of the research at least to some extent, as evidenced by the more transparent papers getting cited more frequently.

Limitations

The analyses in this paper bear several limitations that might stimulate future research. First, we examined papers from five top management journals published during two decades (1997–2016). While this represents a substantial time period to study developments over time which is in line with prior research on related topics (e.g., Bergh et al., 2006; Judge et al., 2007), still longer time periods might be desirable to test for longitudinal effects and to get a more complete picture of transparency in field studies. Secondly, we focused on some journals that have been consistently considered as top-tier outlets in management, particularly for the period under study (Podsakoff et al., 2005; Tahai & Meyer, 1999). Future researchers can replicate this study with other sets of top, middle, and lower tier -management journals, to check whether our results would change depending on the specific sample journals. To minimize any such journal-specific biases in our results we had controlled for this aspect in all our regression models, recognizing that we cannot completely rule out sample-specific findings. Despite these limitations, we believe that our analyses provide an evidence-based starting point for developing appropriate reporting standards for quantitative field research in management and stimulate a constructive discussion on how they should look like.

Finally, our article was unable to account for the role that the review process play on the transparency of a paper. We tried to minimize this effect by interviewing editors; nonetheless, we do acknowledge that this issue is more nuanced, as the level of transparency for a published paper is strongly affected by the review process. Therefore, future studies can investigate this by interviewing the authors of the articles as well as the reviewers of the focal journals.

Chapter II*: Designing for Impact: The Effect of Rigor and Case Study Design on Citations of Qualitative Case Studies in Management

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***Award:**

Gibbert, M., Nair, L.B. & Hoorani, B.H. (2018) Received the Best Paper Award in the Research Methodology division at the *British Academy of Management*.

Journal:

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Abstract

One of the most highly cited papers in management is Eisenhardt's (1989) work on building theories from case study research, where she highlights the importance of multiple case study design versus a single case study. We focus on this distinction between multiple and single cases, and find that this classification crudely captures the reality of research designs in published articles. By proposing a new empirical classification of case study design, we investigate the interrelationships between rigor and case study design on article impact for qualitative case study research, published in top management journals during the period 1996-2006. We find that, unlike quantitative research, more rigorous studies are not cited more for qualitative research. Instead, we find that case studies using a replication logic either in single cases (e.g., comparing different teams in one organization) or multiple cases (e.g., comparing single teams in multiple organizations) are more rigorous and also more impactful than cases who do not use a replication logic. Our finding makes important contributions to scientrometric research by discussing criteria under which different case study designs can be rigorous and impactful.

Key words: case study, rigor, replication logic, qualitative research, citations

Introduction

Eisenhardt's (1989) paper on building theories from case study research in *Academy of Management Review* is well-known for its distinction into multiple versus single case study designs. In fact, it is one of the most highly cited papers in the management discipline (over 50000 citations on Google scholar), and by a large margin is the most highly cited paper on qualitative methods. It therefore comes to no surprise that case study research is considered the most popular qualitative research method in the field of management (Welch et al., 2013, Tsang 2014), and has provided the field with its most ground-breaking insights (e.g., Burgelman, 1983; Chandler, 1990; Doz, 1996; Penrose, 1960; Pettigrew, 2014). However at the same time the case study method, more than any other method, has attracted concerns regarding rigor (e.g., Bettis et al., 2014; Gibbert et al., 2008; Piekkari et al., 2009). This is worrying since a lack of rigor will affect the impact of a study's results (Bergh et al 2006; Scandura & William, 2010). In this chapter, we examine the links between case study design (i.e., research design), rigor (i.e., quality of a research), and impact (i.e., citation counts).

We focus on impact as the main outcome variable since one of the key goals of any research publication is to be highly cited. This is because citations play a significant role in evaluating the reputation of a researcher, academic department, and journal (Aguinis et al., 2014; Judge et al., 2007; Mingers & Xu, 2010). As a result, we have seen increasing scientometric interest in factors driving article citations across different disciplines (see Meyer et al., 2018 for accounting; see Hamermesh, 2018 for economics; see Haslam et al., 2008 for psychology; see Stremersch et al., 2007 for marketing). In management, scholars have exhibited a rising interest in understanding drivers of article citations (see Mingers & Xu, 2010; Ronda-Pupo, 2017). For example, Bergh et al (2006) looked at factors affecting citation count of quantitative articles published in *Strategic Management Journal* (Bergh et al., 2006). In the *Academy of Management Journal*, we have seen two editorials that explore factors that drive article citations in management research (Conlon et al., 2006; Judge et al., 2007); and more recently Nair & Gibbert (2016) looked at title characteristics that drive citation counts in management. However, none of these studies focus specifically on qualitative case study research, and hence we do not

know if the established rigor-impact link from quantitative research (Bergh et al., 2006) generalizes to qualitative research.

To understand the interrelationships between rigor and case study design on article impact for qualitative case study research, we apply content analysis on 173 qualitative case study articles published from 1996 until 2006 in *Academy of Management Journal*, *Administrative Science Quarterly*, *Organization Science*, and *Strategic Management Journal*. We then apply ordinary least squares and logistic regressions, with the aim of understanding the role of different rigor criteria and case study design on impact. As a result of our analysis, our study makes important contributions by offering a new empirical classification on case study design and also discusses seven key rigor criteria that can make qualitative case study designs more rigorous and impactful.

Multiple vs Single Case study Designs

Case study research is a qualitative method used for theory building, theory testing, and theory refinement (Bartunek et al., 2006; Eisenhardt & Gaebner, 2007; Gibbert et al., 2008; Ragin & Schneider, 2011; Szulanski & Jensen, 2011; Voss, Tsikriktsis & Frohlich, 2010). In this study, we define case study research as a method that uses multiple data sources to develop a contextualized understanding of the phenomenon with the intention of confronting theory by comparing it with empirical data (Piekkari et al., 2009). Therefore a case is seen as the unit of analysis, since it is the study's object of interest (Fletcher & Plakoyiannaki, 2011).

A widely established way to categorize case study design is multiple versus single case study design. Yin's (2009) well-known typology further classifies case study research into four designs (single holistic, single embedded, multiple holistic and multiple embedded). Single holistic design denotes the situation when there is only one case; whereas in a single embedded design there are also sub-cases within the case of interest. These sub-cases are also known as embedded units. The same logic extends to multiple holistic and multiple embedded designs, the only difference being that here there is more than one case to be analyzed.

In management, case study research as a method gained traction after

Eisenhardt's (1989) seminal paper on "Building Theories from Case Study Research". In this paper, she asserts the usefulness of multiple case study design over single case study design. This is because multiple case study design allows for 'replication' (Eisenhardt, 1989; Yin, 2009). Replication is a process in which a researcher selects more than one dissimilar or/and similar cases for cross-case comparisons (Yin, 2009). Although she acknowledges the usefulness of single embedded designs (Eisenhardt, 1989), in her later papers on case study research, she reasserts her belief that multiple case study designs are inherently better than single case study designs (Eisenhardt, 1991; Eisenhardt & Graebner, 2007; Gehman et al., 2017).

Therefore in this study we further probe this classification of multiple versus single case study designs, in light of published qualitative case study papers.

Criteria to Assess Case Study Rigor

Rigor is an important aspect of research, because it ensures that a study's results and claims represent a sound basis for further elaboration in the research community. Therefore higher transparency on rigor allows for 'replicability' of results (Aguinis & Solarino, 2019). Despite its acknowledged importance there is a lack of consensus on criteria that lead to rigorous qualitative research (Morse et al., 2002). Paradigmatic differences, especially between 'positivists' and 'interpretivists', have led to disagreements surrounding certain rigor criteria (especially external validity) that are seen as inappropriate for evaluating different qualitative approaches. Eventually Lincoln & Guba (1985) suggest a new set of rigor criteria (credibility, transferability, dependability, and confirmability), which they refer to as 'trustworthiness'. However, Morse et al (2002) highlight that despite paradigmatic differences there is considerable overlap between the different components of rigor and trustworthiness. Furthermore more recently, an editorial note in the Academy of Management Journal (Eisenhardt et al., 2016) identifies a number of important commonalities in qualitative research concerning rigor. The editorial note proposes three broad criteria for assessing rigor. The first criterion is providing a detail explanation of the constructs and their relationships

backed by data and logical reasoning. The second criterion is rooting the analysis in ‘compelling data’, and the third criterion is providing rich and novel theoretical insights. Nonetheless, lack of consensus still prevails as evident from a recent symposium held at the Academy of Management Meeting in 2016. In the symposium, notable experts in qualitative research discussed their view on qualitative research, and each scholar held very different views on how qualitative research should be conducted (Gehman et al 2017).

Therefore, pluralism clearly is an asset to qualitative research (Gehman et al., 2017), and coincidentally the debate on pluralism helpfully suggests important commonalities when it comes to criteria concerning rigorous qualitative research. Our rigor criteria are based on such previous studies which have identified broad common categories for rigor (Morse et al., 2002; Eisenhardt et al., 2016), along with other method papers (Cook and Campbell, 1979; Denzin, 2017; Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Eisenhardt et al., 2016; George and Bennett, 2005; Gibbert et al., 2008; Gibbert & Ruigrok, 2010; Lincoln & Guba, 2005; Yin, 2009) from which we propose seven common rigor criteria, which are necessary to undertake irrespective of the paradigmatic camp that the researcher belongs to. These rigor criteria are: indicating and providing the rationale for selecting the case and sub-cases clearly, providing a rationale for data selection, doing data triangulation, identifying focal and non-focal constructs, and discussing the context of the case (see Table 8), which we explain below.

Table 8: Criteria for Rigorous Case Study Designs

Rigor criteria ^a	Description ^a	Rationale ^a	Examples
Giving rationale for selecting the case(s).	Using ‘purposeful sampling’ to select information rich case(s) that can provide meaningful theoretical insights.	To establish that the case is indeed suitable or appropriate to provide valid information on the phenomenon of interest.	<i>“We constructed a two-by-two cell design to explore effects of stronger/weaker scientific evidence and the degree of innovation complexity on spread pathways....We undertook theoretical rather than random sampling, choosing a pair of innovations in all four cells, giving us a total of eight cases.”</i> (Ferlie, Fitzgerald, Wood and Hawkins, 2005)
Clearly indicating case and sub-cases.	Clearly label the object(s) or case(s) under scrutiny.	Enables within or between case comparisons. It also ensures that reader can appreciate the empirical basis of emerging theory.	<i>“The SBU was selected as the unit of analysis because of its centrality in the product innovation process.”</i> (Brown & Eisenhardt, 1997)
Providing a rationale for data selection.	Providing a reason for selecting data from a particular data source and in a particular time period.	Ensures that the study is using compelling data for theory building, which makes the theoretical insights and claims more convincing.	In the study conducted by Bansal and Roth (2000) they justify the use of archival data by stating that <i>“This information served to confirm the reliability of the interviewees’ responses and permitted more directed and detailed probing in the interviews.”</i>
Data Triangulation	Collecting data from multiple sources (e.g. interview transcripts, archives, field notes).	Enables validation and verification of theoretical insights and claims.	<i>“In collecting data for this study, we sought to obtain information both broad and deep enough to ensure a rich accumulation of data from which to draw inferences. To this end, we collected data from multiple sources, including in-depth inter-views, participant observations, and archival documents.”</i> (Bansal and Roth, 2000)
Identifying focal and non-focal constructs.	Explanatory factors as well as expected outcomes to be clearly indicated and explicitly labeled. This also includes a discussion on non-focal constructs (i.e. constructs that are not of interest but might have an effect on the phenomenon of interest).	Allows to unravel causal processes and mechanisms that leads to rich and novel theoretical insights or claims for theory building.	The model linked customer demands and technological innovation. The causal construct here was “customer demands”. The outcome was “technological innovation” or “disruptive architecture” (Christensen & Bower, 1996).
Providing details of case study context.	Illustrate and explain the context that might not be directly relevant to the emerging theory.	Ensures the selection of suitable case(s) and also enhances transferability of the findings to other similar cases.	The authors provide detailed contextual information about the three teams they observed (Cco, Ico, and Hco). The details include physical condition of the offices, team composition, nature of work, and various kinds of software engineering tasks that each team undertook (Perlow, Okhuysen, & Repenning 2002).

^a The information provided for the column headings rigor criteria, description and rationale were informed by the following sources (Cook and Campbell, 1979; Denzin, 2017; Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Eisenhardt et al., 2016; George and Bennett, 2005; Gibbert et al., 2008; Gibbert & Ruigrok, 2010; Lincoln & Guba, 2005; Morse et al., 2002; Yin, 2009)

1) Rationale for selecting the case and indicating the case(s) and sub-cases(s) clearly:

John Stuart Mill pointed out that “we can either find an instance in nature suited to our purpose, or, by artificial arrangement of circumstances make one.” (Mill, 1875, p. 249). Since case study research by definition precludes manipulation, the emphasis here is on ‘finding’ the right case(s). Furthermore case study research designs are based on a small number of cases which are sampled purposefully (rather than randomly). Under ‘purposeful sampling’ only cases that will provide rich information on the phenomenon of interest are selected (Coyne, 1997; Palinkas et al., 2015; Patton, 2002; Suri, 2011). This is an important rigor criterion, because a case that is well selected will lead to meaningful theoretical insights and contributions (Cuervo-Cazurra et al., 2016; Eisenhardt & Graebner, 2007). Furthermore, only the right case(s) (and sub-cases or embedded units) will allow for “illuminating and extending relationships and logic among constructs” (Eisenhardt & Graebner, 2007, p. 27). It is therefore important that a case study article clearly relays the reasons behind the selection of the case(s) and sub-cases. Furthermore, while providing the rationale for selecting the case is important, mentioning the case(s) and sub-cases explicitly is also important as it helps to determine the case study design of the research (Yin, 2009).

2) Rationale for data selection and data triangulation:

Scholars in the qualitative community agree that it is extremely important to discuss the rationale behind data collection. This helps to confirm that the themes and theoretical insights emerging from case study research are in fact “grounded in compelling data” (Eisenhardt et al., 2016, p. 1120). In particular, the researcher should discuss the rationale for selecting similar or different data sources and how it adds to the theoretical understanding of the phenomenon. This also extends to justifying the time period for which the data is collected. Once the time frame and data sources have been justified the next step is to triangulate the data sources (Eisenhardt, 1989; Denzin, 2017; Yin, 2009). Data triangulation is an important rigor criterion as it can either lead to the convergence

of existing theoretical insights or to the generation of new theoretical insights.

3) Identifying theoretical constructs:

In case study research, while some case study designs are more explanatory than exploratory (e.g., Gerring, 2007a), a common denominator is that the main theoretical constructs and their emerging relationships are explicitly illustrated and explained. This allows for new and rich theoretical insights (Eisenhardt et al., 2016). Therefore it is important to clearly relay the theoretical constructs, which includes an explanation of main focal constructs (the cause and outcome). It also includes an explanation of constructs that are not in the forefront of theoretical attention but can affect the phenomenon under investigation. We call such constructs as non-focal constructs.

4) Providing contextual information on the case:

Finally, precisely because the boundaries between case and case study context are sometimes not clearly evident, providing relevant details about the context of the case(s) is needed. This is because understanding the context helps to determine the suitability of the methodological choices (Bettis et al., 2014; Buchanan & Bryman, 2007; Michailova, 2011). It also provides a more nuanced understanding of the phenomenon. Furthermore, the provision of contextual detail allows for ‘theoretical generalization’ (Yin, 2009), which allows for theories to extend to other case(s) that are contextually similar. Therefore, from a rigor standpoint providing details of the case study context is necessary.

Factors Affecting Impact (Article Citations)

Numerous studies, in different fields, have tried to identify factors that affect scientific impact, largely because citations are used as a measure to appraise the reputation of a researcher, journal and even academic department (Aguinis et al., 2014; Cole and Cole, 1972; Judge et al., 2007).

The literature classifies factors that affect article citations into two broad categories namely the ‘particularistic perspective’ and ‘universalist perspective’ (Judge et al., 2007; Meyer et al., 2018; Stremersch et al., 2007). According to the ‘particularistic perspective’, citations are driven by the reputation and other characteristics of the author(s). Therefore a more reputable author will be cited more, a phenomenon that has also come to be known as the ‘Mathew effect’ (Merton, 1968).

On the other hand the ‘universalist perspective’ states that an article is cited because of its content. Therefore the quality of the research will determine whether the article is cited more or not. For example, Bergh et al. (2006) found that for quantitative studies published in *Strategic Management Journal*, methodological rigor attributes have a direct impact on citations. Furthermore other studies have also confirmed the impact of different ‘approaches’ and ‘method types’ on article citations (Haslam et al., 2008; Stremersch et al., 2007). In light of the ‘universalist perspective’ we want to explore the effect of rigor and case study design on citations of qualitative case study articles, which has not been explored before. This therefore motivates the following two research questions of our study;

RQ1: What is the impact of rigor criteria and case study designs on article citations in qualitative case study research articles?

RQ2: How does the reporting of rigor criteria differ between case study designs?

Methodology

We select all qualitative case studies which were published in four top management journals during the period 1996–2006: *Academy of Management Journal*, *Administrative Science Quarterly*, *Organization Science*, and *Strategic Management Journal*. Following prior studies on rigor and scholarly impact (e.g., Gibbert et al., 2008; Gomez-Mejia & Belkin, 1992; Podsakoff et al., 2005; Pratt, 2008; Tahai & Meyer, 1999), we use purposeful sampling to select these journals, with the rationale that top management journals proxy best research practices. Our reason for looking at articles published in the field of management is to control for disciplinary context. Furthermore we select the period from 1996 to 2006 because, first of all, it is long enough to construct a good sample of qualitative articles. Secondly, since citations occur slowly in the field of social sciences (Bergh et al., 2006; Walters, 2011) this sample is old enough for the articles to have accumulated citations.

To identify articles using case study research from among these journals, we follow the criteria set forth by a previous study on case study rigor (Gibbert et al., 2008). In particular, we perform a search involving keywords: *qualitative*, *case study*, *grounded theory*, *triangulation*, *archival data*, *interview*, *observation*, *coding*, *theoretical sampling*, and *ethnography*. We exclude articles which use both qualitative and quantitative methods simultaneously (mixed methods articles).

For each article we compile the sum of citations and the *h-index* from the Web of Science during mid-August 2017. We collect the citation and *h-index* information for all articles on the same day. We then compile a candidate list of articles, which includes the author names, year of publication, *h-index* of the authors, gender of the first author, location base of the first author, proportion of female authors to the author team, journal name, and article citations. Our final sample consists of 173 articles, in which 40 article are from *Academy of Management Journal*, 39 article are from *Administrative Science Quarterly*, 68 article are from *Organization Science*, and 26 article are from *Strategic Management Journal*.

Coding rules

In this study, we use the technique of content analysis. This technique focuses on textual analysis and its meaning (Hsieh & Shannon, 2005; Nair, 2018). In our first round of coding (Strauss & Corbin, 1998; Patton, 2002), we use the well-known classification of single versus. multiple case study designs each of which can be either holistic or embedded (Yin, 2009). As we refine our coding approach, we see that this distinction crudely captures the reality of case study designs in published articles. This is because single embedded designs in terms of analysis bears striking similarities to articles using multiple cases, as both use a ‘replication logic’ for comparative inference.

For example, as shown in table 9, Tripsas and Gavetti (2000) investigate a single case that is Polaroid, and uses replication within the case to compare three different phases (sub-cases or embedded units) to understand how Polaroid shifted from analog to digital imaging. Similarly, Schweizer (2005) uses replication to select five cases to compare successful and unsuccessful deals. On the contrary replication is missing in articles that use single holistic design because these papers use a ‘process tracing’ logic for inference and therefore are void of any comparative analysis. For example, Burgelman’s (2002) conducts an in-depth study of Intel during the tenure of a CEO (Andy Grove).

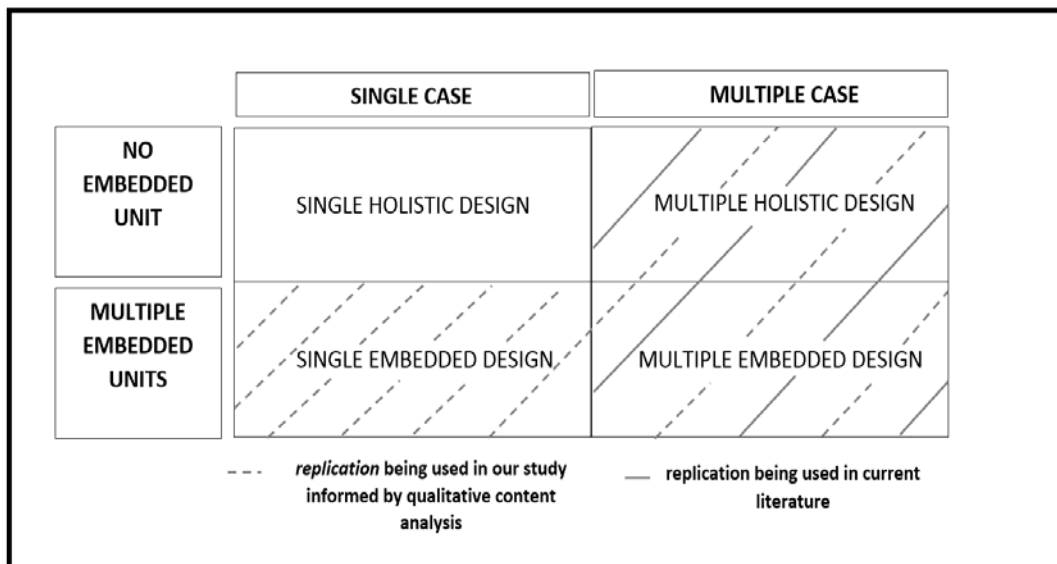
Table 9: Exemplars of Case Study Designs (Replication and Non-Replication)

#	Reference	Case study design	Research question/focus
1	Schweizer (2005)	<i>Replication</i> design: there are five polar cases, i.e. successful and unsuccessful biotech and pharmaceutical company MandA deals.	How (is) a biotech company integrated into a pharmaceutical company which is seeking to gain access to the former's technology, innovative capabilities and know-how?
2	Tripsas and Gavetti. (2000)	<i>Replication</i> design: One company (Polaroid), but with three different phases (sub-cases) illustrating how it shifted from analog to digital imaging, as well as the corresponding changes in the outcome variable (organizational capabilities and adaptation).	How does managerial cognition affect the adaptive intelligence of organizations?
3	Grant (2003)	<i>Replication</i> design: Ten similar cases, i.e. vertically integrated, diversified, large multinational (oil and gas) companies in a turbulent environment.	(How) do companies perform strategic planning in increased environmental turbulence?
5	Brusoni and Prencipe (2006)	<i>Non-replication</i> design: One organization (Pirelli tires), no sub-cases.	How does new knowledge enable technological and organizational evolution?
6	Burgelman (2002)	<i>Non-replication</i> design: Longitudinal study of a company (Intel) during the tenure of a CEO (Andy Grove).	What are the implications of extraordinary success and co-evolutionary lock-in for organizational adaptation?

Using this insight from our first round of coding session, we contend that while replication logic in the literature is typically used for multiple case study design (Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Yin, 2009), it can also extend to single embedded case study. This is because replication is happening within the case, in which comparison is being done within the case (i.e., between sub-cases or embedded units). From this perspective replication can occur either on the level of the case (as in a multiple holistic design), on the level of the embedded unit of analysis (as in a single-embedded design), or both (as in a multiple embedded design). On the other hand, the single holistic design is the design with no replication as there is only one case.

Therefore in our study, any case study design that compares more than one (sub-) case by default is using a *replication* logic. Thus irrespective of whether there is one or several cases, we have a *replication* design as long as at least two (sub-) cases are being compared. Hence we believe that this empirical classification of design, *replication* and *non-replication*, better captures the reality of case study designs in published articles, see figure 3.

Figure 3: The difference in the usage of the term replication in our study and current literature



Furthermore, we use prior studies to operationalize concrete rigor criteria (Cook & Campbell, 1979; Denzin, 2017; Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Eisenhardt et al., 2016; George & Bennett, 2005; Gibbert et al., 2008; Gibbert & Ruigrok, 2010; Lincoln & Guba, 2005; Morse et al., 2002; Yin, 2009). In total we have seven codes to assess rigor of a qualitative case study paper (see Table 3). In light of previous studies, we use dichotomous codes, which means that if an article reports a particular code it is marked 1, otherwise it is marked 0 (Bergh et al., 2006; Gibbert et al., 2008; Gibbert & Ruigrok, 2010; Nair & Gibbert, 2016). Furthermore a binary coding scheme ensures objectivity when assessing the disclosure of the rigor criteria.

Following Gibbert et al. (2008), we read and code the whole article (rather than just the methods section). This is necessary since some authors either present their methodology in the appendix (this practice is common, for instance, in *Organization Science* articles prior to 2000), or discuss considerations in other sections of the article (e.g., many authors discuss generalizability issues in the limitations section).

Overall, two researchers independently code 173 articles. This leads to two individual coding sheets, after which we compare our codes. To ensure inter-rater reliability of the coding process, we use a consensus coding approach, which leads to a final consensus coding sheet. Overall, pre-consensus inter-rater agreement is high at 87.9 percent (Larsson, 1993; Burla et al., 2008).

In table 10, code 1 captures whether an article clearly motivates the selection of the case that is provides a clear rationale for selecting the case. Code 2 captures whether authors indicate clearly the case(s) and sub-cases (if any). Codes 3 and 4 capture, respectively, whether articles provide a rationale for data selection and perform data triangulation. Code 5 captures whether the article identifies the focal constructs, and code six captures whether articles identify non-focal constructs. Code 7 measures articles that explicitly discuss and provide rich contextual information on the case(s). Code 8 and 9 capture case study designs, in which code 8 applies to *non-replication* design, and code 9 pertains to *replication* design.

Table 10: Frequency count of codes on rigor criteria and case study designs

Codes on rigor criteria and case study designs	Frequency of the code when it is present in non-replication design articles	Frequency of the code when it is present in replication design articles
Code 1: Rationale for selecting the case(s) given	13	82
Code 2: Case and sub-cases clearly indicated	21	78
Code 3: Rationale for selecting the data given	30	107
Code 4: Data triangulation	33	108
Code 5: Focal constructs identified	6	40
Code 6: Non-focal constructs identified	2	58
Code 7: Details on case study context given	39	108
Code 8: Non-replication design	58	0
Code 9: Replication design	0	115

Ordinary Least Squares Regression

To understand the impact of rigor and case study design on article citations, we run a simple ordinary least squares regression (OLS). The outcome variable for this regression is the sum of citations until mid-August 2017. To reduce the skewness of citation counts it is log-transformed (Conlon et al., 2006; Dezsö & Ross, 2012; Manning & Mullahy, 2001).

In accordance with prior studies, we include in the regression individual rigor criteria and case study design (Haslam et al., 2008; Conlon et al., 2006; Bergh et al., 2006; Judge et al., 2007; Meyer et al., 2018; Mingers & Xu, 2010; Stremersch et al., 2007). We control for the productivity of the author by using the *h-index*. We calculate the *h-index* of the author during mid-August 2017 from Web of Science. If there are multiple authors, we use the highest *h-index*. Additional control variables are number of authors, gender of the author, ratio of female authors in the author team, journals (captured as dummy variables), and article age. After running the regression we rerun the regression with regional controls (i.e., the location base of the first author), which were *North America*, *South America*, *Europe*, *Asia* and *Oceania*. The interpretation of our results with the inclusion of regional variables did not change much from the previous results. Our OLS model is represented by the following equation.

$$\text{Log(Citation)}_i = \delta_0 + \delta_1 CD_i + \sum_{k=2}^8 \delta_k RS_{ki} + \sum_{m=9}^j \delta_m Z_{mi} + \varepsilon_i$$

δ_0 is the intercept. CD_i is the dichotomous variable capturing case study design (i.e., *replication* versus *non-replication*) and RS_{ki} are the seven individual rigor criteria for the individual articles. Z_{mi} are controls of the model. For the model without regional controls $j=16$, since there are eight controls in the model, which are three dummy variables for journal (Organization Science as the base journal), four additional author characteristics variables (h-index, gender, number of coauthors, female ratio), and article age. For the model with regional controls $j=20$, since there are 12 controls in the

model, which are three dummy variables for journal (Organization Science as the base journal), four regional variables (North America region as the base), four additional author characteristics variables (h-index, gender, number of coauthors, female ratio), and article age. ε_i is the error term.

Logistic regression

Our results from the OLS show that none of the rigor criteria have a direct impact on citations, whereas case study design does. We now investigate whether reporting different rigor criteria differ significantly between *replication* and *non-replication* designs, and identify whether rigor has any indirect effect on citations through case study design for which we run a logistic regression.

Logistic regression belongs to the family of generalized linear models, and is most suitable when the outcome is a qualitative binary variable. Since our outcome variable y_i is a dichotomous variable on case study design, a simple ordinary least squares regression would not serve our purpose as it will ignore the “discreteness of the dependent variable” and would not “constrain predicted probabilities between 0 and 1” (Cameron & Trivedi, 2005: 464). We, therefore, model the probability (π) of case study design being *replication* on the rigor codes from one to seven.

$$\pi = \Pr [y = 1 | x] = F(x'\beta)$$

x is a regressor vector (8 x 1). It includes the rigor criteria, which are codes one to seven, and the constant term. β is a vector (8 x 1) of unknown parameters. $F(.)$ is the cumulative distribution function of the logistic distribution.

Results

We find that mean citation count of articles present in our sample is high that is 252.76. However, we also see high level of variability since the standard deviation is 256.93 (See Table 11). We run a simple ordinary least squares using STATA version 14 (see Table 12). We find our dichotomous case study design variable to be significant ($p=0.011$), whereas on average the citation count of articles using a *replication* design is 66.53 percent higher than those using a *non-replication* design. The *h-index* is also highly significant ($p=0.002$), where one unit increase in the *h-index* leads to an expected increase of citations by 3.05 percent. Number of co-authors is highly negatively significant ($p=0.005$), where an increase in one coauthor leads to an expected decrease of citations by 24.61 percent. Furthermore, gender of the first author (female =1) is positively significant ($p=0.019$), where on average citations for female author is 62.74 percent higher than a male author.

Table 11: Descriptive statistics for citation, author's h-index and rigor scores

Variables	Mean	Standard deviation
Citation ^a	252.76	256.93
$\log(\text{citation})$	5.08	1.01
h-index ^a	16.01	10.14

^a Web of Science

Table 12: Results of ordinary least squares

	<i>log (citation)</i>			<i>log (citation)</i> <i>Robustness Checks</i>		
	Coefficient	Standard error ^a	p-value	Coefficient	Standard error ^a	p-value
Case Study Designs	0.51 **	0.195	0.011	0.504 **	0.197	0.012
Rationale for selecting the case(s) given	0.12	0.18	0.497	0.146	0.184	0.430
Case and sub-cases clearly indicated	0.08	0.18	0.66	0.090	0.184	0.625
Rationale for selecting the data given	-0.08	0.23	0.73	-0.108	0.245	0.660
Data triangulation	0.07	0.28	0.82	0.092	0.300	0.759
Focal constructs identified	-0.31	0.177	0.09	-0.314	0.182	0.087
Non-focal constructs identified	-0.22	0.17	0.20	-0.244	0.176	0.168
Details on case study context given	0.21	0.27	0.43	0.257	0.274	0.350
h-index (WoS)	0.03 ***	0.01	0.002	0.025***	0.008	0.003
Number of co-authors	-0.22 ***	0.08	0.005	-0.254***	-0.087	0.004
Gender of the first author (Female=1)	0.487 **	0.204	0.019	0.480*	0.221	0.032
Article age	0.010	0.025	0.734	0.005	0.026	0.838
Ratio of female authors in the team	-0.474	0.270	0.082	-0.484	0.281	0.086
Journal dummy variables	<i>Included</i>	<i>Included</i>	<i>Included</i>	<i>Included</i>	<i>Included</i>	<i>Included</i>
Regional dummy variables	-	-	-	<i>Included</i>	<i>Included</i>	<i>Included</i>
Constant	3.946***	0.508	0.000	4.079***	0.549	0.000
Observations	173	173	173	173	173	173

^a Robust standard errors

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 13: Results of binary logistic regression

Codes on rigor criteria	Case Study Designs					
	Coefficients	Standard errors ^a	p-value	Odds ratio	Standard errors ^a	p-value
Rationale for selecting the case(s) given	0.901**	0.451	0.046	2.463**	1.111	0.046
Case and sub-cases clearly indicated	0.448	0.454	0.324	1.566	0.712	0.324
Rationale for selecting the data given	1.488***	0.573	0.009	4.426***	2.537	0.009
Data triangulation	0.908	0.603	0.132	2.478	1.495	0.132
Focal constructs identified	0.909	0.622	0.144	2.482	1.544	0.144
Non-focal constructs identified	2.365***	0.821	0.004	10.65***	8.738	0.004
Details on case study context given	0.248 2	0.866	0.775	1.281	1.110	0.775
Constant	-2.757***	0.912	0.003	0.063***	0.058	0.003
Observations	173	173	173	173	173	173

^a *Robust Standard errors*

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Regarding rigor, we find that none of the individual rigor criteria have a significant impact on article citations. To confirm our results, we run a separate regression with regional controls, however the interpretation of our results do not change (see Table 12). In light of this, we suspect that case study design (*replication* and *non-replication*), which has a significant positive impact on citations, might in fact differ on the disclosure of different rigor criteria. To understand this, we run a logistic regression analysis. Table 13 reports both the coefficients and odds ratio for the logistic regression. The coefficients give us a sense of the relationship (i.e., negative or positive) that different rigor criteria share with case study design, while the odds ratio allows for a better comprehension of the effect that rigor has on different case study designs.

As shown in table 13, we find that the odds of providing a rationale for selecting the case is 2.463 times higher in a *replication* design than in a *non-replication* design (keeping all other covariates fixed). However, we see no reporting differences between *replication* and *non-replication* design articles when it comes to indicating the case. Furthermore we find that the odds of providing a rationale for selecting the data sources is 4.426 times higher for *replication* design articles than *non-replication* design articles (keeping all other covariates fixed). However our results do show that there are no reporting differences between *replication* and *non-replication* design articles when it comes to indicating data triangulation.

Furthermore regarding the theoretical constructs we find no reporting differences between *replication* and *non-replication* design articles when it comes to indicating focal constructs. However we do find significant differences in reporting non-focal constructs, where the odds of discussing non-focal constructs is 10.646 times higher in *replication* than *non-replication* design articles. Finally we find no reporting differences between different case study designs when it comes to providing the details of the context.

Overall, we find significant reporting differences between *replication* and *non-replication* design, in which *replication* design articles are doing better at reporting explicitly the rationale for selecting the case, rationale for selecting the data, and identifying non-focal constructs.

Discussion

The objective of this study is to understand the relationship of rigor and case study design on scientific impact (citations) for qualitative case studies. Our results show three key findings that have several theoretical implications.

First, we find that the existing case study design classification of multiple versus single case study design crudely captures the reality of case study designs in published articles. In particular, we find that single embedded design is very similar to multiple designs. This observation is striking because the debate on case study research, in management and also in political science, has always been between multiple versus single case study designs, where multiple case study design are seen as the superior design than single case study designs (Eisenhardt, 1989; Eisenhardt, 1991; Eisenhardt & Graebner, 2007; Gehman et al., 2017; Gerring, 2004; Gerring, 2007a). Therefore, we contend here that the debate on design is not so much about single versus multiple, but is about *replication* and *non-replication* that rests upon the logic of inference. A *replication* design adopts a logic of comparison for inference. On the other hand, *non-replication* design is interested in a more nuanced contextualized understanding of the phenomenon, which is void of comparison (Dyer & Wilkins, 1991; Siggelkow, 2007). Therefore, we argue that our alternative empirical classification of design, *replication* and *non-replication*, better captures how case study designs are being treated in published articles. Furthermore unlike the current debate where multiple case study designs are pitched against single case study designs, we advocate for more pluralistic designs where the merits of each design should rest on rigor. This is because each design offers a unique inferential lens to understand the phenomenon of interest, and this can play a significant role in developing scientific knowledge.

Second, unlike quantitative articles (Bergh et al., 2006), we find no direct causal relationship between rigor and article citations for qualitative case study papers. Intuitively it seems that more an article reports the different rigor criteria the more it will be cited. However, we find no such relationship which means that in terms of garnering citations, an article that is more transparent on different rigor criteria will not be cited more

than an article which does a poorer job at disclosing these actions. This is problematic, primarily because higher disclosure on rigor should signal a higher quality of research. However this is not translating to higher citations, something which researchers in the quantitative camp tend to benefit from. In light of this finding, we might infer that consumers of research are not valuing the quality of qualitative case study articles, since articles that discuss rigor criteria more, are not being cited more. However the other more probable reason is the lack of general agreement on the evaluation criteria of what constitutes a high 'quality' qualitative article. Even though the literature may suggest otherwise (as our article is able to identify generic rigor criteria for qualitative case study articles), there is a possibility that this lack of agreement in qualitative research prevents a direct relationship between rudimentary rigor criteria and citations from materializing.

Furthermore, in light of the fact that the reputation of the author (i.e., the *h-index*) plays an important role when it comes to citations, this finding that rigor has no direct impact on citations can be problematic for researchers who are in the early years of their academic career. This is because in academia citations play an important role in determining the reputation of the author as the expert in the field (Aguinis et al., 2014). From this standpoint aspiring academics, early in their career, may not garner as many citations even if they do a better job at discussing the different rigor criteria of their article. This can have serious and unfair consequences in getting promotions and securing tenure tracks. This might also discourage doctoral students from pursuing a career in qualitative research. Moreover researchers might pay less attention to the quality of their research thereby stifling meaningful scientific knowledge-creation from qualitative research.

Therefore in this regard, journal editorial boards and reviewers can play a crucial role at bridging and propagating foundational rigor criteria that would be acceptable to all, by introducing special issues and more editorial notes that can address this matter in greater detail. While we do not suggest that there should be a boilerplate template, we can all agree that there are certain aspects of qualitative case study methodology that needs to be discussed. Therefore, even beyond disagreement with regard to individual rigor criteria, agreement on foundational rigor criteria is important, because in due time it will allow more rigorous case study articles to be cited more. In this spirit our study suggests to report the

seven rigor criteria identified in this study, which includes reporting the rationale for selecting the case(s), indicating the case(s) and sub-case(s), indicating the reason for data selection, triangulating the data, identifying focal and non-focal constructs and finally indicating the context of the case. Both researchers and reviewers can use these seven rigor criteria to conduct and evaluate qualitative case study research.

Third, we find in this study that *replication* design is being cited more than *non-replication* design. Without further probing, one could reach to the wrong conclusion that *replication* design is being unduly favored more as a design. However upon investigating which criteria of rigor are significantly being over or underreported for the two designs; we find that *replication* design is doing a better job than *non-replication* design. This is alarming, since one would expect that there should be equal reporting of all rigor criteria for both designs. However, we find that *replication* design articles are being more explicit when it comes to indicating case selection, data selection, and non-focal constructs than *non-replication* design articles. This lack of disclosure on different rigor criteria from *non-replication* design articles might in fact be the reason why these articles are being cited less.

Starting with case selection, one cannot stress enough the importance of this rigor criterion when compared to other rigor criteria. For most researchers it is the first step or decision that a researcher has to make when conducting a case study research. It would be an understatement to say that case selection is the ‘foundational stone’ for ensuring the rigor of a qualitative case study article. This issue becomes even more relevant for *non-replication* design as they contain just one case. Therefore, to be able to discern whether the case is indeed well selected, indicating the rationale behind the selection of the case becomes imperative.

Furthermore, *non-replication* articles lag behind *replication* articles when it comes to giving an explicit reason for selecting the data. It is surprising as to why *non-replication* design papers are not being more explicit about this rigor criterion, because this rigor criterion ensures that theoretical insights of the study are indeed grounded in data that has been carefully and well selected (Eisenhardt, 1989; Eisenhardt et al., 2016; Gibbert et al.,

2008; Gibbert & Ruigrok, 2010).

Lastly, *non-replication* design papers are also being less explicit on indicating non-focal constructs than *replication* design articles. A probable reason could be that *replication* design papers are concerned about ‘theoretical generalizability’ where theoretical explanations on the constructs are offered so as to be able to transfer findings onto other similar cases (Tsang, 2014). Hence this might be a reason why *replication* articles tend to discuss non-focal constructs more than *non-replication* articles. Nonetheless, discussing non-focal constructs is necessary for both designs to establish the validity of theoretical insights and claims. Not being explicit about non-focal constructs could seriously harm one of the main aims of qualitative research (including case study research) which is “to make a contribution to a specific research conversation or open a new one by providing fresh insights not easily discernible from existing theoretical and empirical work” (Eisenhardt et al., 2016, p. 1121). Furthermore since *non-replication* design is better suited for unravelling causal mechanism and in understanding the process (Blatter & Haverland, 2012), explaining clearly all constructs of the study becomes essential. Therefore, while we find no direct relationship of rigor criteria on citations, we do find that it has an indirect impact through case study design.

Here we want to acknowledge that we do recognize some limitations of our study. First our study focuses only on top tier journals. While our intention is to proxy best research practices by including high impact factor journals, it would be interesting if future studies can extend this analysis to middle or lower tier journals. Secondly, our study looks exclusively at the management field. Our reason for looking at articles published in the field of management is to control for disciplinary context. However future studies can expand disciplinary scope to better understand the factors that drive article citations for qualitative research. Third, our article could not account for the review process, and its role on the disclosure or non-disclosure of a particular rigor criterion. Therefore future studies can expand this analysis by interviewing authors, reviewers and editors to understand better the role of the review process on the reporting of different rigor criteria.

Conclusion

In the field of scientometrics, the discussion revolves largely around what drives article citations for quantitative research. In this regard, our study moves the conversation towards qualitative research, by understanding the interrelationships between rigor and case study design on article impact for qualitative case study research.

By proposing a new empirical classification for case study design (i.e., *replication* and *non-replication*), we side with previous researchers who suggest that new scientific discoveries will only happen when the research community will accept pluralistic designs (Folger & Turillo, 1999; Welch et al., 2011; Welch & Piekkari, 2017). However, at the same time, we also contend that pluralistic designs will only be accepted more if papers transparently report rigor. From this perspective, researchers, editors and reviewers can use the set of rigor criteria proposed in this study when conducting or evaluating qualitative case study research. At the same time, we strongly urge both academicians and editorial boards to further refine and expand the set of rigor criteria proposed in this study, so that the research community can agree on foundational rigor criteria. We contend that such an agreement will not only promote pluralistic designs but will also make them impactful.

Part II: Understanding Pluralism

Chapter III*: Towards Two-Level Selection Strategies for Theorizing from Single Case Study Research

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Abstract

Qualitative case-study research follows a purposeful (rather than random) sampling strategy. Just what the ‘purpose’ behind sampling is, that is *how* cases get selected by authors practising qualitative research is not well understood, however. We focus on an extreme scenario, where authors select only one single case in 300 papers published in *Organization Studies*, *Organization Science*, *Academy of Management*, *Administrative Science Quarterly*, and *Strategic Management Journal* between 1999 and 2019. We find 102 papers that feature several sub-units of analysis within the case (e.g., multiple teams in the same organization). Unfortunately, few authors motivate their selection strategies on the case-level, let alone on the sub-unit level. Authors that do relay their selection strategies on both levels use different criteria. On the case level, criteria such as selection on constructs, context, and convenience of data-access provide for ‘in-depth’ insight, whereas the sub-units are selected to allow for a comparative logic based on differences or similarity between sub-units, to propose a process, or to undertake variance-based theorizing. Such comparisons, by design, are not possible at the case level. In light of these practices, we propose a ‘two-level selection’ framework with the aim of promoting pluralistic case selection strategies allowing scholars to leverage the single case study research even more rigorously and transparently for theoretical advancement and discovery.

Keywords: Single case study research; case selection; embedded case study; methodological pluralism

Introduction

Case study research is a popular qualitative method for theory building (Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Siggelkow, 2007; Welch et al., 2013; Yin, 2009) that has led to pioneering works in the field of management research (e.g., see Burgelman, 1983; Chandler, 1990; Doz, 1996; Lüscher & Lewis, 2008; Penrose, 1960; Pettigrew, 2014). The single case study method, in particular, is considered promising for exploratory analysis (Yin, 2009), unpacking complex causal relationships (Blatter & Haverland, 2012; Dyer & Wilkins, 1990; Gehman et al., 2017; Siggelkow, 2007), understanding the context of the phenomenon (Dyer & Wilkins, 1991), for falsification (Flyvbjerg, 2006; Ragin, 1992; Taleb, 2007) and to theorize about phenomena that are inherently extreme or rare (Eisenhardt & Graebner, 2007; Siggelkow, 2007; Yin, 2009).

Unfortunately, despite its importance for generating rich and even ‘interesting’ insights (Dyer & Wilkins, 1991; Siggelkow, 2007), it continues to be among the least-well understood designs (Piekkari & Welch, 2018), and has even been criticized for not being rigorous (Achen & Snidal, 1989; Eisenhardt, 1989; Eisenhardt, 1991; Gehman et al., 2017; Goldthorpe, 1997; King et al., 1994). At the heart of this issue is case selection, which plays a vital role in ensuring the rigor of results (Cook & Campbell, 1979; Cuervo-Cazurra et al., 2016; Geddes, 1990; Seawright & Gerring, 2008). The inferential power of a single case study rests quite literally ‘by design’ upon *the* case that the researcher selects, since different cases may lead to different insights (Ragin, 1992; Rihoux & Ragin, 2008). As Geddes (1990) aptly reminds us “the cases we choose determine the answers we get” (p. 131). Therefore, without a clear understanding of how a researcher selects the case, one is hard-pressed to determine the reliability and suitability of conclusions reached (Cuervo-Cazurra et al., 2016; Eisenhardt & Graebner, 2007; Gerring & Cojocaru, 2016). Hence, transparently relaying case selection strategies is fundamental for ensuring the soundness of results (Fletcher & Plakoyiannaki, 2011; Gerring & Cojocaru, 2016; Gibbert et al., 2008; Herron & Quinn, 2016).

While the methodological literature has for decades acknowledged the importance of case selection strategies (Cook & Campbell, 1979; Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Eisenhardt et al., 2016; Fletcher & Plakoyiannaki, 2011; Geddes, 1990;

Gerring & Cojocaru, 2016; Miles et al., 2014; Patton, 2002; Seawright & Gerring, 2008; Yin, 2009), we currently know very little about how authors practicing case-study research put these strategies into action (Fletcher et al., 2018). Ironically, analysis of case selection ‘in action’ is absent where it would appear to matter most, namely for the single case study method. An interesting aspect of this design is that it comes in two variants. The first is where there is only one case, also known as a single holistic design for in-depth theorizing (Dyer & Wilkins, 1991). The second is where in addition to the one case, there are also sub-units (or embedded units) within the case, also known as single-embedded design (Yin, 2009). Such sub-units allow for comparisons (Gehman et al., 2017) among similar or dissimilar sub-units beyond the in-depth insight the case as a whole affords. So are the comparisons accounted for when it comes to selecting sub-units? Put differently, are selection strategies different on these two levels of analysis? If so, how are they different, and what are the current selection practices on either level?

To answer these questions, we investigate all single case study papers (N=300) published between 1999-2019 in *Organization Studies*, *Organization Science*, *Academy of Management*, *Administrative Science Quarterly*, and *Strategic Management Journal*. Apart from the case level, we find 102 single case study papers that also theorize on sub-units (or embedded units) present within the case. Therefore, our analysis provides two critical insights. First, authors that do motivate selection at the case level tend to do so mainly around three criteria, which are selection on *constructs*, *context*, and *access*. In contrast, for the sub-unit level papers motivate selection on *different sub-units*. Second, more than a quarter of papers in our sample (i.e., 80 papers) do not provide any reason for case selection; and about half (45 papers) of these so-called single-embedded case study articles (Yin, 2009) do not offer any clear explanation for how sub-units within the case are selected. To say this is problematic is an understatement since not only the case but also the sub-unit level (if and where applicable) would appear to be instrumental for theorizing.

By disentangling different selection practices ‘in action’ for one method (the single case study) but on two levels of analysis, we contribute to the methodological pluralism literature (Brannen & Doz, 2010; Buchanan & Bryman, 2007; Cornelissen, & Höllerer,

2019; Delbridge & Fiss, 2013; Easterby-Smith et al., 2008; Gehman et al., 2017; Gephart, 2004; Grodal et al., 2020; Kellert et al., 2006; Knudsen, 2003; Piekkari et al., 2009; Piekkari & Welch, 2011; Pratt et al., 2019; Welch et al., 2011; Welch et al., 2013; Welch & Piekkari, 2017). For the first time, therefore, the present article attempts to differentiate two levels of selection strategies. In particular, while case selection for the single holistic design would be sufficient on only one level (the level of the case), we propose instead that for the single-embedded design it should occur on two levels (i.e., at the level of the case and within the case). In the spirit of methodological pluralism, our conceptual framework does not prescribe a set of selection criteria on either level. We instead contend that researchers should transparently discuss whatever criteria s/he uses for selecting the case including the sub-units within that case to ensure rigorous insights. We hope that such an inclusive understanding will allow future researchers, practitioners, and students to better and more rigorously leverage the single case study method for theoretical advancement and discovery.

Theoretical Background

Single Case Study Research

Case study research is “a research strategy that examines, through the use of a variety of data sources, a phenomenon in its naturalistic context, with the purpose of ‘confronting’ theory with the empirical world” (Piekkari et al., 2009, p. 569). In the last decades, case study research has gained much traction (Ravenswood, 2011), making it an extremely popular qualitative method (Welch et al., 2013). In particular, single case study research is a viable method to investigate and explore interesting, rare, inaccessible, or complex phenomenon with a drive to develop context-driven explanations (Dyer & Wilkins, 1990; Eisenhardt & Graebner, 2007; Gehman et al., 2017; Hartley, 2004; Haverland & Blatter, 2012; Siggelkow, 2007). Some scholars also see great value in the single case study method for falsification (Flyvbjerg, 2006; Ragin, 1992; Taleb, 2007; Yin, 2009), and even theory testing (Lervik, 2011; Szulanski &

Jensen, 2011).

Moreover, case study research comes in different case study designs. For the single case study research, Yin (2009) identifies two designs, which are single holistic and single-embedded designs. A single holistic design has only one main unit of analysis, which is the case itself; whereas the single-embedded design, has one main unit of analysis and sub-units (or embedded units) within the case, from which theory building is possible. These sub-units can be spatial (e.g., different teams in the same organization) or temporal (e.g., the same organization studied at different periods). As such the presence of sub-units within the case allows for comparisons via ‘replication’, that is, the selection of dissimilar (also known as theoretical replication) or/and similar units (also known as literal replication) for cross-unit comparisons allowing for theory confirmation and even disconfirmation (Eisenhardt, 1989; Yin, 2009).

Case Selection (Qualitative Sampling Strategies)

Case selection is the use of a qualitative sampling strategy to select a case for theorizing (Gerring & Cojocaru, 2016); and is seen as a fundamental steps when conducting case study research, primarily because empirical conclusions are being built on the selected case (Fletcher et al., 2018). Therefore, the aim is to select a case(s) that can provide maximum insights into the phenomenon of interest (Fletcher et al., 2018; Fletcher & Plakoyiannaki, 2011; Patton 2015; Yin 2009), which will ensure the development of rigorous insights (Cook & Campbell, 1979; Cuervo-Cazurra et al., 2016; Fletcher et al., 2018; Geddes, 1990; Seawright & Gerring, 2008).

In qualitative research, many selection techniques are available to select a case(s) (Elman et al., 2016; Fletcher & Plakoyiannaki, 2011). For example, Seawright and Gerring (2008) suggest nine different case selection techniques: *typical*, *diverse*, *extreme*, *deviant*, *influential*, *crucial*, *pathway*, *most-similar*, and *most-different*. A well-known technique of selection is *purposeful sampling* (Patton, 2002). *Purposeful sampling* aims to select ‘information-rich cases’ to ‘purposefully fit’ the study's aim

(Patton, 2002). Under the umbrella of *purposeful sampling*, *theoretical sampling* is another selection technique, in which the theory acts as a compass for selecting ‘informational rich’ cases (Eisenhardt, 1989; Glaser & Strauss, 1967; Strauss & Corbin, 1998). Another form of selection strategy is *convenience sampling*, which selects a case(s) that is most easily accessible, for example, the geographical proximity of the case (Patton, 2002). Welch et al. (2016) also suggest four strategies for selecting cases, *most likely case sampling*, *least likely case sampling*, *sub-group sampling*, and *paired comparison* with the aim of concept reconstruction. More recently, Fletcher et al. (2018) have suggested two types of sampling strategies for case study research: *theory* and *phenomenon* driven case selection strategies. While a *theory-driven selection* strategy resorts to an existing theory for selecting the case, the latter strategy draws on the phenomenon itself. This methodological proliferation of case selection strategies is mainly to find an information-rich case(s), which is central in ensuring rigor (Coyne, 1997; Cuervo-Cazurra et al., 2016; Eisenhardt & Graebner, 2007; Patton, 2002).

In this regard, while there is a growing understanding of case selection in general, what is less well-understood are selection strategies specifically for the single case study and in particular on the two levels of analysis. In this regard, we currently do not know anything about the actual practices undertaken by researchers who publish single case study research in organization studies and management research. Hence, this chapter's following research question seeks to understand the selection for different single case study designs published in top organization studies and management journals.

RQ: How do papers, in top organization studies and management journals motivate the selection of the case and, where applicable, of sub-units in single case study research?

Methodology

Data Collection

To understand the complexity of selection for single case studies in the field of organization studies and management, we select 300 papers from top-tier outlets: *Organization Studies*, *Organization Science*, *Academy of Management*, *Administrative Science Quarterly*, and *Strategic Management Journal* in the period from 1999 to 2019. We use these journals because previous methodological research papers have used these journals (Bergh et al., 2006; Gibbert et al., 2008; Gibbert & Ruigrok, 2010). Furthermore, these journals appear in Financial Times (FT) top 50 leading management journals. Therefore, we can assume that papers published in these journals represent best practices of organization studies and management research that have undergone rigorous evaluation. Furthermore, the selection of a long period is in line with previous methodological studies (Piekkari et al., 2010; Welch et al., 2011; Yang et al., 2006), primarily because it fully captures research practices and trends.

To create our sample of single case papers, we perform a keyword search of ‘case study’ for the selected journals. The search returns 469 papers for *Organization Studies*, 339 papers for *Organization Science*, 296 papers for *Academy of Management Journal*, 185 papers for *Administrative Science Quarterly*, and 162 papers for *Strategic Management Journal*. We manually check all 1451 articles.

We classify single case study papers when authors specifically and explicitly classify their papers as a single case. Furthermore, we exclude multiple case studies, ethnography, mixed methods, and studies that use quantitative data analysis. We also exclude research notes, essays, and commentaries. Thus in total, we have 300 papers in our final dataset.

Identifying sub-units (or embedded units) within the case

While many papers were not explicitly forthcoming about their case study design, in the initial stages of data analysis, we realize the presence of sub-units (or embedded units) within the case. Yin (2009) defines these as units that are lower level

than the main unit of analysis. This insight is important as it challenges the notion that case selection for the single case study research is a 'single decision', which exclusively centers at the case's level.

To identify sub-units (or embedded units), it is essential to differentiate sub-units from units of observation (or also known as empirical units). Unit of observation is where data is collected (Fletcher & Plakoyiannaki, 2011), and it differs from sub-units (or embedded units) on three fundamental aspects. First, sub-units (or embedded units) and the case are the main objects of concern, which is not the case for the unit of observations. Second, unlike the unit of observation, sub-units (or embedded units) are of interest to researchers from a theorizing perspective (Fletcher & Plakoyiannaki, 2011; Yin, 2009). Finally, since sub-units (or embedded units) contain units of theoretical interest, the paper will likely discuss these units beyond data analysis, whereas a unit of observation may only appear in the analysis phase of the article (Fletcher & Plakoyiannaki, 2011; Gerring, 2007a; Yin, 2009).

Using the above reasoning, we apply three criteria to determine sub-units (or embedded units) by looking whether (i) the paper explicitly mentions sub-units (or embedded units) in the research question(s), or the aim of the paper (ii) the paper explicitly reports these sub-units (or embedded units) in the finding or result section (iii) the paper discusses them explicitly in the discussion section. If any two of these three criteria are satisfied, we classify the paper as having sub-units within the case (i.e., it is a single-embedded case study). For example, Huybrechts and Haugh (2018) want to understand networks' roles in institutionalizing new hybrid organizational forms. In the 'finding' section, the authors identify three periods. The paper then discusses these three periods at length in the discussion section, in which the paper also proposes a process model. As such, we classify these three periods as sub-units (or embedded units). Finally, if an article explicitly positions itself as a 'single-embedded design' or indicates 'temporal bracketing' or 'within-case comparison', we classify it as a single-embedded case study. Applying the logic above, we find that 102 papers in our sample have sub-units (or embedded units) within the case.

Analytical Approach

We employ qualitative content analysis (Kracauer, 1952; Kuckartz, 2014), one of the many techniques in qualitative research that focuses on textual analysis and its meaning, with the primary intent of creating categories for a large amount of text. We first begin our qualitative content analysis inductively. We read papers with an open coding approach (Patton, 2002; Strauss & Corbin, 1998) to answer the simple exploratory question: ‘how do papers motivate the selection of the case?’ The primary focus at this stage is to select passages discussing case selection. We write memos where needed (Strauss & Corbin, 1998), and it is in this phase, we recognize the presence of sub-units (or embedded units). This insight made us revise our exploratory question to ‘how do papers motivate the selection of the case and sub-units within the case?’

We inductively interpret the text on selection at the case level and sub-unit level within the case. Our open coding allows us to generate first-order codes, which provides an initial understanding of the selection criteria both at the case and sub-unit level. In the next step to better conceptualize the emerging patterns, we collapse the first order codes into second-order codes (Gioia et al., 2013; Strauss & Corbin, 1998). This exercise leads us to the following eight second-order codes for case-level selection: the *presence of focal constructs*, *atypical case*, *typical case*, *reputation of the case*, *context suitable to study the phenomenon*, *unique context*, *access to data*, and *difficult access*. Whereas, for the sub-unit level, we find *comparing differences among sub-units* as a second-order code. This coding process is very iterative, in which we go back and forth between our data and our analysis.

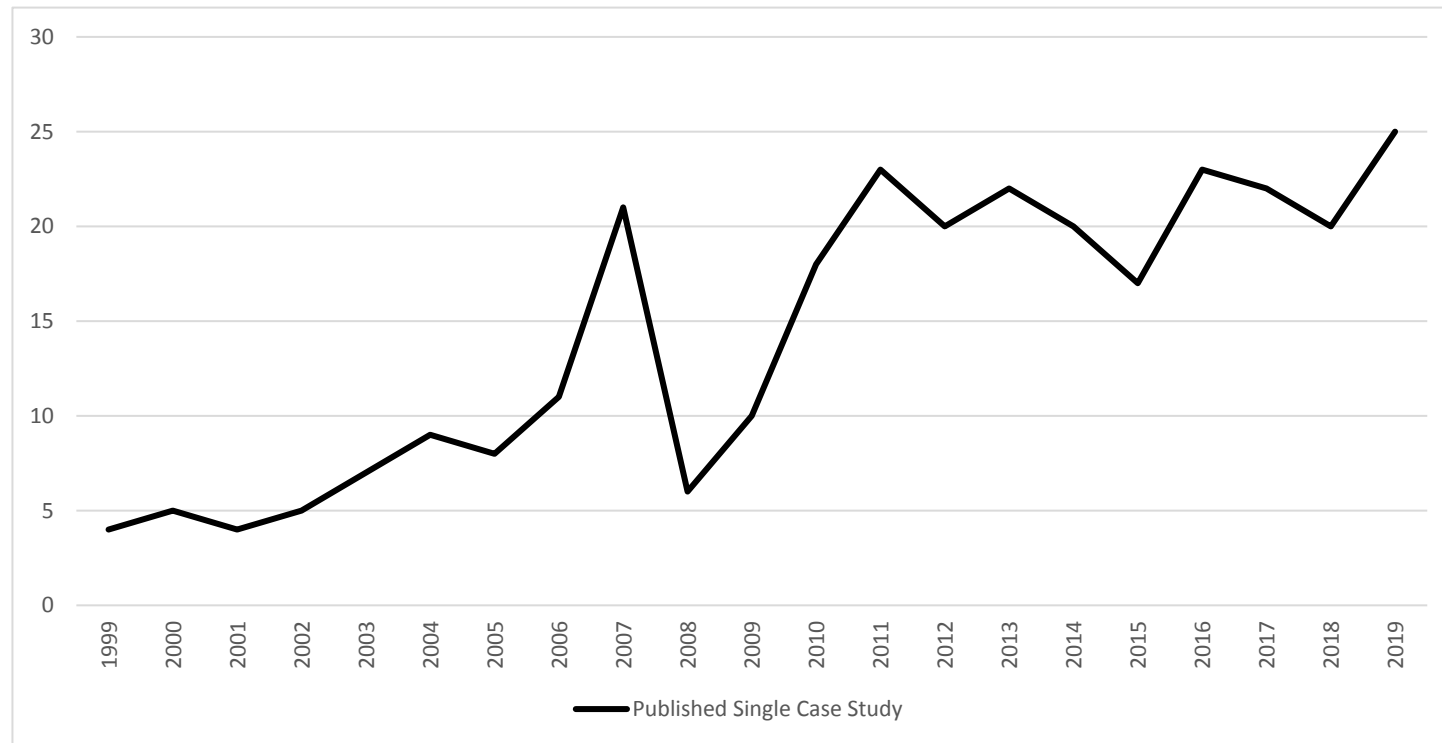
In the last step, we group the second-order themes into emerging categories (Cornelissen, 2017; Gioia et al., 2013; Miles & Huberman, 1994; Patton, 2002; Strauss & Corbin, 1998), which are case selection on the *construct*, *context*, and *access*. For the sub-unit level, we find selection of sub-unit selection on *different sub-units*. To ensure validity, we (the two authors) read papers separately and met to discuss our interpretations to resolve disagreements.

Results

This section discusses the different insights that emerge from our analysis of selection at the case and sub-unit level for single case studies published in highly ranked organization studies and management journals. Figure 4 shows the number of single case study papers published from 1999 until 2019 (as shown by the solid black line) that has been increasing rapidly. In 1999 top-tier organization studies and management journals published only four single case study papers, compared to 25 single case study papers in 2019. This rising trend is promising, in which *Organization Studies* has published 160 papers, *Organization Science* has published 55 papers, *Academy of Management* has published 45 papers, *Administrative Science Quarterly* has published 17 papers, and *Strategic Management Journal* has published 23 papers from 1999 until 2019.

Beyond the rising acceptance of the single case study research, we also find more than quarter of articles (i.e., 80 papers) that do not provide any clear reason for case selection in our sample. Moreover, around half (45 papers) of single-embedded case study design (Yin, 2009) do not provide any explicit reason for the selection of sub-units. In the subsequent sub-sections, we explain the selection criteria for the case and sub-units that emerged inductively. The objective here is to highlight the widely used selection strategies and to move beyond these conventional selection practices.

Figure 4: Trend of Published Single Case Study Papers



Three Criteria for Case Selection

In our inductive phases, we categorize reasons provided by papers for selecting the case into three criteria. These are selection on *constructs*, *context*, and *access*. These categories are not exclusive; therefore, some papers use more than one criterion to justify the case's selection.

The dominant criteria are selection on *constructs*, with 198 of 300 (66%) papers using it as one reason for selecting the case. The second criteria is *context*, with 87 of 300 (29%) papers using it as a reason for choosing the case. The third category is *access* with 47 of 300 (15.66%) papers using it as a reason for selecting the case.

(i) Selection on Constructs

Selection on *constructs* is the dominant category that emerges. The second-order codes, which we collapse into this category, are the *presence of focal constructs*, *atypical case*, and *typical case* (see Table 14).

Papers that use the *presence of focal constructs* mainly highlight that the case is an appropriate site, instrumental, revealing, illuminating, and transparently observable because the case has the focal constructs. For example, Tomlinson (2005) is trying to understand the construction of partnership meaning among actors. To understand this, he selects an 'appropriate' case study of refugee resettlement in the UK, where the focal constructs are present.

"An appropriate site to study these questions is one where partnership is actively promoted but where differences among stakeholders are perceived as problematic. The field of refugee resettlement within the UK represents such a site, and a specific partnership project was selected as a case study from within this field." (p 1174)

Another example is Elsbach (2003) in which the paper explores how non-territorial work environments threaten employees' workplace identities. To address this,

Goldtech is chosen as the case for 'theoretical reasons' because the focal constructs are present. Similarly, Erkama and Vaara (2010) are interested in understanding rhetorical strategies and organizational negotiations. They select 'Carrus' primarily because it is a revealing case, where the focal constructs are present.

On the other hand, papers that select an *atypical case* highlight that the case is extreme, rare, or unique on the theoretical constructs. For example, Dalpiaz et al. (2016) are trying to understand how organizations combine conflicting institutional logics to pursue new market opportunities. For this, they justify the selection of Alessi because it is an "extreme case" that is "well-suited for addressing our research question" (Dalpiaz et al., 2016, p 350). Similarly, Vuori and Huy (2016) want to understand the influence of 'shared emotions' on the 'innovation process'. They select an extreme case because such a case is suitable to understand the constructs of interest.

"This case allowed us to develop a deeper understanding of the emergence of shared emotions during the innovation process and their influence on innovation because it represents an extreme case for theory building." (Vuori & Huy, 2016, p. 3)

Finally, papers that select a *typical case* do so because the case is generalizable or representative. For example, Bijlsma-Frankema et al. (2015) explore the development of distrust. To understand this, they select a typical case, which is 'not an outlier' and allows for theoretical generalizability.

"The site offered favorable conditions for the study.... Because the organization itself was not an outlier in any discernable way, the site allowed for exploration that would produce theoretically generalizable insights that could later be put to more rigorous context-independent testing." (p. 6)

Table 14: Data Structure for Case Selection on Constructs

Emerging Category	2 nd Order Concepts	1 st Order Concepts	Examples
Case Selection on Construct	Presence of focal constructs	Appropriate site, instrumental case study, revealing, illuminating case, Transparently observable	"An appropriate site to study these questions is one where partnership is actively promoted but where differences among stakeholders are perceived as problematic. The field of refugee resettlement within the UK represents such a site, and a specific partnership project was selected as a case study from within this field." (Tomlinson, 2005, p. 1174)
	Atypical case	Extreme, unique, rare	"We carried out an inductive study of Nokia's failure to produce a next generation smartphone in response to Apple's iPhone. This case allowed us to develop a deeper understanding of the emergence of shared emotions during the innovation process and their influence on innovation because it represents an extreme case for theory building." (Vuori & Huy, 2016, p. 11)
	Typical case	generalizable, not an outlier, representative	"The site offered favorable conditions for the study....Because the organization itself was not an outlier in any discernable way, the site allowed for exploration that would produce theoretically generalizable insights that could later be put to more rigorous context-independent testing." (Bijlsma-Frankema et al., 2015, p. 6)

(ii) Selection on Context

We classify papers in this selection criterion that justify the selection of the case on the context. The second-order codes were reputation of the case, context being suitable to study the phenomenon and unique context (see table 15).

All papers that use *the reputation of the case* made prestige or reputation of the firm, retailer, or merger as a basis for case selection. This was because such a case provides an interesting context for understanding the phenomenon. For example, Jacobides and Billinger (2006) state that “*This research involves a case study of Fashion Inc., a major European designer and manufacturer of men's, women's, and children's clothing*” (p. 251). Corley and Gioia (2004) choose their case 'Bozco' because the organization “*was a global technology service provider being spun off from its long-time Fortune 100 parent organization*” (Corley & Gioia, 2004, p. 178). Sonenshein (2009) calls the case as “*a Fortune 500 retailer*” (p. 223), whereas Salvato (2009) calls the case “*a world-class Italian firm in designer home furnishings*” (p. 385), and Vaara and Tienari (2011) call their case a “*pioneering constellation in the European financial services industry because of the complexity of the integration process*” (p. 375).

Papers also use context as a justification for case selection because the context made the phenomenon of interest visible. Therefore, most papers would refer to such context as being rich, ideal or suitable. For example, Tilcsik (2010) justifies case selection on the ‘rich context’ of the case. Whereas Islam et al. (2016) explain the selection of case because it is an “ideal context” to understand “anology work in innovation” (p 778).

Some papers highlight *unique context* as a justification for case selection. Under this second-order category, the paper highlights that the context is unique, new, or understudied as a justification for case selection. For example, Lanzara and Patriotta (2007) select Fiat as their case study because of the ‘unique setting’ that the case provides. Whereas, Carney and Farashahi (2005) justify the selection of the case because the case offers insights into an understudied context of a ‘developing country’ that is Iran.

"Scholars have paid less attention to the extent to which transnational institutions diffuse, take root, and embed in developing countries. We address this issue. Understanding diffusion processes in developing countries matters because such contexts are likely to produce novel hybridizations and local variations in institutional processes...To examine some of the theoretical and policy issues stemming from the diffusion and embedding of transnational institutions into the context of a developing country, we describe post-World War II Iran's experience with two transnational regimes in the field of civil aviation." Carney & Farashahi, 2005, p. 54)

Table 15: Data Structure for Case Selection on Context

Emerging Category	2nd Order Concepts	1st Order Concepts	Examples
Case Selection on Context	Reputation of the case (highlighted)	Prominent, large, leader, important, top rank, successful, first, major, leader, top, widely recognized, leading, FTSE 100 company, pioneer, global, market leader	"Our study is based on an in-depth analysis of the creation of the Nordea financial services group in 1999-2002. Nordea can be seen as a revelatory case (Miles and Huberman 1994, Yin 2005) that allows one to examine in detail the role of antenarratives and storytelling in and around the merging MNC...Furthermore, it is generally considered a pioneering constellation in the European financial services industry because of the complexity of the integration process."(Vaara & Tienari, 2011, p. 375)
	Context suitable to study the phenomenon	rich context, ideal context, suitable context	"To fill this lacuna, I conducted a qualitative case study of a government agency in a post-Communist democracy of the former Soviet bloc. This organization was a suitable research site because it allowed me to investigate how decoupling emerged, how it unfolded over several years, and why eventually the organization ceased to engage in decoupling. More generally, the post-Communist setting was a particularly rich context in which to study how an organization responds to institutional pressures. " (Tilcsik, 2010, p. 1475)
	Unique Context	Unique, new, understudied context	"Scholars have paid less attention to the extent to which transnational institutions diffuse, take root and embed in developing countries. We address this issue. Understanding diffusion processes in developing countries matters because such contexts are likely to produce novel hybridizations and local variations in institutional processes...To examine some of the theoretical and policy issues stemming from the diffusion and embedding of transnational institutions into the context of a developing country, we describe post-World War II Iran's experience with two transnational regimes in the field of civil aviation." (Carney & Farashahi, 2005, p. 54)

(iii) Selection on Access

Access is another rationale given for selecting the case, where the second-order sub-categories are *access to data* and *difficult access* (see table 16).

Papers use *access to data* such as documents, records, historical accounts, patents, publications, public sources, official records, media accounts, and online archival data to select the case. Others also highlight access to managers, central actors, and elite informants (e.g., top management) for interviews to select the case. Furthermore, papers when using access also highlight the extent of access that paper had to the data. For example, Bijlsma-Frankema et al. (2015) indicate “full access” (p 6) or Szulanski and Jensen (2006) highlight that they had "complete access" (p. 941). Some papers also highlight access to ‘well-documented’ or ‘rich’ data. Beyond *access to data*, some papers also select a case that is *difficult to access*. This was evident in Thorén & colleagues’ paper (2018), in which the paper highlights the difficulty in gaining access to media corporations in general, which they did not face due to their unparalleled access.

Table 16: Data Structure for selection on Access

Emerging Category	2nd order concepts	1st Order concepts	Examples
Case Selection on Access	Access to data	Documents, records, managers, informants , full access, well documented, rich data	<p>"Smith Corona is a particularly attractive firm for a detailed historical case study (cf. Golder, 2000). Because the firm's demise in 2001 is recent, key decision makers of the last two decades could be located and interviewed. Because press articles were archived digitally since the early 1980s, database searches were much facilitated. Additionally, because Smith Corona was well known, it received a lot of press attention. Finally, as the firm was publicly traded, financial statements, management discussions, stock market data, and press releases were available. " (Irwin et al., 2017, p. 3)</p> <p>"The site offered favorable conditions for the study. First, after consultation, the judges and administrators fully supported the research-based approach, and both groups promised to fully cooperate in the project. Thus, researchers obtained full access to perceptions and behaviors of both groups through observation and interviews, but they could also verify consistency of the various parties' accounts." (Bijlsma-Frankema et al., 2015, p. 6)</p> <p>"Several factors motivated our choice of this case. First, the student conflict lasted more than a year and involved intense public debates, providing a rich data source of media reports." (Dionne et al., 2019, p. 656)</p>
	Difficult access	inaccessible, difficult to observe , privileged access, revelatory , unusual access	<p>"Although there are recent exceptions (Krumsvik, 2014; Picard, 2015), the majority of studies of mass media and the Internet (as well as of traditional media) tend to focus on audiences and content rather than organizational issues due to researchers' difficulties in obtaining access to mass media producers and production sites (Keith, 2011, p. 2)... In contrast, unparalleled access to and long-term engagement with a newspaper organization enabled the current study." (Thorén et al., 2018, p. 929- 930)</p>

Selection Criteria for Selecting Sub-units (or Embedded Units)

In our sample, we had 102 single-embedded case study papers. Of these 102 papers, around half, that is 45 papers did not provide any reason for selecting their sub-units (or embedded units). Regarding the selection criteria for sub-units, we find two important insights. First, the selection criteria for sub-units differ substantially from the case level, where most papers (i.e., 46 papers) select *different sub-units* (see table 17). This, we contend is because unlike the case level, where the researchers can only select ‘one case’, the presence of more than one sub-unit within the case allows the researcher to leverage comparisons (Eisenhardt, 1989).

For example, Pratt et al. (2006) seek to understand “how professionals construct their own professional identities” (p. 236). For this, they look at three distinct segments of physicians (primary care, surgery, and radiology) and “the choice of these three physician groups maximized differences along two dimensions thought to be particularly relevant to the work of physicians: generalist versus specialist, and high to low degree of patient contact” (p. 238). As the paper goes on to say that the selection of three different physician groups offers “three distinct windows through which to view identity construction” (p. 238). Similarly, Brattström et al. (2019) to understand trust divergence use temporal bracketing to identify five different stages (or sub-units).

“Applying a temporal bracketing approach (Langley, Smallman, Tsoukas, & van de Ven, 2013), we used this insight as a starting point for the identification of trust development stages in our case, labelled stages A to F. As illustrated in Table 2, stages A, C and E denote time periods of trust divergence; stages B and D denote time periods of distrust convergence, meaning that both managers and engineers maintained negative trust perceptions toward Cooler. Finally, stage F denotes a time period of trust convergence, meaning that not only engineers, but also managers, developed positive trust perceptions toward Cooler.”(Brattström et al., 2019, p. 1690)

Second, unlike the pluralistic style of selection that emerges on the case level, we find a homogeneous practice in selecting sub-units (or embedded units). This, we contend, is attributable to the fact that there is no methodological discussion on the selection at the sub-unit level so far in the literature. This methodological dearth is stifling the 'pluralistic' ways researchers can select the sub-units for theorizing in innovative ways. The homogeneity of the case selection strategy on the sub-unit level should nevertheless be seen in the *combined* selection strategies we advocate on the case and sub-unit level. Thus, the selection criteria for the two levels together allow for pluralism.

Table 17: Data Structure for Sub-unit Selection on Comparative Logic

Emerging Category	2nd order concepts	1st Order concepts	Examples
			<p>“The choice of these three physician groups maximized differences along two dimensions thought to be particularly relevant to the work of physicians: generalist versus specialist, and high to low degree of patient contact....Given the differences among these types of physicians in focus of training, length of socialization, and kinds of tasks required at work, we felt that examining this combination of physician types would give us three distinct windows through which to view identity construction.” (Pratt et al., 2006, p. 239)</p>
Selection on different sub-units	Comparing differences among sub-units	Turning points, natural experiment, comparative, distinct, , turning point , inflexion, differences	<p>“Applying a temporal bracketing approach (Langley, Smallman, Tsoukas, & van de Ven, 2013), we used this insight as a starting point for the identification of trust development stages in our case, labelled stages A to F. As illustrated in Table 2, stages A, C and E denote time periods of trust divergence; stages B and D denote time periods of distrust convergence, meaning that both managers and engineers maintained negative trust perceptions toward Cooler. Finally, stage F denotes a time period of trust convergence, meaning that not only engineers, but also managers, developed positive trust perceptions toward Cooler.” (Brattström et al., 2019, p. 1690)</p>

Discussion

Despite the criticism that the single case study method has faced in the past (Achen & Snidal, 1989; Eisenhardt, 1989; Eisenhardt, 1991; Gehman et al., 2017; Goldthorpe, 1997; King et al., 1994); we see a growing number of single case study papers being published in top organization studies and management journals (as shown in figure 4). Therefore, the single case study method offers important theorizing gains, however only if done rigorously (Tsoukas et al., 2003).

In this regard, selection represents a fundamental step (Cook & Campbell, 1979; Cuervo-Cazurra et al., 2016; Geddes, 1990; Seawright & Gerring, 2008) whose explicit discussion aligns with the needed practice of 'transparency' (Aguinis et al., 2018; Aguinis & Solarino, 2019; Banks et al., 2016). Such 'transparency' allows reviewers and readers to assess whether the 'case' or sub-units' selected are in a position to theorize about the phenomenon of interest. Indeed, a lack of disclosure in selection practices can only cast doubts on the theoretical inferences from the case and sub-units.

To provide methodological clarity on selection practices for the single case study research, we propose a 'two-level selection' framework (see figure 5) conceptualized from our empirical analysis. In the spirit of methodological pluralism, our framework does not prescribe a set of selection criteria; instead, the framework provides two important methodological clarity. First, the case selection strategy differs for the two single case study designs. Second, the explicit discussion of selection on these two levels is essential for ensuring sound theorizing from the single case study method.

We now explain the two-level case selection framework in more detail and important future recommendations for enriching theorizing from the single case study design.

Two Level Selection Framework

The two-level selection framework (see figure 5), provides conceptual clarity of decisions that a researcher has to undertake regarding selection when conducting qualitative single case study research. While we present the framework in a linear format (see figure 5), we do not suggest that selection decisions will be sequential; rather, it can be very iterative. However, the aim is to highlight some of the fundamental 'decisional' differences when it comes to selection for different single case study designs.

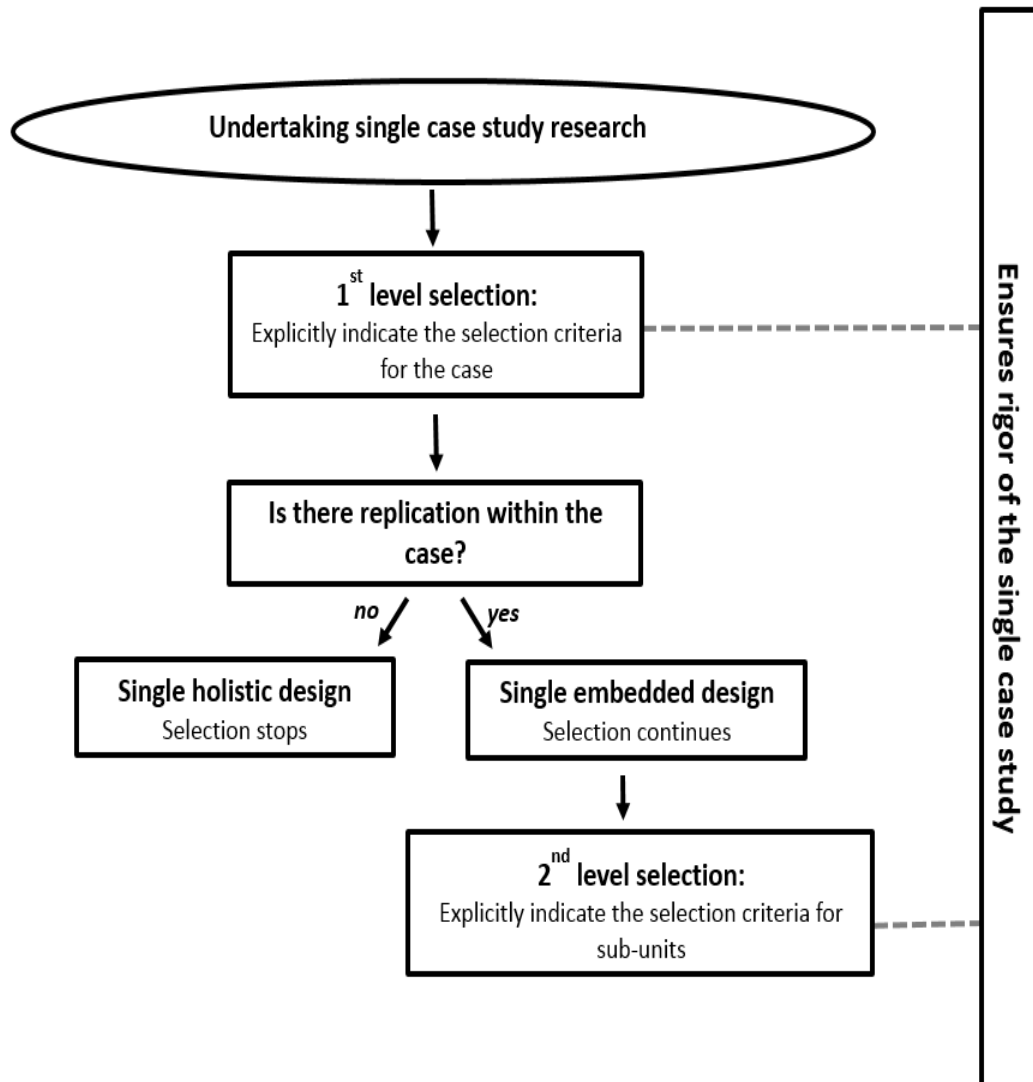
Our framework begins with a critical decision, which is to select an 'information-rich' case that provides the necessary deep insights into the paper's theoretical objective. We call this the first-level selection. The next important decision that the researcher has to make is whether s/he is interested in undertaking 'replication' within the case. If the answer is affirmative, then the researcher is conducting a single-embedded case study research. If it is negative, then the researcher is conducting a single holistic case study research. The case selection process stops for the single holistic design; however, for the single-embedded design, the researcher has to select sub-units (or embedded units) within the case. We call this the second-level selection, which is fundamentally different from the first-level selection, primarily because a researcher can now select more than one sub-unit. This provides the opportunity to compare different or similar sub-units, for in-depth theorizing (Dyer & Wilkins, 1991), or to propose a process (Langley, 1999) or to undertake a more variance-based theorizing (Eisenhardt, 1989; Gehman et al., 2017). Such comparisons, by design, are not possible at the case level.

Therefore, relaying the two-level selection explicitly for the case and sub-units is important for four reasons. First, different selection criteria will lead to different results and conclusions (Patton, 2002; Rihoux & Ragin, 2008). As such, 'transparently' discussing selection criteria will enable the study's replicability (Fletcher & Plakoyiannaki, 2011). Second, a well-articulated selection criterion is consequential for ensuring the soundness of causal relationships (Cook and Campbell, 1979; Yin, 2009). Knowing that the right 'case' or 'sub-units' have been selected is crucial, primarily

because not every case nor every sub-units encapsulates the phenomenon of interest. Third, it will enrich the theorizing process allowing for 'scientific discovery' because it will enable future qualitative researchers to opt for different selection strategies that previous empirical studies have not used. Fourth, a clear explanation and understanding of selection on these two levels will allow other researchers (if they wish to do so) to appropriately extend the insights from the single case to other cases (i.e., analytical generalizability).

In the subsequent section, we will now discuss, in light of our empirical analysis, other important issues to keep in mind when undertaking selection for the single case study research.

Figure 5: Two Level Selection Framework



The need for pluralistic selection criteria for the case and embedded units

Although it is reassuring to find that most papers discuss the reason for selecting their case, we also see an overreliance on specific selection criteria for case selection. This finding contradicts the generally held belief that single case study research is only suitable when a researcher wants to investigate an 'outlier', or an 'exemplar case' or a 'convenient' case (Eisenhardt & Graebner, 2007; Gehman et al., 2017; Yin, 2009). On the contrary, we find few papers using *context* and *access* as selection criteria at the case level, and find most papers using *constructs* to select the case. This issue is even more prominent for sub-units (or embedded units) within the case, in which we see an overreliance on selecting *different sub-units* within the case (i.e., theoretical replication). Therefore, at the sub-unit level, an understanding of selection on similar sub-units (i.e., literal replication) is missing.

While this lack of richness for selection criteria on both levels is not problematic to develop rigorous insights from the single case, it is certainly problematic from the perspective of enriching our theoretical understanding of certain phenomena. For example, at the sub-unit level, we contend that the selection of similar sub-units will lead to different theoretical insights than selecting different sub-units. However, a discussion on the impact that different selection strategies has on the theorizing process is at present missing on both levels. To address this issue and to understand it better, we suggest researchers incorporate pluralistic selection strategies for single-embedded case study research on both levels. This will allow new “ways of addressing questions in daring and playful ways” (Hjorth & Reay, 2018, p. 7), in which “intellectual pluralism ultimately aids collective learning” (Tsoukas et al., 2003, p. 1005), and consequently theoretical discoveries and theoretical advancement (Delbridge & Fiss, 2013; Hjorth et al., 2019; Hjorth & Reay, 2018; Kellert et al., 2006; Piekkari et al., 2009; Piekkari & Welch, 2011; Pratt et al., 2019; Welch et al., 2011; Welch et al., 2013; Welch & Piekkari, 2017).

The need to theorize on a 'failed' case

Another essential aspect of selection is *context* (Poulis et al., 2013), which can advance our theoretical understanding of a phenomenon in novel ways. This is because, not considering context can “lead to omitting information-rich cases during sampling” (Poulis et al., 2013, p. 308). However, we find few papers that use *context* as a selection criterion, and it is entirely absent for sub-units within the case. Moreover, papers that justify selection on *context* are engaging predominantly in an ‘anti-failure’ bias by selecting a successful or best case. We argue that many theoretical gains can be made by investigating a failed (or negative) case (Mahoney & Goertz, 2004). Primarily because such a case “can be quite informative and instructive in revealing unrecognized relationships and in providing distinctive insights” (Nag et al., 2007, p. 821). For example, Nag et al. (2007) investigate the transformation of 'high-technology R&D organization' to 'market-oriented organization' using 'non-technological knowledge'. They state, “the intended strategic transformation did not succeed for reasons with wide implications for theory and research” (p. 821). Similarly, Vuori and Huy (2016) look at “Nokia’s failure to produce a next generation smartphone in response to Apple’s iPhone” (p. 3). As evident from these two examples, researchers select failed cases, allowing them to delve deeper into the phenomenon from a different contextual angle. Therefore, researchers should not limit the selection to only 'best' or 'most' successful case, as this will only inject theoretical biases in our understanding of different organization studies and management phenomena.

Limitations

We want to acknowledge that our study has several limitations. First, our sample includes only top organization studies and management journals. While our reason for selecting only top journals is the assumption that such journals proxy 'best' practices in organization studies and management research; we also acknowledge that this analysis should extend to other tier journals. Such comparative analysis will provide critical methodological insights into selection strategies for single case study research.

Moreover, we limit our analysis to only single case study research. The reason is to provide a more 'in-depth' methodological understanding of selection for the single case study research. However, this work should also extend to multiple case study research. This extension will provide exciting comparisons on how selection for the single case study research differs, and/or is similar to selection for multiple case study research.

Finally, our analysis could not account for the review process, which plays an integral role in what authors end up disclosing or not disclosing. However, we assume that reviewers will ask authors to omit or add material, which will be important in communicating the rigor steps and insights to readers of the paper. Therefore, we do not expect reviewers to ask the authors to remove necessary methodological steps. Future studies can also expand this analysis by interviewing editors, reviewers, and authors to understand what they expect when authors discuss selection strategies for single case study research.

Conclusion

Indicating selection for qualitative single case study research is one of the fundamental cornerstones of rigor, because the single case study by design can only build empirical conclusions on the selected case. In this regard, this chapter contributes to the methodological pluralism literature by proposing a 'two-level selection' framework, which provides methodological clarity regarding selection criteria for single case study research.

The framework explicitly makes the distinction between selection for single holistic and single-embedded design. In the former, selection happens at the case level only (i.e., first level case selection). In contrast, for the latter, it happens at the case level and within the case (i.e., first and second level selection). Beyond the framework, we call for pluralistic selection strategies both at the level of the case and for sub-units (or embedded units) within the case, which at present is missing among published single case study papers. Therefore, we urge researchers to move beyond the conventional practices of selection at the case level and for sub-units within the case. We also caution

researchers to avoid ‘anti-failure’ bias by not limiting selection to only ‘best’ or ‘most successful’ case.

Adherence to such consideration will allow for higher theoretical gains leading to increased theoretical innovation, theoretical discoveries, and theoretical advancement. We hope that in this regard, this chapter provides much needed methodological clarity and guidance on selection for the single case study method so that the field of organization studies and management rigorously leverages it.

Chapter IV*: Better Stories and Better Constructs - Towards a Typology of Different Theorizing Styles from Qualitative Single Case Study Research

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Abstract

Theorizing plays an important role in scientific discovery and advancement. However, the literature in management studies has given scant attention to different theorizing styles. This becomes a complete ‘black box’ when it comes to qualitative single case study research, which is ironic given that theorizing is a key strength of single case study research. To understand the theorizing prowess from single case study research, we interrogate the classical debate on case study research between Dyer & Wilkins (1991) and Eisenhardt (1989, 1991). We tease out two tensions from this debate, which are case study design and theorizing output. We use these two tensions to conceptualize a typology, which results in four distinct theorizing styles: *narrative theorizing*, *variational theorizing*, *story corroboration theorizing*, and *counterfactual theorizing*. While the former two represent the archetypical style of theorizing, the latter two represent new possible ways of theorizing from the single case study research. Our conceptualization challenges the existing view of the literature on single case study research and contends the use of more pluralistic styles of theorizing to enable creative and newer ways of thinking for scientific discoveries in the field of management.

Keywords: Theorizing, single case study research, qualitative

Was ist das Allgemeine?	What is the General?
Der einzelne Fall	The single case
Was ist das Besondere?	What is the specific?
Millionen Fälle	Millions of cases

(Goethe (1994) p. 433)

Introduction

Single case study research inspires inductive theory building or theory refinement by pointing to and filling in research gaps that sharpen existing theory (Bartunek et al., 2006; Dyer & Wilkins, 1991). Moreover, it contributes to theory falsification (Ragin & Schneider, 2011; Szulanski & Jensen, 2011), offers powerful illustrations (Siggelkow, 2007), and provides context-driven explanations (Dyer & Wilkins, 1991).

Given the importance of single case study research, we however know little about its theorizing capabilities. This oversight might be attributable to doubts regarding the suitability of single case study research. For example, several methodologists are skeptical about the intrinsic value (and even rigor) of single case study research and advocate multiple case study research as a remedy (Eisenhardt, 1989; Eisenhardt, 1991; Eisenhardt & Graebner, 2007; Gerring, 2004; Gerring, 2007b; Goldthorpe, 1997; King et al., 1994).

To address this gap, we revisit the classical debate in management on 'better stories' and/or 'better constructs' between Dyer & Wilkins (1991) and Eisenhardt (1989, 1991), which briefly addresses the theorizing capability (or theorizing incapability) from the single case study research. Dyer & Wilkins (1991) consider single case study research as the optimum form of case research for 'better stories' because it provides an in-depth contextualized understanding of the investigated phenomena. On the contrary, Eisenhardt (1991) argues for the superiority of multiple case study design due to its comparative logic, which allows in the identification of patterns and regularities to generate 'good' generalizable theory. This debate still proliferates, and this tension between these two approaches is still visible. For instance, in a recent symposium organized at the 2016 *Academy of Management Annual Meeting*, qualitative research experts (i.e., Denny Gioia,

Kathy Eisenhardt, Ann Langley and Kevin Corley) revisited diverse approaches of studying phenomena through qualitative research (Gehman et al., 2017). An important conclusion was that research situations are different and require different tools and approaches to theorizing, which have not been fully realized for the single case study design (Gehman et al., 2017).

Against this background, we revisit this classical debate and tease out tensions to conceptualize theorizing approaches for the single case study research. We propose a typology that captures different theorizing styles on two dimensions. The first dimension represents the tension on theorizing outputs, namely 'better stories' or 'better constructs', while the second dimension captures the tension on case study design, namely holistic or embedded. Consequently, we propose four different theorizing styles from single case study research: *narrative theorizing*, *variational theorizing*, *story corroboration theorizing*, and *counterfactual theorizing*. This conceptualization helps us move beyond the conventional theorizing styles advocated by this classical debate (i.e., *narrative theorizing* & *variation theorizing*) and highlight two new additional styles of theorizing that the classical debate misses (i.e., *story corroboration* & *counterfactual theorizing*).

However, more importantly, this typology problematizes the current traditional view of single case study research shared by proponents and opponents of single case study design. This is because our interrogation helps us problematize this 'tribalism' research, where researchers like to associate with one camp while dismissing the other. As Gulati (2007) rightly points out that a lack of 'synergistic research' "is perpetuated by tribes that form around rigor and relevance, sequestering themselves into closed loops of scholarship and dismissing the work of outsiders on the basis of their inclusion- or exclusion-of theory or of practical application" (p. 775).

We, therefore, in this chapter provide further granularity to theorizing styles for single case study research and advocate for pluralistic approaches (Cornelissen, 2017b; Delbridge & Fiss, 2013; Welch et al., 2011), which we contend will allow the single case study research to make powerful and meaningful theoretical contributions.

Why Single Case Study Research?

In this chapter, we focus on single case study research for three reasons. First, single case study research comes in fundamentally different designs (Yin, 2013). One is the so-called single holistic type, which features one case and no sub-units of analysis, and is seen as suited for in-depth contextual explanations (Dyer & Wilkins, 1991). The second variant is the single-embedded case study, where there are sub-units of analysis within the single case. The presence of these sub-units allows for comparative analysis. Therefore, in many ways, the single case study encapsulates two different designs, which provides us with an application context to compare and understand diverse theorizing styles (Cornelissen, 2017ab; Delbridge & Fiss, 2013).

Second, no previous study has systematically explored theorizing from the single case study research to the best of our knowledge. Even though discussions on single case study research exist (e.g., Burawoy, 2009; Stake, 1995; Yin, 2013), they are somewhat fragmented and does not explicitly address the issue of theorizing. Therefore, our study will be an initial attempt to shed light on the theorizing aspect of single case study research.

Third, recently the field of management has been dealing with unique, dynamic and complex phenomena (Arnould et al., 2006; Brannen & Doz, 2010; Hartley, 2004; Johns, 2006; Welch et al., 2011). Which, if solved, can have a high global impact (e.g., global climate change, gender inequality, income inequality). Such problems have come to be known as Grand Challenges (Eisenhardt et al., 2016; Ferraro et al., 2015; George et al., 2016). Viewed in this light, single case study research as a methodology is well suited for handling uniqueness and dynamism (Siggelkow, 2007) as well as complexity (Flyvbjerg, 2006). It can provide detailed, holistic accounts of human social life and can capture the operation of multiple factors on an existing situation over time (Dyer & Wilkins, 1991; Yin, 2013). From this perspective, a single case study can be revealing and powerful theoretically (Siggelkow, 2007). Furthermore, Kuhn (1962) suggests that scientific inquiry is fundamental for continuing scientific progress to revolutionize the process of scientific inquiry. Therefore, by understanding the process of theorizing from

the single case study, we can highlight different forms of scientific inquiry that will enable management studies to produce better theories.

Theorizing from Case Study Research

The word theorize originates from the Greek language and means observing and contemplating (Swedberg, 2014a). In this chapter, we define theorizing as “observing something, penetrating something, and finding something out” (Swedberg, 2012: p. 9). Simply put, theorizing generates theoretical insights. It entails different activities, which may include “abstracting”, “generalizing”, “relating”, “selecting”, “explaining”, “synthesizing”, and “idealizing” (Weick, 1995: p 387). While theorizing can be done in different ways, the methodological literature has paid little attention to theorizing, mainly because of the excessive attention given to its end product, that is, theory (Swedberg, 2014a; Welch et al., 2011). Therefore, today, management studies scholarship lacks diverse theorizing styles (Delbridge & Fiss, 2013; Piekkari & Welch, 2011; Welch et al., 2011), despite the numerous calls to embrace more pluralistic approaches to theorizing (Brannen & Doz, 2010; Delbridge & Fiss, 2013; Piekkari et al., 2009; Ragins, 2015; Welch et al., 2011; Welch & Piekkari, 2017).

In qualitative research, case study research is being widely used in management studies (Eisenhardt, 2007; Hartley, 2004; Welch et al., 2013) for theorizing (Eisenhardt, 1989; Eisenhardt, 2007; Gibbert, Ruigrok, & Wicki, 2008; Ragin & Schneider, 2011). A unique strength of case study research is that a researcher can get “closer to theoretical constructs” and, as a result, can “provide a much more persuasive argument about causal forces than broad empirical research” (Siggelkow, 2007: p 22-23). Since the case is the main unit of analysis (Gephart, 2004; Fletcher & Plakoyiannaki, 2011), case study research allows for a more nuanced contextualized understanding of the phenomenon (Yin, 2013; Welch et al., 2011) leading to rich and ‘thick’ empirical descriptions (Geertz, 1973), especially when it comes to single cases. Therefore, in light of this understanding, we define case study research as a detailed empirical investigation of a phenomenon in its

naturalistic context (Hartley, 2004; Yin, 2013) to confront theory with the empirical world (Piekkari et al., 2009).

From a design perspective, case study research can be classified into four categories, which are single holistic, single embedded, multiple holistic and multiple embedded (Yin, 2013). The single holistic design focuses on just one case, whereas the single embedded design focuses on the case and embedded units present within the case. This logic also extends to multiple holistic and multiple embedded designs, with the only difference being that instead of one case, these designs have multiple cases.

Classical Debate on Case Study Research between Dyer & Wilkins and Eisenhardt

In this section, we revisit the classical debate between Dyer & Wilkins (1991) and Eisenhardt (1989; 1991). Our interrogation allows us to tease out two tensions, which we then use to showcase the theorizing possibilities from the single case study research.

Tension #1: Case study Design

One of the main tension in the classical debate on case study research is case study design. A well-known normative suggestion by Eisenhardt (1989) was to select “between 4 and 10 cases usually works well. With fewer than 4 cases, it is often difficult to generate theory with much complexity, and its empirical grounding is likely to be unconvincing, unless the case has several mini-cases within it” (p. 545). Therefore, Eisenhardt (1989) seems to be pushing for multiple case study design, and for the single case, she is pushing for the single embedded design. On the contrary, Dyer & Wilkins (1991) stressed that Eisenhardt (1989) had given undue preference to multiple case study design over single case study design. They dispute that “she focuses attention on general constructs, not the context of the constructs and the role these constructs play in a particular setting” (Dyer & Wilkins, 1991: 614). They assert that the single holistic design is important primarily because it

allows for a deep contextualized understanding of the case, which is not possible with a multiple case study design. On the other hand, in reply to Dyer & Wilkins (1991), Eisenhardt (1991) makes her point that theoretical insights are only possible when “multi-case comparative logic” (p 626) is used. Therefore she pushes back on what the single holistic design can contribute to our theoretical understanding. While recently she does acknowledge the importance of single case study research, she still appears to prefer the multiple case study design over the single case study design (Eisenhardt, 2007; Gehman et al., 2017). It is because multiple case study design provides a “stronger base for theory building”, which is “better grounded, more accurate, and more generalizable (all else being equal) when it is based on multiple case experiments” (Eisenhardt & Graebner, 2007: 27). Therefore, from this, we conclude that the first tension of this classical debate is based on the case study design.

Tension #2: Theorizing output- ‘better stories’ and/or ‘better constructs’

While the debate of ‘better stories’ and ‘better constructs’ has traditionally been seen mainly from a design perspective, our contribution in this chapter is that it can (and should) also be seen from a theorizing perspective. Our perspective points to a multi-functionality view of the single case study design that can provide various theorizing outputs.

From a theorizing output perspective, ‘better stories’ can capture ‘unique’ and ‘complex’ stories (Stake, 1995) that enable a researcher to provide a rich contextualized understanding of the phenomenon (Dyer & Wilkins, 1991; Siggelkow, 2007). It can provide insights into challenging aspects, which includes “organizational politics”, “culture”, “hidden agendas”, “taboos”, and can also reveal “what people believe or want to believe happened”(Gabriel, 2004: p. 23). It is because ‘better stories’ allow for a movement from surface-level data to deeper levels of analysis, which allows for a more nuanced understanding of the phenomenon of interest (Dyer & Wilkins, 1991; Büthe, 2002; Langley, 2013; Pentland, 1999; Stake, 1995). It, therefore, leads to “deeper and denser insights” (Blatter & Blume, 2008: p 317). Therefore, ‘better stories’ can have several aims, which includes but is not limited to, establishing a sequence of events,

identifying mechanisms, understanding causal webs, and/or identifying broad contextual patterns (Abbott, 1990; Langley, 1999; Langley et al., 2013; Van de Ven & Poole, 1995; Delbridge & Fiss, 2013), which is void of variational analysis. It is for this reason ‘messiness’ is welcomed. In Langley’s own words, when undertaking this approach, “you need to include as much richness as possible in your account, so that readers themselves can see to what degree the story you are telling finds resonance” (Gehman et al., 2017: 295).

‘Better constructs’, on the other hand, focuses on the variability aspect of constructs observed through a single case study. This approach to theorizing is also known as, variable-oriented, co-variational or variance model approach to case study research (Blatter & Haverland, 2012; Blatter & Blume, 2008; Gerring, 2004; Langley, 1999; Ragin & Robinson, 2009; Ragin & Schneider, 2011). As Eisenhardt points out that “in theory building from cases, the researcher is trying to, on one hand, control the extraneous variation, and on the other hand, focus attention on the variation of interest” (Gehman et al., 2017: 5). Therefore, the logic is to see how a change in the independent variable explains the variance of the dependent variable (Blatter & Haverland, 2012; Langley, 1999; Van de Ven, 1992). For the single case, this comparison is only possible when the “case has several mini-cases within it” (Eisenhardt, 1989: 545). These embedded units within the case can be compared horizontally (diachronically) or vertically (synchronically) (Gerring, 2004). Horizontal (diachronic) contrasting compares two or more temporal embedded units within the same case, while vertical (synchronic) contrasting compares different spatial levels of analysis to each other (Burgelman, 2011). Overall, the foundational element of ‘better construct’ focuses on variables and not social actors, which makes “stories disappear” (Abbott, 1992: 428).

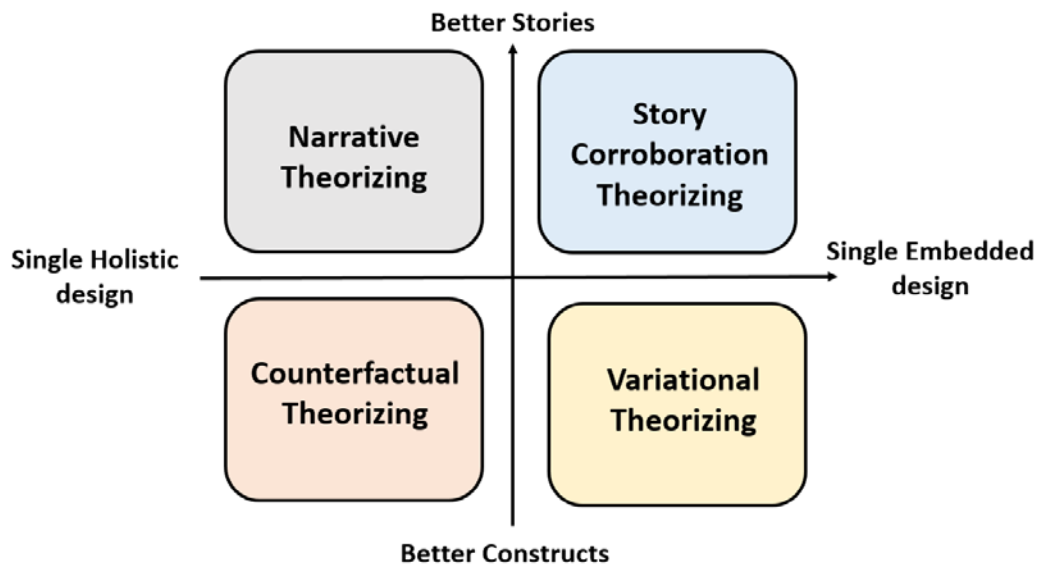
From this perspective, ‘better stories’ can be seen as context-driven explanations void of comparative analysis, and ‘better constructs’ can be seen as variance driven explanations of constructs in which comparative analysis is central. In light of the above theoretical background, we seek to conceptualize the different theorizing styles in the application context of single case study research. We provide examples for our

conceptualized theorizing styles from the sample of single case study papers used in our earlier chapter on selection strategies.

Conceptualization a Theorizing Typology from Single Case Study Research

In this section, we conceptualize a typology on theorizing styles from single case study research. We formulate our typology using the two tensions that emerged after interrogating the debate between Dyer & Wilkins (1991) and Eisenhardt (1989, 1991). We classify the different theorizing styles into a typology, as shown in figure 6. The x-axis of the typology captures the first tension on case study design, namely single holistic and single embedded. The y-axis of the typology captures the second tension on theorizing output, which captures the tension of ‘better stories’ and ‘better constructs’ (Dyer & Wilkins, 1991; Eisenhardt, 1989; Eisenhardt, 1991; Gehman et al., 2017). Each cell of the matrix produces four distinct theorizing styles from single case study research, notably 1) *narrative theorizing*, 2) *variational theorizing*, 3) *story corroboration theorizing*, and 4) *counterfactual theorizing*. We now explain each of the four modes of theorizing styles in detail.

Figure 6: Typology on Theorizing Style for the Single Case study research



Theorizing style#1: Narrative Theorizing

Narrative theorizing is the theorizing style advocated by Dyer & Wilkins (1991). It, therefore, represents the archetypical theorizing style, which uses a single holistic design, and the focus is on ‘better stories’. The goal is to provide ‘thick descriptions’ (e.g., see Argyres, 1999; Brown et al., 2015; Cutcher, 2014; Kenny, 2016; Weiskopf & Tobias-Miersch, 2016). Moreover, the aim here is to understand the phenomenon of interest in the richness and complexity of its context (Dyer & Wilkins, 1991; Langley, 1999). This means that the intent is not to control the context, but rather context plays an important role in analyzing and explaining the phenomenon. For example, Yousfi (2014) highlights that she interrogates the multi-faceted nature of context and problematizes “overlooking the impact of the historical and cultural contexts from which hybridity emerges” (p. 394). Moreover, since there is one case, the analysis is void of any comparative analysis. Therefore, this theorizing style is suitable to understand processes that have a causal web of factors (e.g., Dieleman & Boddewyn, 2012), or have a feedback loop (e.g. Bijlsma-Frankema, et al., 2015; Stadtler & Van Wassenhove, 2016), or share a two-way relationship (e.g., Stadtler & Van Wassenhove, 2016), or have paradoxical relationships (e.g., Stadtler & Van

Wassenhove, 2016). Overall, researchers using this theorizing style are interested in understanding context in the richness of a single case and do not engage in comparative analysis.

Theorizing Style# 2: Story Corroboration Theorizing

This theorizing style moves away from the conventional theorizing styles that Dyer & Wilkins (1991) and Eisenhardt (1989, 1991) proposed. This atypical theorizing style uses the single embedded design and focuses on ‘better stories’. Therefore, like *narrative theorizing*, the interest is in context. Furthermore, similar to *narrative theorizing*, context plays an important role in analyzing and explaining the phenomenon and is not controlled. However, a distinct aspect of *story corroboration theorizing* from *narrative theorizing* is the presence of embedded units within the case. The presence of embedded units allows comparative analysis, in which each embedded unit can be compared. Therefore, there is within-case replication; however, it is literal (Yin, 2013) that is embedded units selected will be similar. Therefore comparisons will be made not for variational purposes but to corroborate contextual patterns detected in the case by showing that each embedded unit captures the same story. For example, Sonenshein (2009) proposes a process, which led to the emergence of ethical issues. For this, he identifies three “starting issues” experienced by the same organization in different points in time. We classify these three issues as temporal embedded units. Each of these embedded units experience the same process of ethical emergence, which are “trigger points” (e.g., broken promises) that creates “ambiguity”, this in turn forces employees to use an “employee welfare frame” to resolve the ambiguity. If unresolved, this leads to an “emerging ethical issue”. Overall, single case study research using *story corroboration theorizing* is interested in context-driven explanations and uses embedded units to corroborate the proposed story.

Theorizing style# 3: Counterfactual Theorizing

This theorizing style moves away from the archetypical theorizing styles proposed by Dyer & Wilkins (1991) and Eisenhardt (1989, 1991). This mode of theorizing uses a single holistic design, and the focus is on ‘better constructs’.

Counterfactual theorizing or thought experiments resemble a variance model, in which constructs can be manipulated (Shepherd & Suddaby, 2017; Weick, 1989). As such, unlike *narrative theorizing*, which focuses on context, this quadrant has a variance-based logic. Since the idea is to identify variations, the interest here is not to understand the context. Moreover, there are no tangible or observable units of analysis (except the case itself), and comparisons are made through imaginary experiments (Folger & Turillo, 1999; Shepherd & Sutcliffe, 2011). In this regard, this mode of theorizing uses speculation to conduct variational analysis through thought experiments (Folger & Turillo, 1999; Shepherd & Sutcliffe, 2011; Shepherd & Suddaby, 2017; Weick, 1989) by grounding it in existing theories and literature. For example, Gavetti & Rivkin (2007) are interested in theorizing about a firm Lyco and “offer a set of speculations, which we develop as a sequence of propositions.... These propositions are anchored in prior research, but they require theoretical refinement and empirical validation.” (p. 432). As illustrated by the previous quote, the role of a priori theory is important for this theorizing style, and propositions can be used to display variational elements of constructs. Therefore, the *counterfactual theorizing* style (or thought experiment) is interested in variance-oriented research, and the focus is on ‘better constructs’. While embedded units are absent, this theorizing style leverages variability by developing thought experiments grounded in existing theories or literature.

Theorizing style #4: Variational Logic Theorizing

This represents the archetypical theorizing style, as suggested by Eisenhardt (1989). This mode of theorizing uses a single embedded design and focuses on ‘better constructs’. In this regard, this mode of theorizing uses a variance-based approach to theorizing. Like

counterfactual theorizing, papers in this quadrant are interested in variations between constructs. To leverage variability, this theorizing style uses embedded units. However, the distinct aspect of this theorizing approach, from *story corroboration theorizing*, is that the nature of within-case replication is 'theoretical' (Yin, 2013) rather than 'literal'. Therefore, this theorizing style selects embedded units that are different from each other, enabling variability between constructs. For instance, Carlsen (2006) wants to understand how an organization's (Calculus) imaginations of practice are important aspects of identity and its importance for organizational development. For this, he identifies three different temporal embedded units that represent distinct forms of imagination of practices: *a period of turnaround*, *a period of strong growth*, and *a period of crisis*. Carlsen uses these three periods for "within-case comparison across time" (p. 136). In sum, the *variational theorizing style* exhibits a variance-based approach. To leverage variability, they select embedded units that are different from each other.

Discussion

Folger & Turillo (1999) rightly point out that "science thrives on diverse, eclectic methods of discovery in general (cf. McCall & Bobko, 1990), which includes theorizing" (p. 755). It is because theorizing plays an important role in understanding and improving theory (Swedelberg, 2014). Moreover, researchers in management studies investigate increasingly unique, dynamic and complex phenomenon (Arnould et al., 2006; Brannen & Doz, 2010; Hartley, 2004; Johns, 2006; Welch et al., 2011). Therefore, this makes the single case study research increasingly relevant to address such phenomena (Dyer & Wilkins, 1991; Flyvbjerg, 2006; Siggelkow, 2007; Yin, 2013). For this reason, it is essential to understand the theorizing prowess from the single case study research.

In this regard, the present four-fold conceptual typology constitutes an attempt to explore different theorizing styles for the single case study research. This typology extends and goes beyond the two conventional theorizing styles, namely *narrative theorizing* and *variational theorizing*, proposed by Dyer & Wilkins (1991) and Eisenhardt (1989). *Narrative theorizing* considers single case study suitable for generating 'better stories' through in-depth contextual analysis (Dyer & Wilkins, 1991). On the contrary, *variational*

theorizing sees the usefulness of the single case only if it has "several mini-cases within it" (Eisenhardt, 1989: p. 545) for comparative analysis.

An essential contribution of our conceptual typology is that we move beyond these two conventional styles of theorizing and propose two additional theorizing styles from the classical debate between Dyer & Wilkins (1991) and Eisenhardt (1989, 1991). We find *story corroboration theorizing*, which is about reaffirming the 'story' through similar embedded units. It challenges the view that the single holistic design is the only design that is suitable for understanding context. We also find *counterfactual theorizing*, which is about leveraging variability of 'constructs' without using embedded units via thought experiments. In this regard, *counterfactual theorizing* challenges opponents of the single holistic design, who view it as inherently incapable of using a variance logic because it is just one case (Eisenhardt, 1989; Gerring, 2004).

In light of our typology, our study has three important implications. First, single case study research is a potent tool for theorizing. It is because the single case study research is flexible and can accommodate a diverse set of "research questions", "philosophical assumptions", and "variations in context" (Piekkari & Welch, 2011: 4), to address challenging issues in management studies.

Second, the management field is increasingly becoming 'eclectic' as it comprises of cross-disciplinary stakeholders (Corley & Gioia, 2011). This eclecticism can only be addressed through pluralism. Therefore, we advocate for a more pluralistic outlook and problematize using a single case study research template. A pluralistic approach to theorizing will enable scientific discovery (Folger & Turillo, 1999), especially since there has been "fragmentation and lack of novelty" (Fisher & Aguinis, 2017: p 458) and over-reliance on 'theory borrowing' from other disciplines (Oswick et al., 2011). It is therefore not surprising to see increasing calls for more pluralistic discoveries (Kellert, Longino & Waters, 2006; Welch et al., 2013; Welch & Piekkari, 2017; Piekkari & Welch, 2011; Welch et al., 2011), and our findings also point in the same direction.

Finally, while in this chapter, we propose two additional theorizing styles, we still need more methodological discussion on what other theorizing styles from the single case

study research is possible. The present chapter is limited to the classical debate. However, future studies can expound on the present chapter to propose newer ways of doing theorizing. For example, how researchers can engage in a single case study research to accommodate both 'better stories' and 'better constructs'? Moreover, this conversation of pluralistic styles of theorizing should also be explored for multiple case study design. For example, how can researchers use multiple case study research for context-driven explanations instead of variance-based theorizing? These are essential questions, and we need more methodological discussions since an understanding of theorizing is still lacking (Swedberg, 2014a; Swedberg, 2014b; Swedberg, 2014c; Weick, 2014). In this regard, top-tier journals as gatekeepers can play an important role in promoting pluralistic theorizing outlooks and understandings (Corley & Gioia, 2011). We submit that journals should strive for editorial teams that bring in diverse methodological expertise. There is also a need for more special issues on theorizing, which can go beyond single case study research. Furthermore, universities can introduce courses that can expose doctoral students to diverse styles of theorizing. Therefore, scholars of management studies can only embrace and promote pluralistic theorizing styles when the community understands this pluralism.

Conclusion

To conclude, while we see a growing call for pluralism in qualitative research (Bluhm, et al., 2011; Hartley, 2004; Pratt et al., 2020; Shah & Corley, 2006), the notion of 'pluralistic' approaches to case study design and theorizing is still only partly understood. There has been calls for more creativity in the process of theorizing to promote 'better and bolder theory' (Swedberg, 2014a); however such pluralistic ways of thinking will only happen when an understanding about it has been developed. Our study makes a first step in this direction by identifying four different theorizing styles from single case study research using the classical debate on case study research. These are *narrative theorizing*, *variational theorizing*, *story corroboration theorizing* and *counterfactual theorizing*. While the former two represents the archetypical style of theorizing, the latter two represents possible new ways of undertaking theorizing from the single case study

research. By highlighting these different styles of theorizing, we hope to stimulate researchers to use and come up with more creative and newer ways of thinking for scientific discoveries in the field of management studies.

Chapter V*: The Forgotten Role of Time in Qualitative Theorizing for International Business Research

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Abstract

Time plays an integral role for developing a holistic understanding of International Business (IB) phenomena. Yet, how do IB scholars incorporate time in their qualitative theorizing is still not well understood. We interrogate this by applying qualitative content analysis on 45 papers published in *Journal of World Business* and *Journal of International Business* from 1999 until 2019. We find four different time treatments, which are snapshots, evolutionary phases, variational phases, and plots. Moreover, we also advance a typology, which considers four distinct modes of temporal theorizing, namely temporal co-variance, temporal evolution, temporal accumulation and temporal narration. We suggest that our typology increases the scope of theoretical gains in IB, by moving beyond conventional practices of temporal theorizing. Moreover, by embracing pluralistic styles of temporal theorizing, IB researchers can generate more ‘complete theories’.

Keywords: time, theorizing, qualitative, pluralism

Introduction

Time is inextricably linked to theorizing, because it shapes “the what, how, and why elements of a theory” (George & Jones, 2000: 658). In this regard, qualitative research is an appropriate milieu to consider the role of time in theorizing, because of its central role in theory building for the field of International Business (IB) (see Doz, 2011; Welch et al., 2011). However, there has been growing criticism in International Business (including in other fields of management) that time is taken for granted (Blazejewski, 2011; Brouthers & Hennart, 2007; Eden, 2009; George & Jones 2000; Hurmerinta et al., 2016; Jones & Caviello, 200; Lee & Liebenau 1999). This problem of ‘timelessness’ or ‘forgetfulness of time’ in IB is in part both practical and methodological. Practically, time-sensitive research require resources, which a researcher may not have including ironically not having enough time to consider time (Blazejewski, 2011). Methodologically, since most fields including IB are predominantly quantitatively oriented (Birkinshaw et al., 2011; Delios, 2017; Nielsen et al., 2020), methodological discussions on time in qualitative research are few and far between (Blazejewski, 2011; Doz, 2011; Hassett & Paavilainen-Mäntymäki, 2013).

This lack of understanding is particularly problematic for three reasons. First, as Delios (2017) rightly points out “the world of IB is in a constant state of change” (p. 394). Hence, IB phenomenon are far from being static (see Eden, 2009; Hassett & Paavilainen-Mäntymäki, 2013), and may even pan out over long periods of time (e.g., internationalization see Jones & Coviello, 2005; foreign direct investments see Luo et al., 2010; globalization, see Czinkota & Ronkainen, 2005). Therefore, to develop a ‘holistic’ understanding of IB phenomena, qualitative researchers will have to consider time in their research design (Blazejewski, 2011; Middleton et al., 2011; Welch & Paavilainen-Mäntymäki, 2014). Second, by not accounting for time properly, a researcher runs the risk of compromising the trustworthiness of empirical evidence. This is because time plays an important role in setting boundary conditions (i.e., the period for which the theory holds), in defining the meanings of a theoretical constructs and their relationship (George & Jones, 2000; Zaheer et al., 1999). Finally, while IB methodological literature acknowledges the

importance of time (Blazewski, 2011; Eden, 2009; Hassett & Paavilainen-Mäntymäki, 2013; Hurmerinta et al., 2016; Welch & Paavilainen-Mäntymäki, 2014); we still lack an understanding on temporal theorizing for qualitative IB research. This is problematic as it may lead to ‘theory borrowing’ from other disciplines, which contributes to “discipline-based theories more than to a rich understanding of phenomena of interest to IB” (Doz, 2011:p. 583). As such, numerous IB scholars have indicated that the field’s vibrancy and relevancy is fizzling out, as it may fail to address contemporary IB issues (Delios, 2017; Poulis & Poulis, 2018). In more ways than one, understanding the role of time for qualitative theorizing is crucial.

To fill this lacuna, the aim of this chapter is to understand ‘how’ qualitative IB scholars practice temporal theorizing. We do so by drawing our insights from qualitative content analysis on papers published in two top tier IB journals- Journal of World Business and Journal of International Business. To capture the full breadth of temporal theorizing, we look at ‘time-sensitive research’ (i.e., a qualitative study interested in time) as opposed to focusing only on specific temporal methods (e.g., longitudinal research). By broadening the range of papers to analyze, we are able to provide ‘rich’ insights into temporal theorizing. We find limited disclosure when it comes to explicating time related methodological aspects. We also find that IB qualitative researchers are reporting time via snapshots, evolutionary phases, variational phases, and plots.

Our chapter, in this regard, makes a methodological contribution by proposing a typology on temporal theorizing in qualitative research. Our typology proposes four distinct modes: temporal co-variance, temporal evolution, temporal accumulation, and temporal narration. As such, our typology opens up the spectrum of current approaches and increases the scope of possible theoretical gains in IB, by moving beyond practices of temporal theorizing, namely process and variational research. Our chapter, therefore, addresses the growing call for temporality in IB scholarship as a means to generate ‘complete theories’, which will allow IB research to remain relevant to the contemporary needs of today’s world (Doz, 2011; Delios, 2017; Poulis & Poulis, 2018).

Time and Theorizing in IB Research

Time is such an integral part of our day-to-day life, which over the course of many centuries has intrigued many philosophers and scientists. Time is also an integral part of IB research (see Eden, 2009; Hassett & Paavilainen-Mäntymäki, 2013; Middleton et al., 2011). However, while there have been efforts to understand it, to this date there is no agreement on “a single conceptualization of time” (Hurmerinta et al., 2016: p 807). Drawing on management and organization studies, IB scholarship has utilized two dominant conceptualization of time, which are ‘objective’ and ‘subjective’ time (Hassett & Paavilainen-Mäntymäki, 2013; Hurmerinta et al., 2016; Middleton et al., 2011).

Objective time is ‘clock time’, ‘linear time’, ‘Newtonian time’ or ‘chronos’ (Ancona et al., 2001; Dawson & Sykes, 2019; Zaheer et al., 1999), which researchers measure via clocks or calendars (Jaques, 1982). On the other hand, subjective time, also known as ‘kairos’, ‘experienced time’, or ‘non-linear time’ (Ancona et al., 2001; Dawson & Sykes, 2019; Shipp & Jansen, 2020; Zaheer et al., 1999), can be difficult to measure (Jaques, 1982). This is because it depends on perceived duration, who is experiencing it (e.g., a manager and subordinate may experience time different given the imbalances of power dynamics), and the context in which this ‘experienced’ time is unfolding (e.g., contextual differences between organizations in the eastern and western culture). Therefore, subjective time is socially constructed (Bluedorn, 2002; Dawson & Sykes, 2019; George & Jones, 2000; Sabelis, 2008; Shipp et al., 2009). For example in IB, Middleton & Colleagues (2011) discuss ‘entrepreneurial time’ and ‘time as cooperation’ as subjective time relevant for internationalization process. Entrepreneurial time is “knowledge of time as the personal experiences of the founder, or other key organizational members” (Middleton et al., 2011: p. 142); whereas time as cooperation is “the temporal constructions of executives imparting their desire to maximize the limited resources of their own firm through building relationships with other firms” (Middleton et al., 2011: p. 142).

While researchers can view objective and subjective as dichotomous (Holt & Johnsen, 2019), it can also be seen as complementary. In the field of IB, Hurmerinta &

Colleagues (2016) further elaborate the complementariness of objective and subjective time by proposing horizontal and vertical dimensions of time. While the horizontal dimensions can be construed as being ‘linear’ and allows for its ‘objective’ measurement, the vertical dimension adds contextual understanding as it incorporates “experiencing and interpreting time” (Hurmerinta et al., 2016: p 808). Therefore, Hurmerinta et al. (2016) see both perspectives as complementary, which when seen “together provide the richest understanding of events and actions in time” (p. 810). For example, “the year 1789 as a four-digit number in itself is not that interesting or informative” that is the objective time, “but what makes it special are the events, such as the French Revolution” that is the vertical time (p. 810).

Moreover, time plays an important role in formulating theory (George & Jones, 2000), and hence in the theorizing process. We define temporal theorizing as ‘time sensitive’ research that theorizes change (Pettigrew 1990; Ployhart & Vandenberg, 2010; Van de Ven 1992). This can be either descriptive or explanatory in nature (Perks & Roberts, 2013). We describe here two conventional temporal theorizing approaches in IB research, which emerge in the literature - process and variance research (Hassett & Paavilainen-Mäntymäki, 2013; Welch & Paavilainen-Mäntymäki, 2014).

Process research is an explicit time-based theorizing approach that leverages temporal sequence of events’ to understand a phenomenon (Pentland, 1995; Pentland, 1999; Van de Ven & Huber, 1990). Process research apart from capturing unfolding of events, can also capture causal interactions between different factors that lead to specific outcome(s) (Langley, 1999). Therefore, the aims of process research are several, including establishing a sequence of events, identifying mechanisms that explain how the sequence of events unfolded over time, understanding why the process progresses towards a particular outcome, and identifying broad patterns (Abbott, 1990; Langley, 1999; Langley et al., 2013; Van de Ven & Poole, 1995). As cogently explained by Cornelissen (2017a), by process research we do not refer to ‘boxes and arrows’, but rather a “model that lays out a set of mechanisms explaining events and outcomes” (p. 3). Therefore, in this chapter, we define process as “sequence of events leading to an outcome” (Langley, 1999: p. 692).

Theorizing for a phenomenon is also possible by comparing temporal units. An advantage of such a comparison is that it allows for variance research by ensuring contextual homogeneity so that factors that are affecting the phenomenon can be isolated (Eisenhardt, 1989; Yin, 2013). The logic is, therefore, to see how a change in the independent variable explains the variance of the dependent variable (Eisenhardt, 1989; Yin, 2013), while controlling for contextual factors. A classic example, where periods were compared for variance theorizing was in the case study of Middletown (Lynd & Lynd, 1929; Lynd & Lynd, 1937). In their seminal work, the Lynds systematically compared the same American medium sized city along a variety of outcome variables before the Great depression (Lynd & Lynd, 1929), and during the Great depression (Lynd & Lynd, 1937). Studying the same city along the same variables at two different time periods allowed them to control contextual factors (that were of no interest), and as a result allowed them to identify causal factors that were affecting activities with the start of the Great depression. In analogy to experimental studies, the temporal comparison in the Middletown case study can be termed as ‘theoretical replication’ (Eisenhardt, 1989; Yin, 2013) where the researcher selects two (or more) temporal units studying them along the same dependent and independent variables. Therefore, in this chapter, we define temporal variation as magnitude change in the dependent variable when the magnitude of an independent variable changes over time.

Overall, while some (yet not enough) attention has been given to ‘time’ in IB, there are still important gaps that this chapter seeks to address. First, we still do not have an understanding on ‘how’ IB qualitative researchers report time and ‘how’ they engage in temporal theorizing. Our chapter addresses these gaps by analyzing qualitative research papers published in IB, and in the subsequent section, we explain our analytical approach to synthesize evidence on temporal theorizing.

Analytical Approach

We draw upon relevant methodological literature (Gaur & Kumar, 2018; Hoon, 2013; Welch et al., 2011) to collect relevant data and analysis. For this, we follow four concrete methodological steps, which are framing the research question, locating relevant published articles, inclusion/exclusion criteria, and analyzing coding data.

In the first step, we formulate a broad research question: How do IB scholars engage in time-sensitive qualitative research? This question guided the selection of published articles and the coding of ‘relevant’ texts. In the second step, to locate all relevant published articles, we manually inspect all issues for both *Journal of International Business* and *Journal of World Business* from 1999 until 2019. We cover the last 20 years, because it is a long enough period to capture recent and emerging trends on temporal theorizing practices for qualitative research. This period also allows us to explore the full breadth and richness of temporal theorizing.

Moreover, we purposefully select the journals for three reasons. First, because both journals are highly ranked in the Academic journal guide 2019. On this premise, we assume that papers published in top tier journals have undergone sufficient rigorous review evaluation, and therefore represent best practices in the IB field. Second, they both are key journals that set (future) trends and establish (or question) methodological conventions in IB (see Eden, 2009 & *Journal of World Business* special issue on time, 2020). Third, previous methodological papers have used these journals for their own analysis (e.g., see Fletcher et al., 2018 and Piekkari et al., 2009).

In the third step, to select papers in our final database, we apply two inclusionary criteria (i) the paper has to be qualitative and (ii) the paper has to show an explicit interest in time. The former is a straightforward criterion to detect, which resulted in the exclusion of quantitative, mixed method papers, commentaries, editorials, book reviews, methodological and conceptual papers. However, for the latter criterion we had to scrutinize the whole paper with particular focus on the research question, methodological and analysis section of the paper. We also systematically search the two journals, which

are JIBS and JWB for qualitative academic articles containing (but not limited to the words) *time, longitudinal, temporal, dynamic, retrospective, process, change, real-time, prospective, past, present, future, phase, event, stage timeline, historical, history, period, process, sequence, and episode*. Our systematic search resulted in a sample of (only) 45 papers that exhibit an interest in time. We are struck by the limited number of qualitative articles that included the keywords above.

In the fourth step, for our analysis, we use the technique of qualitative content analysis (Gaur & Kumar, 2018; Kracauer, 1952; Kuckartz, 2014). We find qualitative content analysis to be a suitable method as it allows the classification of large textual data into categories (Weber, 1990). This technique also allows us to identify common themes and patterns (Krippendorff, 2004; Patton, 2002). Moreover, unlike quantitative analysis, we opt for a more interpretivist inductive way of analyzing the text that focuses on both the manifest and latent content (Drisko & Maschi, 2016; Krippendorff, 2004). Such an interpretive sensemaking allows us to generate deeper insights of the text (Kuckartz, 2014). We conduct qualitative content analysis via manual coding in three stages (Kuckartz, 2014; Patton, 2002; Short & Palmer, 2008).

In the first stage, we inductively analyze the text (Kuckartz, 2014; Patton, 2002) by undertaking open coding (Strauss & Corbin, 1998; Patton, 2002). The research question guides us in this stage. It is also during this stage that we write memos (Glaser & Strauss, 1967; Strauss & Corbin, 1998) and ‘marginal remarks’ (Miles & Huberman, 1994). We discuss these memos and remarks extensively amongst ourselves. We continue this deliberate open coding approach for an initial set of ten papers. This open coding approach allows us to generate a preliminary set of guiding questions to interrogate temporal theorizing for qualitative papers, and where necessary we refer the methodological literature. We purposefully develop guiding questions, which are critical in capturing the complexity of temporal theorizing. After multiple iterations via consensus coding, we finalize guiding questions to interrogate key methodological dimensions, which are temporal assumptions, investigated time, data collection timeline, temporal context, causal relationship, and treatment of investigated time. We define temporal assumptions as an

author's premise regarding time (e.g., objective time or/and subjective) (Mosakowski & Earley, 2000). Investigated time is defined as the time that the researcher analyzes in the paper. Data collection timeline is defined as the period in which the researcher collects the data; and we define temporal context as time-related factors that surrounds the phenomenon of interest (Johns, 2006; Michailova, 2011). Following are the finalized guiding questions.

- What temporal assumptions do authors indicate? (e.g., linear or objective time, non-linear or subjective time)
- Do authors explicitly state the investigated time, if yes what justification do they provide?
- Do authors explicitly state the data collection timeline?
- How do papers treat context and specifically the temporal context?
- What causal relationships do authors theorize? (e.g., process, variance, etc.) Do authors visually represent their analysis, if yes, how so?
- How do authors treat investigated time in the paper?

In the second stage, we select all relevant coding units, which are passages from papers that relate to our guiding questions. We paste these relevant passages in an excel file. However, one significant challenge we faced was the lack of disclosure on some critical guiding questions. For example, papers offered limited insights into temporal assumptions, investigated time, time needed for data collection, and temporal context of the study (i.e., the first four guiding questions). Wherever papers did not answer any of the important guiding questions, we marked it as 'not indicated' in the excel file. After collecting all the relevant text, we code our papers. This stage is still inductive in nature, however for sensemaking purposes we also refer to the existing literature. By the end of this stage, we develop a set of robust codes developed consensually.

In the third stage, we look at emerging codes to identify general themes and patterns, by clustering papers displaying similar set of codes into one group (Cornelissen, 2017b; Gaur & Kumar, 2018; Miles & Huberman, 1994). This activity of clustering forms the basis of our typology that we conceptualize (Cornelissen, 2017a). Finally, to ensure

reliability of our coding process, we also assign papers to two trained independent coders. We provide them with the coding scheme and coding guidelines. We incorporate their feedback into our coding rules wherever necessary, to ensure reliability of our coding process (Gaur & Kumar, 2018).

In the subsequent section, we explain our findings from the qualitative content analysis. We first explain a lack of disclosure on important time-related methodological dimensions. Using these insights, we then go on to explain our typology on temporal theorizing that we conceptualize.

Findings

Lack of disclosure on time-related methodological dimensions

In this chapter, we are struck by the limited number of qualitative articles that explicitly show an interest in time (i.e., only 45 of 1808 research articles published from 1999 until 2019). Moreover, we find a significant lack of disclosure regarding important methodological aspects as indicated in our guiding questions. This lack of reporting on key methodological aspects corroborates the concerns raised by methodological researchers that IB research is timeless and that time is taken for granted. We now explain our findings in detail below.

Regarding temporal assumptions, papers are not forthcoming whether time was being viewed objectively (i.e., linearly) or/and subjectively (i.e., non-linearly). In fact, in our sample only Haley & Boje (2014) explicitly discuss their temporal assumption to explain McDonald's internationalization process by engaging in storytelling to account for 'non-linearity' in time.

Beyond temporal assumptions, we find half of our analyzed papers disclosing investigated time (i.e., 32 of 45 papers disclose it) and data collection timeline (i.e., 27 of 45 papers disclose). Moreover, very few papers justify the selection of the investigated time (i.e., only 12/45 papers justify it). This is particularly striking, since a lack of disclosure on 'why' the investigated time was selected has consequences in ensuring

trustworthiness. A justification will provide confidence to readers that the selected set of years provides the necessary insight into the phenomenon of interest (Hassett & Paavilainen-Mäntymäki, 2013). The few papers that justify the selection of investigated time do so either because the phenomenon starts and ends during that time, or because the selected period entail ‘transformation’ or visible changes. For example, Büchel (2002) is interested in understanding a specific type of alliance. To understand its development they select a period from the initiation of the alliance until the alliance terminates on the premise that this period allows them to understand the unfolding of events. On the other hand, Sun et al. (2010) are interested in understanding change of ‘political embeddedness’, for which they select Joint Venture projects operating in China when markets were highly protected (i.e., 1980s), and during the late 1990s and early 2000s when the competitive market in China saw a dramatic change.

We also find lack of discussion regarding temporal context that is only 13 papers explicitly indicate it, as oppose to 35 papers that explicitly discuss spatial context. Papers that discuss temporal context do so by highlighting ‘chronology’, ‘timeline of events’ ‘rich mapping (of events)’ or ‘historical context’ or ‘major events’ (e.g., see Butler & Soontiens, 2015), which provides more nuance and background regarding the cultural, social, political and economic factors under which the case(s) is operating in. For example, Nardon & Aten (2008) want to understand the emergence of Brazil as the leading adopter of ethanol. For this, they not only indicate a list of important chronological events by tracing it to 19th century when ethanol was discovered in Germany; but also provide the chronological details that allows the reader to understand changing sociopolitical and economic conditions (e.g., the 1970s oil crisis) before adopting ethanol as a fuel.

Finally, for causal theorizing and treatment of time, identifying overarching patterns was straightforward, primarily because papers selected had explicitly indicated an interest in time (i.e., predominantly in their RQ). Therefore, with the exception of six papers, by reading the methodological, analysis and finding sections of the paper, we are able to identify the type of causal theorizing the paper uses as well as the treatment of time. Regarding causal theorizing, we find papers engaging in temporal variation or

process theorizing. However, beyond this our qualitative content analysis also finds papers engaging in stories that are void of process and temporal variations, or papers that engage in processes that highlight variational aspects of the phenomenon. Moreover, regarding treatment of time, we find researchers reporting four treatments. The first investigates interconnected events that capture changing characteristic/attributes and theorizes these events (evolutionary phases). The second investigates separate or interconnected clear-cut events to capture changing magnitudes but does not theorize these events (snapshots). The third investigates interconnected events to capture changing magnitudes and theorizes these events (variational phases). The fourth investigates separate or interconnected overlapping events to theorize the events (plots).

Towards a Typology of Temporal Theorizing in IB Qualitative Research

In this sub-section, we turn to a typology, which we generate from our qualitative content analysis. We trace the foundations of our temporal theorizing modes to time-related methodological dimensions identified from our analysis (i.e., the guiding questions). For this, we juxtapose the process dimension (represented by the y-axis in figure 7) and temporal variation dimension (represented by the x-axis in figure 7) to highlight four distinct forms of temporal theorizing - temporal co-variance, temporal evolution, temporal accumulation and temporal plot. To highlight the differences between the four modes of theorizing, we discuss methodological dimensions where differences were visible, namely treatment of time, causal relationships, temporal context, and visual representation (see table 18).

Before explaining each mode of temporal theorizing, it is important to note that our proposed typology and table does not assert that temporal theorizing is limited to our classification nor wants to assert a rigid 'template (Pratt, Sonenshein, & Feldman 2020; Welch & Piekkari, 2017). Rather, we see our typology as a first step towards providing researchers with the necessary methodological vocabulary and understanding (Cloutier & Ravasi, 2021) to engage in different styles of temporal theorizing, which future papers can

expand or change via reporting. Moreover, since we are also applying a conceptual lens to develop this typology, we do not assert that all analyzed papers would fall ‘perfectly’ into one of the four quadrants.

Figure 7: Typology on Temporal Theorizing

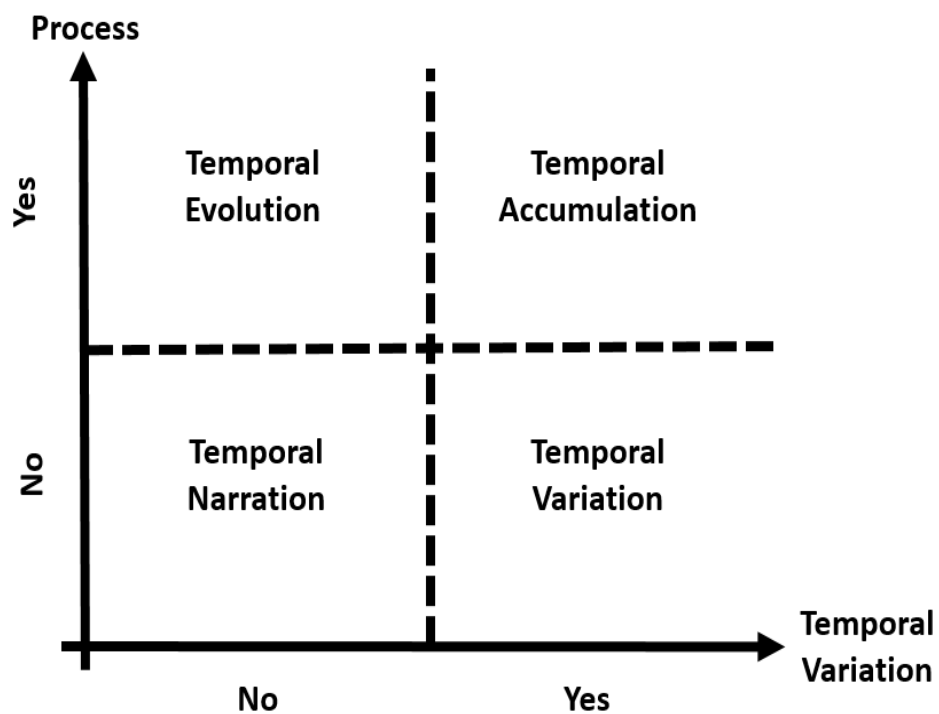


Table 18: Comparing four approaches to temporal theorizing in qualitative IB research

	Temporal Evolution	Temporal Co-variance	Temporal Accumulation	Temporal Plot
Treatment of time	Evolutionary phases (interconnected events captures changing characteristics /attribute)	Snapshots (separate or interconnected clear-cut events captures changing magnitudes)	Variational phases (Interconnected events captures changing magnitudes)	Plots (separate or interconnected overlapping events captures changing characteristics/ attributes)
Causal relationship	Process	Variation Cause and effect	Variational process	Stories (Contextualized causal relationships)
Temporal context	Temporal context shapes the phenomenon. Identifies specific temporal contextual factors	It does not affect the phenomenon, it is controlled	Temporal context within phases controlled but changes across phases	Temporal context embedded in the explanation. Temporal contextual and events are intertwined
Visual representation	Process diagrams (e.g., visual mapping, etc.)	Comparative diagram (e.g., typology, matrix, etc.) & path diagrams	Process diagrams & comparative diagram (e.g., typology, matrix, etc.)	Pictures, figures
Exemplars from Analyzed Papers	Butler & Soontiens (2015); Balogun et al. (2019)	Deligianni et al. (2015); Vivek et al. (2009)	Pant & Ramachandran (2017)	Haley & Boje (2014)

Temporal evolution

In this mode of theorizing, a researcher uses evolutionary phases to theorize events, periods, or years that are always interconnected with each other to capture changing attributes/characteristics. In terms of causal relationships, the interest here is to understand a process that is the ‘how’ and ‘why’ of phenomenon. For example, Butler & Soontiens (2015) are interested in understanding “the process of the establishment of an intentional strategic net, from what was initially a loose network, within the context of the offshoring of higher education services over time” (p. 477). For this, they identify three periods ‘pre-2005’, ‘2005–2012’ and ‘post-2012’ and identify changes in value creation, operational capabilities, and dynamic capabilities by highlighting the changes in characteristics/attributes.

This mode of theorizing also interrogates the role of temporal (or/and spatial) context and its effect on the phenomenon of interest. In this regard, the researcher may identify specific temporal (or/and spatial) contextual factors to develop ‘in-depth’ insights on the relationship between specific contextual factors and the phenomenon of interest. For example, Zhang & Dodgson (2007) want to understand rapid and early internationalization (REI) and its relationship to “firm’s technological, national, and cultural context” (p. 337).

For visual representation, a researcher may resort to process diagrams, primarily because process diagrams can capture both the causal chains of the phenomenon as well as the evolutionary phases that binds them.

Temporal Co-variance

In this mode of theorizing, the researcher uses snapshots to understand temporal variations. Unlike phases, researchers treat snapshots as a means to an end, where the goal is not to understand or theorize events, but to leverage them to identify temporal variation among constructs. These events can be independent of each other (e.g., Spanish Flu outbreak and COV-ID19 outbreak), or interconnected. Regarding causal relationships, the interest is to capture cause and effect relationships, for which a researcher assigns a ‘magnitude’ (e.g., low/high, absent/present, etc.) to capture changes of a construct(s). For example, Deligianni et al. (2015) wants to understand the dynamic relationship between different knowledge types and strategies by comparing five small firms. They unpack temporal variation by identifying two “major phases of growth for each firm” (p. 495), on which they compare the magnitudes (i.e., low/high) of technological knowledge, market knowledge and foreign market knowledge. While the paper compares them across two snapshots the paper does not theorize these two ‘major growth phases’, rather is interested in understanding the temporal variation of focal constructs.

Moreover, to capture these temporal variations, context needs to be actively controlled. For example, Deligianni et al. (2015) control spatial context, which includes features of the firm’s founders and “circumstances at the time of start-up” (p. 495). For visual representation, comparative diagrams (e.g., typology, matrix, table, etc.) can be used to highlight temporal variation. Beyond comparative diagrams, path diagrams are used. Path diagrams like process diagrams elucidate the causal relationship (see Deligianni et al., 2015); however, unlike process diagrams path diagrams do not provide a visual representation of how events bind these causal relationships.

Temporal Accumulation

In this mode of theorizing, researchers use variational phases to theorize events, periods, or years that are always interconnected with each other to capture change in magnitudes. For example, investigating events before, during and after the French revolution to understand changing level (or magnitude) of violence. Moreover, regarding causal relationships the interest is in a variational process. For this, the researcher theorizes the phenomenon as well as the phases (i.e., the years, events or periods) that binds these causal relationships. For example, Pant & Ramachandran (2017) using Hindustan Unilever (the Indian subsidiary of Anglo-Dutch multinational Unilever) are interested in “changing patterns in the articulation of identity claims by subsidiary leaders and develop a process model of how subsidiaries navigate identity duality over time” (p. 664). For this they identify three distinct ‘epochs’ or variational phases (1959–1968, 1969–1991, and 1992 onwards). The paper goes on to classify each epoch on two dimensions and highlights the magnitude for “pressures from domicile logic (low/high) and pressures from enterprise logic (low/high)” (p. 672) to understand identity duality.

Moreover, to capture temporal variations, in this quadrant temporal (or/and spatial) context within each phase is controlled, while letting it vary across phases. For visual representation, a researcher can use a process diagram to capture both the causal chains of the phenomenon as well as variational phases that binds them. To highlight temporal variations, a research may use comparative diagrams (e.g., typology, matrix, table, etc.) as well. Therefore this mode of temporal theorizing uses both a variational and processual lens to engage in temporal theorizing.

Temporal Plot

This mode of theorizing is void of both variation and process, and papers here use plots in which events can be distinct or overlapping. For example, Haley & Boje (2014) use stories to understand how McDonald created narrative of internationalization to mitigate risks of Foreign Direct Investment. They identify different stories that they capture through

different space-time conceptions, which overlapped sometimes. Moreover, the interest here is to explain and describe causal relationships in their contextual richness. As such, this quadrant is more context focused on providing ‘thick’ and ‘detailed’ in-depth contextual understanding of the phenomenon of interest (Dyer & Wilkins, 1991; Siggelkow, 2007; Welch et al., 2011). It is because of this that temporal (or/and spatial) context is embedded in the explanation. This means that unlike temporal evolution a researcher may not distinguish contextual factors from focal constructs as sharply. As, Haley & Boje (2014) indicate that they are using ‘contextualized explanations’ proposed by Welch et al (2011). Consequently this “generated explanations that preserved context while recognizing cause-and-effect contingencies which we saw as dynamic, holistic interactions between storytellers” (p. 1118). Moreover, for visual representation, this mode of temporal theorizing can use pictures and/or figures (see Haley & Boje, 2014).

Discussion and Lessons Learned

The aim of this chapter is to understand temporal theorizing in the field of IB. In light of this, we find reporting of four time treatments, which are snapshots, evolutionary phases, variational phases, and plots. Moreover, we conceptualize different modes of temporal theorizing for qualitative temporal theorizing, which are temporal co-variance, temporal evolution, temporal accumulation, and temporal plot. We believe that our typology on temporal theorizing extends our understanding beyond the IB theorizing practices of variance and process research (Welch & Paavilainen-Mäntymäki, 2014).

Now we discuss four lessons learned. Our aim is to facilitate an academic discussion on ways to enhance trustworthiness of temporal theorizing.

Lesson learned#1: The need for disclosure on time related methodological aspects

A significant finding is that papers fell severely short when it came to discussing explicitly ‘time-related’ methodological aspects. Due to this lack of disclosure, it was difficult for authors of this paper to understand the ontological and epistemological position of papers analyzed. In this regard, our findings corroborate Blazejewski (2011) analysis. Even though her analysis was on a small number of longitudinal papers in *Journal of Business Studies* (i.e., four longitudinal papers from 2003-2007), she reached to the same conclusion that few papers “contain clear information on the temporal design of the case study, data collection and data analysis methods” (p. 265). We find this lack of reporting problematic for several reasons.

First because it is important for ensuring trustworthiness. As Pratt, Kaplan & Whittington (2020) indicate that qualitative researchers should indicate clearly their analytic choices. However, it is also problematic for promoting pluralistic styles of theorizing (Van Burg et al., 2020). Pluralism is necessary for temporal theorizing, primarily to capture ‘multiple conceptions’ of time (George & Jones, 2000; Holt & Johnsen, 2019). In this regard, a lack disclosure on ‘analytical choices’ (Pratt, Kaplan & Whittington, 2020), stifles methodological creativity, which affects in what other novel ways a researcher could have recombined different methodological aspects (i.e., bricolage, see Pratt, Sonenshein & Feldman, 2020). This impedes ‘novel theorizing’ (Van Burg et al., 2020), which can threaten the vibrancy and relevancy of IB research (Delios, 2017; Welch & Piekkari, 2017).

Lesson learned # 2: The need to understand participant’s experience of time

Scant methodological attention has been given to ‘how’ researchers report their treatment of time. In this regard, our chapter makes an important methodological contribution by elucidating four time treatments, which are snapshots, evolutionary phases, variational phases, and plots. However, we caution here that this is not an exhaustive list. Beyond

this, it is also important to understand the participant's experience of time. While, ironically, there is some methodological literature on this (Bluedorn, 2002; Middleton et al., 2011; Shipp & Jansen, 2021), discussion of participant's experience of time in actual practice is scant.

We contend that understanding participant's 'experienced time' is imperative for a holistic understanding of the phenomenon's temporal dimension. As Hörning, Ahrens and Gerhard (1999) rightly indicate, "we cannot understand time by looking at it alone but rather by analyzing the ways people are involved in everyday life" (p 293). It is therefore important to understand how individuals (that a paper investigates) experience time. Beyond the individual, researchers should also explore empirically how time is experienced in collective units such as the organization or industry. A lack of empirical investigation in 'subjective time' only decreases possible theorizing gains, which affects trustworthiness. This is because discussion on 'subjective time' along with the 'clock time' represents "the full range of temporal experiences with which organizational members contend on a day-to-day basis" (Ballard, 2009: p. 205). Consequently, by not accounting for it, there is a risk of formulating 'incomplete' theories.

Lesson Learned# 3: Theorizing Temporal Context

While the methodological literature in IB has devoted significant discussion on context (Plakoyiannaki et al., 2019; Poulis et al., 2013; Welch et al., 2011), in IB, we still lack an understanding of what is 'temporal context' (Sonnentag, 2012). In our analysis, this lack of 'transparency' regarding temporal context was particular stark. We argue that an understanding and incorporation of temporal context is important for two reasons in ensuring trustworthiness.

First, temporal context is as an important factor for determining boundary conditions of a theory (Whetten, 1989; Sonnentag, 2012). While the methodological literature discusses extensively 'analytical generalizability' or 'theoretical generalizability' that is to what extend findings from qualitative research can be applied

to another case (Tsang, 2014); there is less of a discussion on what we call ‘temporal generalizability’ that is for what period does this theory hold (Zaheer et al., 1999). For example, under what changes in temporal context will the theory change or not change? And why? These important questions can only be ascertained if temporal context is relayed.

Second, beyond boundary conditions, temporal context can also add ‘depth’ and ‘nuance’ (Johns, 2006; Sonnentag, 2012) or ‘temporal thickness’ on how time dependent contextual factors affects the participant’s experience of time. For example, the concept of seasonality may hold a different meaning for participants in a university than for participants in a company that is manufacturing garments. This nuance of temporal context can further extend at the level of the individual, team, department, industry and even country. Such an understanding of temporal context allows researchers to generate theories that are more ‘complete’.

Lesson Learned# 4: Using Prospective Designs to Theorize the Future

We find both methodological and practice research falling short of explicating how to leverage prospective designs to theorize the future. While theorizing of the past and present exists in methodological and practice research, future oriented theorizing is missing. We elicit three benefits of engaging in a prospective outlook.

First, a future outlook on theorizing can help researchers ascertain boundary conditions for the proposed theory (Zaheer et al., 1999). Second, beyond boundary conditions, researchers can also theorize stronger causal relationships by engaging in prospective designs. This may be possible via forecasting or predicting future trends and future implications. For example, Goodall et al (2004) trace the development of MBA education in China. Since they see China in the “the foreseeable future, an important overseas market for MBA providers” (p. 318), they engage in providing future trends. Such predictions, are important for strengthening causal claims. Moreover, “certain events and sequences reoccur periodically” (Hassett & Paavilainen-Mäntymäki, 2013: p.

2); and as a result by engaging in prospective designs the nature of temporality can be understood better that is whether the phenomenon is cyclical in nature or not. Third, engaging in future theorizing is also beneficial for industry practitioners who can incorporate these insights in their organizational policies. Primarily because “foreseeing the future, and anticipating and estimating upcoming events, have for years been the tools for gaining advantage for many firms, ranging from industrial manufacturing to consumer marketing to business-to- business consulting” (Hassett & Paavilainen-Mäntymäki, 2013: p. 2).

At present, for qualitative research there is no methodological discussion on prospective designs. In this regard, one possible avenue worth exploring is the use of counterfactuals or thought experiments (Folger & Turillo, 1999; Shepherd & Suddaby, 2017; Shepherd & Sutcliffe, 2011; Weick, 1989) to predict future likely causal relationships. Therefore, through counterfactuals a researcher may ascertain how in the future different constructs may reconfigure themselves, until what time period the theory holds, and whether the phenomenon is temporally cyclical or not.

Conclusion

Time is an inherent dimension of IB phenomenon. Therefore, it comes as no surprise that time plays an important methodological role in developing trustworthy in-depth theoretical understandings that is it plays a central role in the theorizing process. Albeit, IB and other fields of management research have largely ignored this particular role of time at the interface of methodology and the qualitative theorizing process. As a result, we lack diverse processes of theorizing, despite the vocal calls for such approaches (see, e.g., Welch & Piekkari, 2017; Brannen & Doz, 2010; Delbridge & Fiss, 2013; Piekkari et al., 2009; Ragins, 2015; Welch et al., 2011). The result is a significant lacuna when it comes to methodological guidance on qualitative temporal theorizing in IB (Blazejewski, 2011; Eden, 2009; Hassett & Paavilainen-Mäntymäki, 2013).

By grounding our understanding in actual research practices, this chapter provides important methodological insights on ‘how’ IB scholar treat the investigated time and

engage in temporal theorizing. Regarding the former, we find four different time treatments, which we contend is not an exhaustive list as it only represents actual research practices, and therefore can be broadened via more methodological discussions. These are snapshots, evolutionary phases, variational phases, and plots. Regarding the latter, we elucidate a conceptual framework on the possible different modes of temporal theorizing, which are temporal co-variance, temporal evolution, temporal accumulation, and temporal plot. We see our conceptualization only as a first step towards moving beyond the conventional modes of theorizing, which have largely revolved around process and variance research.

Moreover, since time by nature is a 'pluralistic' concept, we need pluralistic modes of temporal theorizing to produce 'complete' theories, which will only be possible via increased disclosure on time-related methodological aspects. Such open practices is important as "science thrives on diverse, eclectic methods of discovery in general" (Folger & Turillo, 1999: p. 755). We hope that in this regard, this chapter as a first provides much needed methodological clarity and guidance on 'pluralistic' modes of temporal theorizing to ensure vibrancy and relevancy of IB research.

Part III: Promoting Pluralism

Chapter VI*: Getting back up! Managing the Relationship between Technology and Organizational Identity

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Abstract

What is the relationship between technology and identity, especially when that technology singularly defines the organization's identity? What happens if that technology fails, and how is the organization's identity managed? To address this theoretical puzzle, we use a longitudinal qualitative case study to analyze the 2008 Large Hadron Collider (LHC) breakdown at the world's largest particle physics laboratory, CERN. The LHC is arguably the most complex technology ever built, which took 20 years to build with a scientific collaboration of 10,000 scientists worldwide. Therefore, CERN's successful recovery from this breakdown offers important insights into the dynamic relationship between technology and organizational identity. In this chapter, we contribute to the literature on identity work and structuration view of technology, which will benefit the academic community and practitioners working in high technology companies.

Keywords: Organizational identity, identity work, technology, longitudinal, single case study

Introduction

Organizational identity is a fundamental aspect of organizational life, primarily because it reflects how external and internal stakeholder view an organization (Hsu and Hannan 2005). Therefore, it is consequential for the success and survival of an organization. It, therefore, comes as no surprise that there is much interest in management and organizational scholarship in understanding organizational identity (e.g., see Albert & Whetten, 1985; Brown et al., 2006; Brown, 2015; Davide & Canato, 2010; Dutton & Dukerich, 1991; Gioia & Thomas, 1996; Gioia et al., 2013; Gioia et al., 2000; Pratt, 2012; Pratt et al., 2006; Ravasi & Schultz, 2006; Ravasi & Canato, 2015; Tripsas, 2009). Moreover, technology is also pervasive in organizations, so much so that identity of many well-known organizations would appear to be based on a very specific technology (e.g., from Dyson, Tesla, NASA to Zoom). The ‘Big Five’ alone, namely Google, Amazon, Facebook, Apple, and Microsoft, have been identified as “Tech giants” or “Big tech”, in part because of their important role in our global economy (Economist, 2012; Economist, 2018; Economist, 2019a; Economist, 2019b), but also because their identity largely revolves around technology.

However, in spite of this, there is only very limited understanding among organizational theorists on the relationship between technology and organizational identity (Gal et al., 2014; Kilduff et al., 1997; Nag et al., 2007; Ravasi & Canato, 2015; Ravasi & Schultz, 2006; Tripsas, 2009). In particular, still missing is an understanding of the relationship between technology (i.e., an organization’s flagship project) and organizational identity. Moreover, we also don’t know what happens to this relationship, when this technology breaks down.

To understand these questions, we empirically analyze an ‘extreme’ or ‘outlier’ case (Eisenhardt, 1989; Gibbert et al., 2021), which is the 2008 breakdown of the Large Hadron Collider (LHC) at Conseil Européen pour la Recherche Nucléaire (CERN). This qualitative case study is well suited as CERN’s organizational identity was primarily driven by the LHC (a flagship technological project) since CERN had been working (only) on the LHC from the early 1990s (Evans, 2009). Therefore when the LHC broke down

just nine days after its first run in September of 2008, CERN found itself in an organizational disruption that, if mishandled, could have threatened the organization's reputation. Given that CERN successfully recovered, we see an opportunity to study this period in CERN's history, which will expand our theoretical understanding on the relationship between technology and organizational identity. For this purpose, we use the lens of identity work, which can be seen as a set of activities through which identities are created, repaired, maintained, revised, presented, shared, adapted, sustained or strengthened (Gawer & Phillips, 2013; Kreiner et al., 2015; Snow & Anderson, 1987; Sveningsson & Alvesson, 2003; Watson, 2008). In light of our analysis, we find that CERN was engaging in two types of identity work, namely *identity distancing* and *identity embracement* for different parts of the LHC, namely low-tech and high-tech. In this regard, this chapter makes five important theoretical contributions.

First, we propose a theoretical framework that theorizes the relationship between technology and identity work, mainly when the organization is singularly engaged with that technology, which also then breaks down. In this regard, our framework advances the literature on social constructionist perspective of organizational identity, and structuration view of technology. Second, our theoretical framework addresses the 'theorizing dearth' on technology (Anthony & Tripsas, 2016; Orlikowski & Scott, 2008), which is surprising, given technology's ubiquitous nature and its integral role in the survival and success of an organization (Henderson & Clark, 1990). Third, in this chapter, we interrogate an empirically under-researched context of a large scientific research organization. In this regard, our study offers a unique opportunity to study physicists and engineers. By probing this unique context, we contend that our investigation offers a unique understanding of the relationship between technology and identity work (Brown, 2015). Fourth, since we are undertaking a longitudinal case study research, we consider the temporal dimension in our theorizing process that has largely been missing when it comes to identity research (Pratt, 2012). Hence, our longitudinal study allows us to explore the dynamic relationship between technology and organizational identity, which played a crucial role in CERN's recovery from the 2008 LHC breakdown. Finally, our results are theoretically

generalizable to various technological companies (e.g., Apple, Google, Amazon, Facebook, Microsoft).

Theoretical Background

Organizational Disruption (Crisis)

Organizational disruption (or crisis) has been defined as low probability but high impact events (Pearson & Clair, 1998; Sheffi, 2005; Williams et al., 2017), which signals an organization's inability to deliver on its core responsibilities or/and a lack of adherence to ethics (Gillespie & Dietz, 2009). A common feature of disruption is that "an expectation of continuity is breached" (Weick et al., 2005: p. 414). Therefore, these disruptive events are attention-grabbing, primarily because it threatens an organization's viability and legitimacy (Anheier, 1999; Pearson and Clair 1998), which can also attract unnecessary media, public and regulatory attention (Lekka & Sugden, 2011). As such, disruptions are costly (Shepherd, 2003; Edmondson, 2011). Therefore, while being rare, these events are significant (Christianson et al., 2009; James et al. 2011; Rerup & Zbaracki, 2021). For example in 1982, Johnson & Johnson (J&J), after the death of seven people due to cyanide-laced Tylenol, had to recall 31 million bottles leading to a loss of more than a hundred million dollars. Therefore, given the high cost of disruptions, it is not surprising to see increasing scholarly interest in understanding disruptive events (Anheier, 1999; Sheffi, 2005; Wan & Yiu, 2009; William et al., 2017).

However, the contextual focus of disruption literature has focused mainly on high-risk industry (William et al., 2017), with few studies looking outside of this context (e.g., see Christianson et al., 2009, or see Rerup, 2009). A high-risk context is a context where a crisis leads to collateral damage (e.g., aviation industry see Haunschild & Sullivan, 2002; nuclear power plants, see Weick & Sutcliffe, 2001; space shuttle programs, see Boin & Fischbacher-Smith, 2011, Vaughan, 1996; natural disasters, see Shepherd & Williams, 2014). However, our study moves beyond this context and looks at a disruption where there was no collateral damage.

Technology

Technology plays an important role in organizational theory, primarily because of its ubiquitous nature in organizational life, and hence "is considered a central element for understanding organizations" (Davide & Canato, 2010: p. 50). Following Griffith (1999: 474), we define technology as "tools, machines, and/or techniques for instrumental action". Therefore, as per this definition, we classify the LHC as technology.

However, beyond this definition, to extend our understanding of technology, we use the structuration model of technology (DeSanctis & Poole, 1994; Orlikowski, 1992). Structuration model of technology views "technology as embodying structures (built in by designers during technology development), which are then appropriated by users during their use of the technology" (Orlikowski, 2000: p. 405). Therefore, this model highlights the duality of technology and interpretive flexibility (Orlikowski, 1992). The duality of technology rejects the physical versus social view of technology, and sees both as an integral part for understanding technology. The quote by Orlikowski (1992) captures this meaning fully that "technology is physically constructed by actors working in a given social context, and technology is socially constructed by actors through the different meanings they attach to it and the various features they emphasize and use." (Orlikowski, 1992: p. 406). Hence, interpretive flexibility recognizes that there is 'flexibility' in how technology is interpreted within an organization, which is constrained by the technology's material characteristics, institutional context, and the difference in knowledge and power within the organization (Orlikowski, 1992).

Therefore, in light of the structuration model of technology, in this chapter, we operationalize our definition of technology on two dimensions. First being scope or artifact (i.e., the hardware and software aspect of the technology), and the second being the use or role (i.e., the social interaction between technology and organization) (Orlikowski, 1992; Orlikowski, 2000). While the technological scope or artifact is more stable on how it is defined, the role or usage of technology can change over time, given the organization's

circumstances. Therefore, the perception of technology is influenced by how users' understand its properties and functionality (Orlikowski et al., 1995).

Organizational Identity and Identity Work

Organizational identity is a fundamental aspect of organizational life, primarily because it reflects how external and internal stakeholder view an organization (Hsu and Hannan 2005), which is consequential for the success and survival of the organization. It, therefore, comes to no surprise that there is much interest in the management and organizational scholarship to understand organizational identity or the 'organizational self' (e.g., see Albert & Whetten, 1985; Davide & Canato, 2010; Dutton & Dukerich, 1991; Gioia & Thomas, 1996; Gioia et al., 2013; Gioia et al., 2000; Pratt, 2012; Pratt et al., 2006; Ravasi & Schultz, 2006; Ravasi & Canato, 2015; Tripsas, 2009).

Nevertheless, despite this, the literature is also quite fragmented on how to theorize organizational identity. These are due to two competing narrative streams. One stream views organizational identity as being central, enduring and distinctive (CED) (Albert & Whetten, 1985; Brown, 2015) and contends that it is for this reason that changing an organization's identity can be challenging (Ashforth & Mael, 1996; Whetten & Mackey, 2002). Whereas the other stream views organizational identity as "evolutionally adaptive, malleable or even perpetually fluid and shifting" (Brown, 2015: p. 26), and hence contends that it can change (Dutton & Dukerich, 1991; Gioia & Thomas, 1996; Fiol, 1991; Gioia & Chittipeddi, 1991; Gioia et al., 2000; Nag et al., 2007; Ravasi & Schultz, 2006; Whetten & Godfrey, 1998).

In this regard, 'identity work' offers a bridging concept that can be used both to maintain and/or change organizational identity. Identity work is defined as a set of activities through which identities are created, repaired, maintained, revised, presented, shared, adapted, sustained or strengthened (Gawer & Phillips, 2013; Kreiner et al., 2015; Snow & Anderson, 1987; Sveningsson & Alvesson, 2003; Watson, 2008). Recent works have investigated the relationship of identity work with organizational stigma (e.g., see

Tracey & Phillips, 2016), role-related interactions (e.g., see Ibarra & Barbulescu, 2010), and institutional logics (e.g., see Gawer & Phillips, 2013). However, this relationship has not been investigated with technology. Even though, for example, Tripsas (2009) and Ravasi & Canato (2015) explicate the relationship between organizational identity and technology, both papers do not theorize the relationship of technology with identity work. Moreover, it is still unclear whether the relationship between identity work differs with different parts of the same technology? How this relationship evolves if this technology breaks down, especially if the organization's identity is being singularly defined by that technology? Therefore in light of these missing theoretical pieces, our chapter seeks to answer the following research question.

RQ: What is the relationship between identity work and technology when the technology singularly defines the organization's identity, and how does it evolve when this technology breaks down?

Methodology

In this chapter, we conduct a qualitative longitudinal single case study research, which is a detailed empirical investigation of a phenomenon in its naturalistic context for a given period (Burgelman, 2011; Yin, 2013). We use this method for three reasons. First, our study is interested in theory building (e.g., Eisenhardt, 1989; Yin, 2013). Therefore the method allows us to get "closer to theoretical constructs" (Siggelkow, 2007: p. 22). Second, the single case study methodology is suited for developing an in-depth contextualized understanding of a phenomenon (Dyer & Wilkins, 1991; Welch et al., 2011; Yin, 2013). Third, longitudinal qualitative study research is seen as an appropriate method to investigate identity and technology (Orlikowski, 2000; Ravasi & Canato, 2015).

Selection of Case and Temporal Embedded Units

We select the case of the 2008 LHC breakdown at CERN for three reasons. First, from theoretical sampling, our case is an organization where technology (i.e., the LHC) is an integral part of its organizational identity, which also broke down in 2008. As a result, we want to explore and understand the relationship of identity work with different parts (i.e., high and low tech) of the same technology. Second, from a context perspective, which we explain in the following sub-section, the 2008 LHC breakdown at CERN can be seen as an 'extreme case', and hence revelatory (Eisenhardt, 1989; Yin, 2013). Finally, we had preferential access. Therefore, we can transparently document and collect data on the phenomenon of interest, allowing us to theorize rigorously on the relationship between identity work and technology.

We also select two different temporal embedded units, which are the periods before and after the breakdown. We select these two temporal embedded units so that they can be compared to capture changes in the relationship between identity work and technology. These changes are then used to propose a processual theoretical framework that theorizes the relationship between technology and organizational identity.

Context of the Case

CERN is the world's leading laboratory for particle physics, which is interested in understanding 'what the universe is made of?' and 'how does the universe work?'. To answer these questions, CERN built the world's largest and most powerful scientific instrument, the Large Hadron Collider, which collides protons to recreate the universe's conditions a millionth of a second after the Big Bang (Derbyshire, 2010). The 2008 LHC breakdown at CERN provides us with a unique context for four reasons.

First, the LHC is considered the world's largest and most powerful particle accelerator because such a particle accelerator had never been built before (Tuertscher et al., 2014). The previous particle accelerator LEP (Large Electron Positron) at CERN could

collide electrons at an energy of 100 GeV, whereas the LHC can collide protons at an energy of 7TeV (i.e., 7000 GeV). Since such a particle accelerator had never been built before, the LHC was a prototype. Moreover, the particle accelerator was 'large'. It had 1800 superconducting magnets installed in a 27km circumference, four detectors (i.e., CMS, ALICE, ATLAS and LHCb) to capture the proton collisions (see figure 8). To put the size of a detector in perspective, the CMS detector is 21 meters long, 15 meters wide, 15 meters high, and weighs 14,000 tonnes (CERN, 2020) (see figure 9). Keeping these numbers in mind, it comes as no surprise that it took CERN 20 years to build the LHC with a collaboration of over 10,000 scientists and engineers from 100 countries (Telegraph, 2008). Secondly, the LHC is CERN's flagship project. This means that the organization is only working on this solo project and can be considered in tandem with an organization that is manufacturing only one product. Third, CERN operates in a unique organizational structure, in which collaboration boards distribute the work of building different components of the machine to institutes and universities around the world (Tuertscher et al., 2014). Therefore, there is "no direct hierarchical control over Individual Institutes", an organizational structure that "has worked surprisingly well over the years considering the fairly loose managements structure" (Evans, 2014: p. 20). Finally, CERN is a large scientific research organization. As such empirical work on scientific organizations that undertake 'research' and then construct projects out of this research have not been explored.

Therefore, by using this unique and undertheorized context of a large research organization CERN, we can build deeper insights into the relationship between identity work and technology.



Figure 8: Aerial view of the Large Hadron Collider (LHC) at CERN

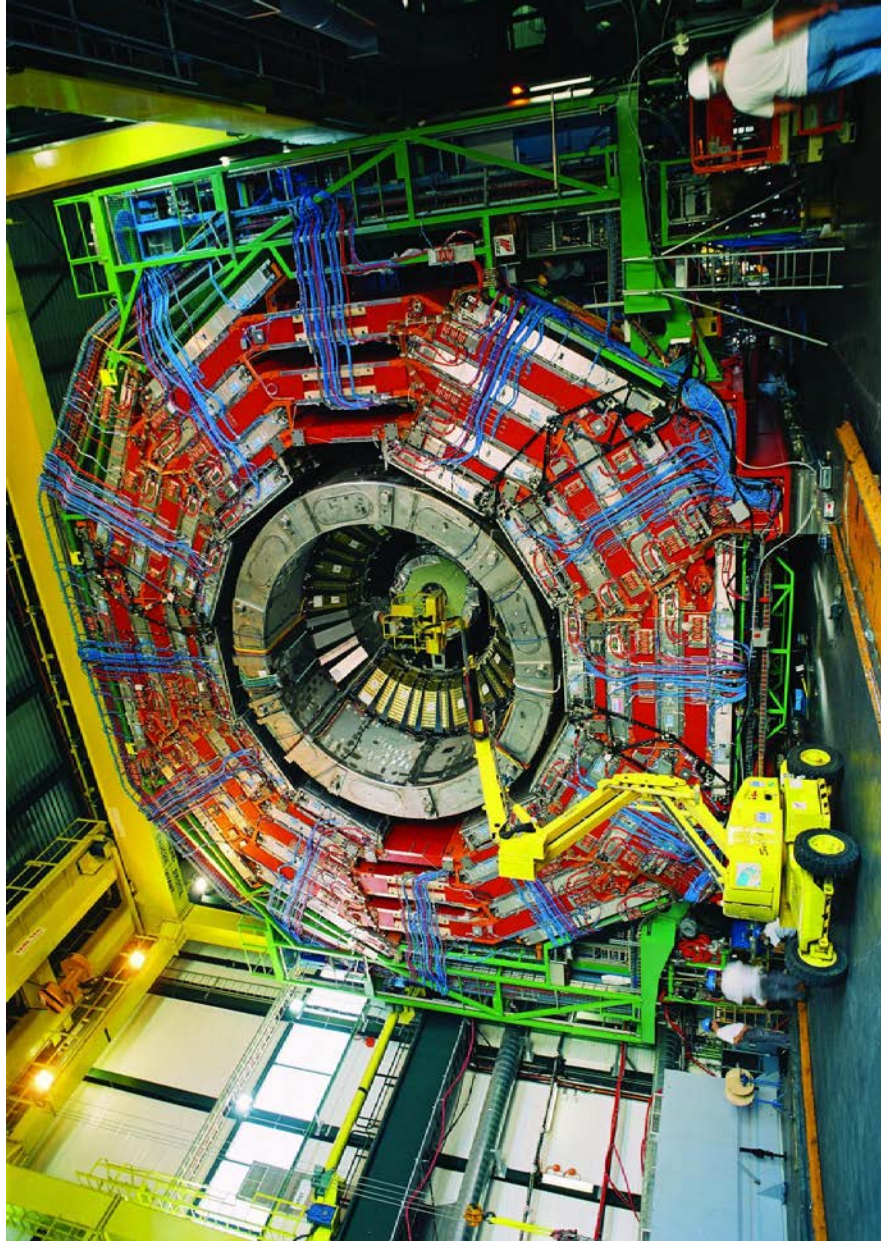


Figure 9: CMS detector at CERN

Data Collection for this Project

We explain below the different types of data, which we collected from 2019 until 2021. Our foremost reason to capture varied data sources was to develop a deeper understanding of the phenomenon and context. Moreover, the different data types allowed us to triangulate the data.

1) *Elite Interviews:* We collected data from elite informants who occupy important top managerial positions (e.g., see Garg & Eisenhardt, 2017). Interviews with elite informants are considered strategically resourceful data, especially when the intent is to theorize at the organizational level (Aguinis & Solarino, 2019). Moreover, elite interviews allow for a better understanding of critical organizational events primarily because elite informants are knowledgeable (Useem, 1995). We have conducted 18 interviews, including the former Director-General of CERN, former Head of the CERN communications, Director Accelerator CERN, Head and Deputy Head of the Beams Department at CERN, former CMS spokesperson, project leaders, CMS Commissioning and Run Coordinator.

2) *Archival data:* We collected archival data, which includes relevant internal documents on the breakdown and organizational policies and relevant articles in the CERN courier (an internal magazine at CERN). We have 74 internal documents that are relevant to the breakdown, the Large Hadron Collider, and CERN. This data provided insights into the context of the breakdown and the culture of the organization.

3) *Media articles:* To collect relevant media clippings, we searched FACTIVE search engine tool that provided us with relevant news articles on the LHC.

4) *Videos:* We have attended two relevant webinars at CERN and have a documentary on the LHC by National Geographic.

5) *Field notes:* We have conducted two comprehensive field visits, in which we visited important CERN sites that included the control room from where the LHC is operated.

6) *Books:* Finally, we referred to four books on the LHC, including ‘Who care about Particle Physics? Making Sense of the Higgs Boson, the Large Hadron Collider and

CERN' by Pauline Gagnon, 'A Zeptospace Odyssey A Journey into the Physics of the LHC' by Gian Francesco Giudice, 'The Large Hadron Collider: A Marvel of Technology' by Lyndon Evans and 'Engines of Discovery A Century of Particle Accelerators' by Andrew Sessler and Edmund Wilson. The first and second books are written for the general public to understand the discoveries that are taking place in the LHC at CERN. The third book discusses the civil engineering and logistical challenges that were faced when constructing the LHC. The fourth book provides a historical context on particle accelerators, in which the LHC is discussed.

Analytical approach

We use established qualitative coding techniques (Gioia, Thomas, Clark, & Chittipeddi, 1994; Langley, 1999; Lincoln & Guba, 1985; Strauss & Corbin, 1998). To identify relevant categories on identity work and technology, we begin our analysis by open coding our data (Patton, 2002; Strauss & Corbin, 1998). We examine the text inductively and extensively (Kuckartz, 2014; Patton, 2002). The inductive part of the analysis is incremental and detailed, for which we did consensus (among the three researchers) for all emerging codes. We define code as "a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (Saldaña, 2015: p. 3). For our initial coding, the research question act as a guiding post. In the second stage, we develop first-order codes, representing categories closer to the informant's meaning (Van Maanen, 1979). In this stage, we perform axial coding (Strauss & Corbin, 1998) to aggregate the first-order codes into higher-order or second-order themes (Corley & Gioia, 2004), which we theoretically confirm by looking at extant literature on identity work and technology. By the end of this stage, we can develop a final set of general theoretical concepts (Elo & Kyngäs, 2008; Patton, 2002) that informs our theoretical framework on identity work and technology. We also highlight that the coding process is iterative, in which we go back and forth between the codes, textual and visual data, and relevant existing literature (Strauss &

Corbin, 1998). Hence, we continue this constant process of verification and refinement until a clear theoretical model for identity work and technology emerged.

Findings

The Large Hadron Collider (LHC) at CERN is considered the world's most powerful and complex particle accelerator, capable of creating the earliest conditions of the universe. With the help of a large international collaboration of more than 10,000 scientists from more than 100 countries, the machine took 20 years to build. Therefore, our analysis shows that CERN's organizational identity revolved around the Large Hadron Collider primarily because this was the only 'flagship' project that CERN was working on. Hence, the organization's identity was singularly being defined by this technology; and we label CERN's organization identity as 'working with complex technology', in which complex means novel technology or as one interviewee described it as "working at the technological frontier". Our analysis provides two important insights, which also forms the basis of our theoretical framework explained in the subsequent section.

First, while CERN viewed the LHC as the only technology or machine that it was working on, the members however associated differently with different parts of the same technology (i.e., the LHC). Our interviewees often classified the LHC as having high-tech aspects and low-tech aspects. To further interrogate this classification of low-tech and high-tech, we use the structuration model of technology. We classify the low-tech and high-tech on the 'scope' (i.e., the hardware) and 'use' (i.e., installation) dimensions (see figure 10). Our analysis suggests that before the breakdown the 'scope' and 'use' of the 'low tech' (i.e., the splice) was seen as simplistic, since most physicists and engineers considered it to be a simple electrical procedure that any electrician could have done (See quadrant C of figure 10). Because of this view, the work and the quality assurance were delegated to third-party contractors. In contrast, the 'high tech' (i.e., the detectors), which was complex both in 'scope' and 'use', was not outsourced (See quadrant B of figure 10).

On the 10th of September 2008, the LHC started running for the first time. LHC's inaugural run also received significant media coverage. However, just nine days after its

first run, the LHC broke down. This incident propelled CERN into an organizational disruption that threatened its organizational identity and survival. Upon a technical assessment of the breakdown, CERN found that the fault was due to the 'low tech' (i.e., the splice). Upon this revelation, we find that CERN reassessed how it viewed the 'low tech'. While the 'low tech' scope was still seen as simplistic, CERN acknowledged the complexity of 'use' (see quadrant D of figure 10). Primarily because the installation procedure was being done in a novel environment that is in a tunnel, which was 100 meters underground and 1.5m in width.

Therefore, the technological breakdown did not change the organization's identification with complex technology; however, it changed the organization definition of 'complex technology'. From the literature, we can explain this by invoking the term used by Gioia & Colleagues (2000) of 'identity having continuity', which they contend is different from an 'enduring identity'. While the latter exhibits permanence, the former acknowledges that the core elements of identity, while not changing, can change in interpretation of its 'labels'. This is what was happening in our empirical case, in which the breakdown changed the organization's interpretive label for 'low tech'.

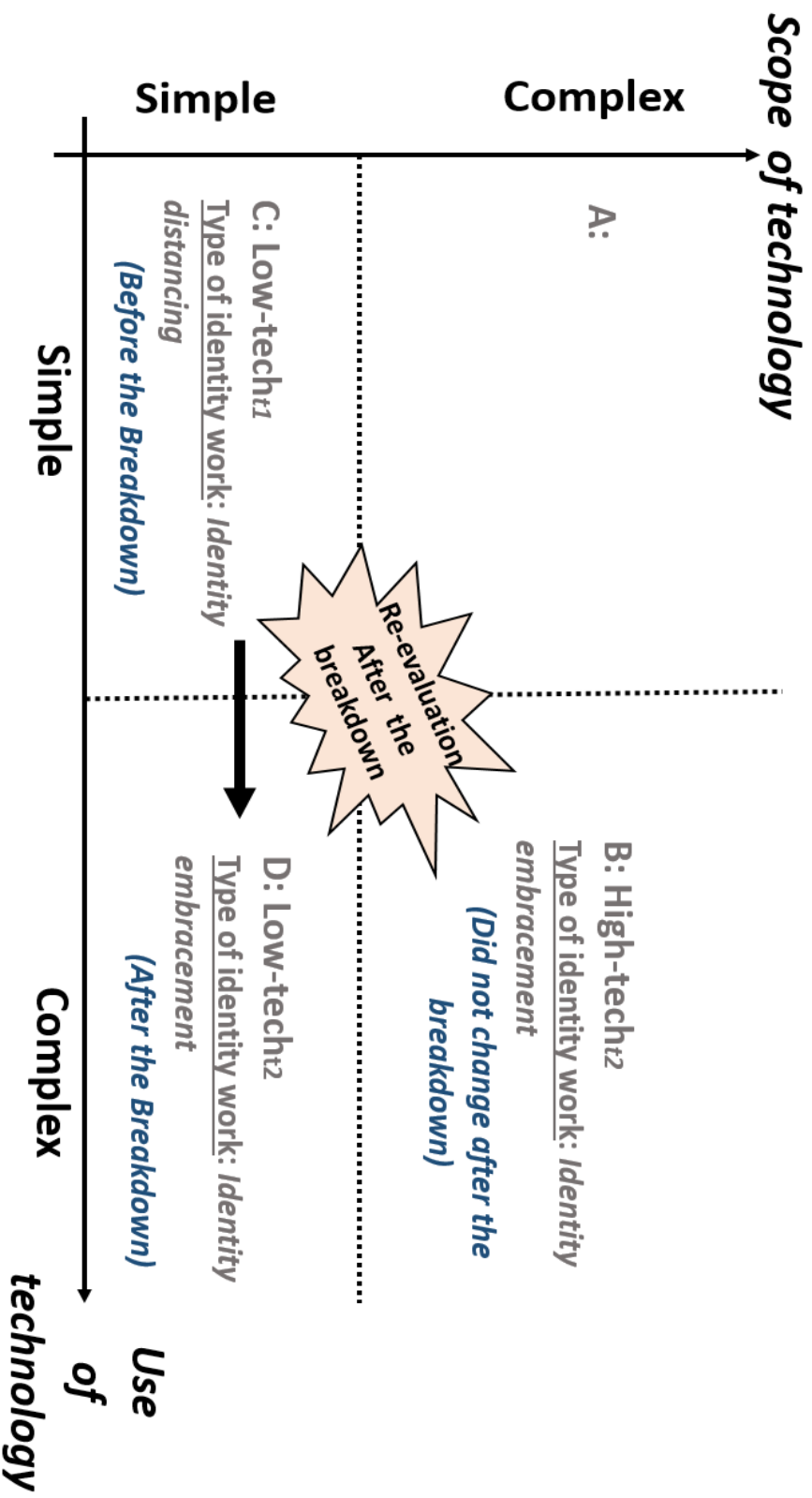


Figure 10: CERN's relationship with the low-tech and high-tech aspects of the LHC

Second, our analysis shows that CERN's identity work revolved around *identity distancing* and *identity embracement*. We provide the data structure in figure 11 and 12 that shows how we reached these theoretical categories. Regarding the low-tech, we see the organization engaging in *identity distancing* before the breakdown. We contend this to be the case, primarily because the low-tech lacked complexity, hence novelty, and therefore the low-tech was seen as being 'mundane/trivial'.

"The work on the splice was seen as mundane." (Gillies)

"This is also because people don't want to spend time on plumber technology. Therefore people are not interested to put attention to it." (Rossi)

Moreover, since the low tech was not seen in line with the organization's identity, it was seen fit to withdraw personnel and financial resources from this aspect of the technology. Hence the work and quality control was delegated to third party contractors by engaging in 'resource distancing'.

"The splice was the last job but resources were limited and severe time frame, which is why visual inspections were done by independent team. However the independent visual inspection was removed and inspection was later being done by a team of the same company who was connecting the splices. Visual inspection by independent people was removed ...because time and money were running out, as a result of which quality control lowered." (Rossi)

Consequently, since CERN viewed the technology as 'mundane/trivial' and was undertaking 'resource distancing', we see the organization engaging in *identity distancing*, in which the organization does not see low-tech aspects of the machine aligning with its organizational identity. Due to this, we see CERN delegating the work of quality control of low-tech to third party contractors.

However, after the breakdown of the LHC triggered by the low-tech, CERN reevaluated its relationship with the low-tech. We see *identity embracement* kicking in from two sources. First, the breakdown brought forth a reevaluation of how the organization was defining 'complex' technology by acknowledging that the splices or

low-tech were complex from an installation or use perspective. Primarily because the installation was primarily being done under ‘novel’ conditions even if the scope or hardware of the technology was not as novel per se.

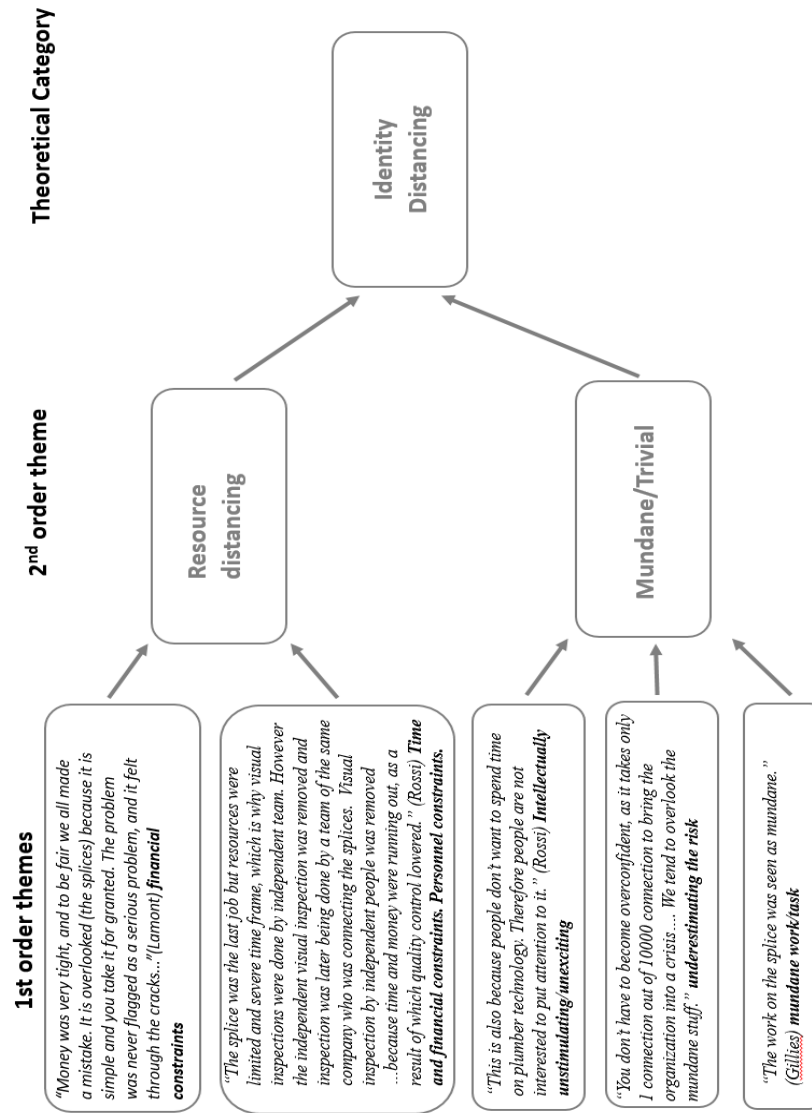
“Secondly connecting the splices was a complicated procedure primarily because you don’t have space in the tunnel, and you are working 100m underground. You also don’t have much space for the tools and fingers.” (Heuer)

Second, we see the organization embracing collective responsibility of the fault regarding the low tech (i.e., the splice).

“We took very quick decision about not firing anyone and to not finger point. There are thousands of people involved in installing the LHC, and the conditions for installing it were very difficult. (before the breakdown) we didn’t have sufficient quality assurance, and firing the people would not help, since our quality assurance systems should have picked it up and it didn’t, which at the end is the organization’s responsibility. We recognized the gap in our quality assurance, and now we have many steps to ensure that it doesn’t happen again by not doing blame game. The organization took the collective blame.” (Collier)

Therefore, by ‘embracing complexity’ of the low-tech and by ‘embracing collective responsibility’, we see that the organization was engaging in *identity embracement*, which also became the reason for CERN’s successful recovery from the breakdown.

Figure 11: Data Structure of Identity Distancing



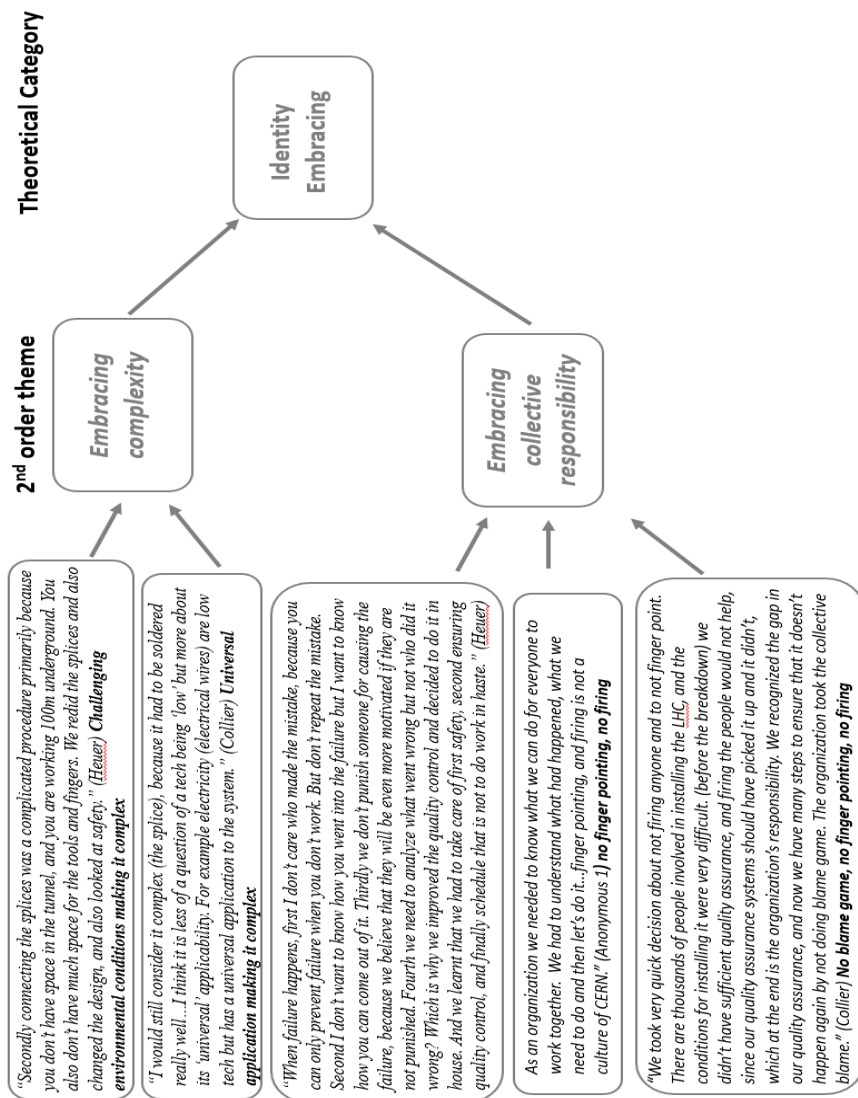


Figure 12: Data Structure of Identity Embracement

Discussion

In light of the theoretical categories that we formulated via coding, we theorize the relationship between identity work and different parts of the same technology and the dynamic process through which this relationship evolved after the breakdown of the technology (see figure 13).

Therefore, in this section, we discuss our theoretical framework that theorizes the relationship between identity work and technology. Our theoretical framework shows that before and after the breakdown, technology was being viewed through the prism of the organization's identity, which was about dealing with complex technology. However, what changed was how the organization interpreted the label of complexity. Moreover, while the overall machine that is Large Hadron Collider was being considered as complex, different parts within the same machine (i.e., the low-tech and high-tech) were being labelled as simple or complex based on the novelty of the hardware (i.e., the scope of the technology). Consequently, CERN was viewing the 'low-tech' as 'mundane/trivial' and engaged in 'resource distancing'. Therefore, we see CERN engaging in 'identity distancing' from the low-tech aspect of the LHC.

However, the breakdown of the LHC brought forth a reevaluation of how the organization was defining 'complex' technology. It did so by acknowledging that the splices (i.e., the low-tech aspect of the machine) were complex from an installation perspective (i.e., the use of technology), if not from the hardware perspective (i.e., the scope of technology). Moreover, we see the organization embracing collective responsibility of the fault regarding the low-tech or the splice. Therefore, this renewed relationship with the low-tech aspect of the machine, which was now being viewed as 'complex', allowed the organization to invoke *identity embracement*. Consequently, the low-tech aspect was seen as part of the organization's identity.

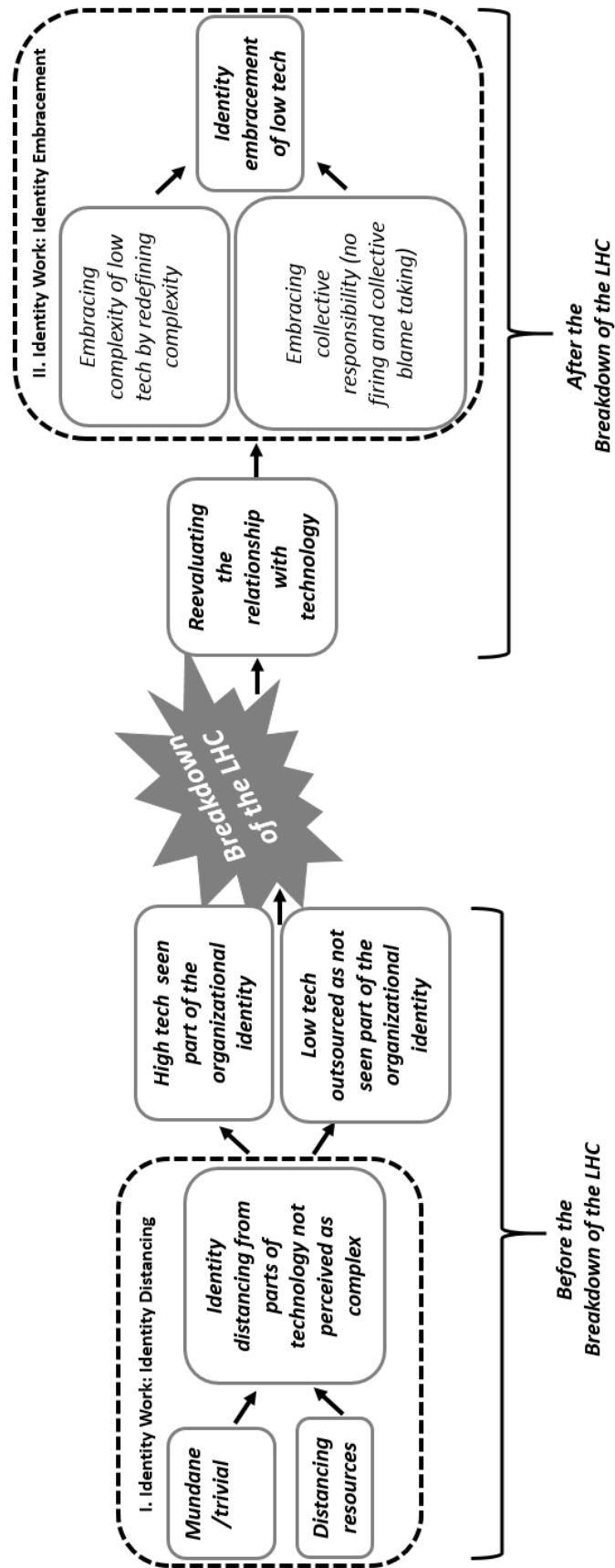


Figure 13: Theoretical Framework on the relationship between identity work and technology

Therefore, our theoretical framework extends the literature on identity work and the structuration model of technology by indicating the relationship they share and how this relationship evolved during an organizational disruption. Moreover, our theoretical framework has four important implications.

First, an organization can have different relationships with different parts of the same technology, even when that technology is singularly defining the organization's identity. It is because these relationships are being evaluated through the prism of its organizational identity. Therefore, if a technological part does not align with the organizational identity, we will see the organization distancing itself while embracing parts that do align. It is an important insight, whose understanding we can also extend to brands (or products), where an organization can choose to affiliate with certain aspects of the brand (or product) while distancing itself with others that the organization does not deem as representative of its identity. However, this we believe can also extend beyond the product of the organization. For example, the Grappa brand distanced itself from its core market segment, which was 'peasants and alpine soldiers', to be perceived as being a higher status brand than a lower status brand. Moreover, this *identity distancing* and *identity embracement* mechanism can also help us understand why specific organizations would choose to be more sustainable and make an effort to incorporate 'green practices' than other organizations. We construe that organizations that have 'green practices' or 'sustainable practices' as part of their organizational identity will be more proactive in shifting to these sustainable practices.

Second, identity work can be done by reinterpreting the labels defining the identity without changing the core elements. As it was evident in our empirical case, CERN did not undergo a significant reevaluation of its organizational identity of "dealing with complex technology", even after undergoing a major organizational disruption. This insight contradicts the belief that organization's undergo identity evaluation and change in a period of crisis (Albert & Whetten, 1985). It did not appear to be the case during the 2008 LHC breakdown, where the core elements of CERN's identity did not change.

However, the breakdown forced the organization to reevaluate the meaning of its identity labels (i.e., what is a complex technology).

Finally, at this point, we believe that CERN's successful recovery is attributable to the fact that it did not have to redefine who it was but instead had to reinterpret the labels of its organizational identity. We contend that if CERN had to change the core elements of its organizational identity, the process would have been more challenging, making the recovery process even more difficult. For example, we speculate a reason for the slow response from the corporate sector, over the past few decades, on global climate change is largely because 'sustainability' was not part of these organizations' identity. However, now due to growing pressures, we find that organizations explicitly incorporate this element as part of their core identity to tackle the issue better. For example, British Petroleum in 2020 added on their "who we are" page of their website that "We want to help the world reach net zero and improve people's lives".

Conclusion

In this chapter, we use a unique and undertheorized context of a large research organization CERN, to theorize the relationship between identity work and technology by empirically investigating the 2008 Large Hadron Collider (LHC) breakdown at CERN. In this chapter, we find two essential insights. First, an organization can identify differently with different parts of the same technology through the prism of its organizational identity. Secondly, even when in crisis, an organization may not experience changes in its organizational identity; however, it may reinterpret the labels of its organizational identity. We see these insights as consequential and transferable to technology companies and organizations that have experienced disruptions. Therefore, we hope that our work will benefit not only the academic community but also practitioners.

Discussion & Conclusion

Discussion & Conclusion

Summary of the Thesis

We provide summaries as well as important takeaways of each chapter. We then discuss the limitations of this thesis, future research directions, and finally provide our concluding remarks.

Summary of Chapter I

This chapter examines transparency for quantitative research papers. We define transparency as the necessary information to be revealed to stakeholders (Pirson & Malhotra, 2011). Understanding transparency is important for several reasons. First, it allows research to gain acceptance in the academic literature (Aguinis et al., 2010; Aytug et al., 2012). Second, transparency plays an important role in determining ‘how’ rigorous the findings are. Moreover, it allows replicability, independent verification and fair comparison of the research (Banks et al., 2016; Goldfarb & King, 2016; Miguel et al., 2014; Nosek et al., 2015).

However, given the importance of transparency, the academic community still lacks an understanding of it (Aguinis et al., 2018; Aguinis & Solarino, 2019). Therefore, in this present chapter, we move beyond the anecdotal recommendations and undertake an analysis of reporting practices. We highlight reporting practices that are being underreported, therefore providing the necessary guidance for authors, reviewers, and editors. Finally, this chapter also investigates the relationship of transparency with article citations.

To understand reporting practices and their link to article citations, we analyze 200 papers published in five leading management journals (1997–2016): *Academy of Management Journal*, *Administrative Science Quarterly*, *Journal of Management*, *Organization Science*, and *Strategic Management Journal*. We target these top journals because the review process is very rigorous, and hence published papers in these journals

represent best practices. Moreover, these journals are gatekeepers of research trends. Finally, we select the period from 1997 until 2016 for our analysis. It provides a long duration to account for time effects and is also long enough for citations to get accrued (Walters, 2011).

To create a list of reporting practices, we interviewed editors. Moreover, manuals, textbooks, and journal articles (e.g., Aguinis et al., 2018; APA, 2008; Cook & Campbell, 1979; Hancock & Mueller, 2010; Nosek et al., 2015; Sterba et al., 2011) also aided in the formulation of the reporting practices that we investigate in this chapter. We code reported practices by assigning ‘yes’ if it was transparently reported and ‘no’ if it was not reported. From these codes, we calculate frequencies (%) to identify what was being reported well enough and what was being underreported. Finally, we also create two separate transparency measures, the first being a simple arithmetic mean, and the second being a ‘robust index’ created from Item Response Theory (IRT) (De Boeck & Wilson, 2004; Foster, Min, & Zickar, 2017). We use IRT because it can measure unobservable characteristics. Since we assume that transparency is not directly observable but can be measured via observable indicators (i.e., our transparency criteria), we see IRT as an appropriate technique to develop the second (robust) index. To understand the relationship between transparency and article citations, we apply a negative binomial regression. We use this model because the dependent variable, article citations, is a count variable (discrete) that has overdispersion.

In this chapter, we find that some of the least frequently reported criteria were *presence/absence of outliers, the explicit mentioning of the unit of analysis, the voluntariness of study participation, and the discussion of the presence/absence of missing data*. Criteria that were reported the most (i.e., by more than 80% of papers) were *description of data collection, details on the study context, the study’s response rate, the provision of descriptive statistics and correlations, and the variable reliability indicators*. Beyond this, in Chapter I, we show that the more transparent a paper is, the higher its impact (i.e., the number of article citations received).

Summary of Chapter II

Chapter II builds on Eisenhardt's (1989) seminal paper on case study research, which distinguishes multiple case study design from single case study design. For the field of management, Eisenhardt's (1989) paper is one of the most highly cited methodological paper (i.e., over 50000 citations on Google scholar). Given its citations, it is not surprising that case study research is the most popular qualitative research method in management (Welch et al., 2013, Tsang 2014). However, despite this, the method has drawn widespread criticism, especially concerning rigor (e.g., Bettis et al., 2014; Gibbert et al., 2008; Piekkari et al., 2009). This chapter, therefore, examines the link between case study design (i.e., research design), rigor (i.e., quality of research), and impact (i.e., citation counts).

To understand this interrelationship, we apply content analysis on 173 qualitative case study articles published from 1996 until 2006 in *Academy of Management Journal*, *Administrative Science Quarterly*, *Organization Science*, and *Strategic Management Journal*. Moreover, we use the Ordinary Least Squares regression to understand the role of different rigor criteria and case study design on impact. Moreover, we use Logistic regression to understand differences in reporting of rigor criteria for different case study designs. As a result of our analysis, this chapter makes important contributions by offering a new empirical classification on case study design and discusses seven key rigor criteria that can make qualitative case study designs more rigorous and impactful.

Regarding empirical classification, in this chapter we move away from the classical distinction of case study design as multiple versus single case study design. We further probes this classification in light of our content analysis of published qualitative case study papers. During our first round of coding, the well-known classification of single versus multiple case study designs was used. However, as more papers were analyzed, it was clear that this conventional distinction of case study design crudely captured actual practices of published papers. This is because single embedded design in terms of analysis is very similar to papers using multiple cases, as both use a 'replication logic' for comparative inference. Therefore, this chapter extends *replication logic*, usually reserved for multiple case study design (Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Yin,

2009) to single embedded case study. While comparisons for the multiple cases are happening at the case level, single embedded case study comparisons happen within the case. Therefore, replication can happen at the case level (as in a multiple holistic design), or at the level of the embedded unit of analysis (as in a single-embedded design), or both (as in a multiple embedded design). On the other hand, there is no replication in the single holistic design as there is only one case. Therefore, in this chapter, we use the empirical classification of case study design that is *replication and non-replication*.

Regarding rigor criteria, this chapter identifies seven broad criteria. We identify these criteria based on previous studies and method papers (Cook and Campbell, 1979; Denzin, 2017; Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Eisenhardt et al., 2016; George and Bennett, 2005; Gibbert et al., 2008; Gibbert & Ruigrok, 2010; Lincoln & Guba, 2005; Yin, 2009). We see these criteria as necessary irrespective of the paradigmatic camp that the researcher prescribes to. These rigor criteria are *indicating and providing the rationale for selecting the case and sub-cases, providing a rationale for data selection, doing data triangulation, identifying focal and non-focal constructs, and discussing the context of the case*.

In this chapter, none of the rigor criteria have a significant impact on article citations. Our robustness checks yield the same results. Upon probing case study design, which does have a significant positive impact on article citations, we find that there are differences regarding disclosure of different rigor criteria between *replication* and *non-replication design*. Overall, replication design papers do better at explicitly reporting the rationale for *selecting the case, rationale for selecting the data, and identifying non-focal constructs* compared to non-replication design papers.

Summary of Chapter III

In this chapter, we examine selection strategies for qualitative single case study research. We interrogate the case study method, primarily because it is a popular qualitative method for theory building (Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Siggelkow, 2007; Welch et al., 2013; Yin, 2009). Moreover, case selection from rigor standpoint is important (Fletcher & Plakoyiannaki, 2011; Gerring & Cojocaru, 2016; Gibbert et al., 2008; Herron & Quinn, 2016), even more so for the single case as quite literally there is only one case to select. Despite the acknowledged importance of case selection, we know little about case selection strategies in action (Fletcher et al., 2018).

To address this, in Chapter III, we investigate all single case study papers (N=300) published between 1999-2019 in *Organization Studies*, *Organization Science*, *Academy of Management*, *Administrative Science Quarterly*, and *Strategic Management Journal*. In this chapter, we highlight that apart from the case level, theorizing is also taking place for sub-units (or embedded units) within the case (i.e., 102 papers). Our analysis reveals that for case level selection papers provide three reasons, which are *selection on constructs*, *context*, and *access*. In contrast, at the sub-unit level, papers motivate selection on *different sub-units*.

By disentangling different selection practices ‘in action’ for one method (the single case study), we find that selection is happening on two levels. In this regard, we attempt to distinguish differences in selection strategies for these two levels. However, this chapter does not push for a (rigid) list of selection strategies that researchers need to use, rather the chapter advocates for disclosure regarding the selection of the case and sub-units.

Summary of Chapter IV

One of the alleged strengths of single case study research is to provide foundational theory-building blocks. However, to this date, an understanding of the theorizing prowess from the single case study research is missing. In this regard, we highlight the different theorizing styles from the single case study research.

For this, we interrogate the classical debate on case study research between Dyer & Wilkins (1991) and Eisenhardt (1989, 1991). With this interrogation, we tease out two tensions from this debate. The first tension is on case study design (i.e., single holistic versus single embedded), and the second tension is on theorizing output (i.e., ‘better stories’ or ‘better constructs’). We use these two tensions to conceptualize our typology on theorizing styles from the single case study research. Consequently, we find four distinct theorizing styles: *narrative theorizing*, *variational theorizing*, *story corroboration theorizing* and *counterfactual theorizing*. While the former two represents the archetypical theorizing styles, the latter represents the two additional possible ways of undertaking theorizing from the single case study research.

Therefore, in this chapter, we contribute to the theorizing styles from single case study research and advocate for pluralistic approaches (Cornelissen, 2017b; Delbridge & Fiss, 2013; Welch et al., 2011). Embracement of pluralistic theorizing styles will allow for powerful and meaningful theoretical contributions in the field of management.

Summary of Chapter V

Time plays an important role in theorizing for the field of International Business (IB) (see Doz, 2011; Welch et al., 2011). However, methodologists have stressed the issue of ‘timelessness’ or ‘forgetfulness of time’ in IB. In this regard, we address ‘how’ qualitative IB scholars use temporal theorizing. We apply qualitative content analysis on published qualitative papers in two top tier IB journals, namely *Journal of World Business* and *Journal of International Business*.

In this chapter, we indicate a lack of disclosure on key time-related methodological aspects, including *temporal assumptions*, *investigated time* (i.e., period analyzed), *data collection time*, and *temporal context*. We also indicate that papers report time via *evolutionary phases*, *snapshots*, *variational phases*, and *plots*. *Evolutionary phases* are interconnected events that capture changing characteristic/attributes and theorizes these events. *Snapshots* are separate or interconnected clear-cut events to capture changing magnitudes but do not theorize these events. *Variational phases* are interconnected events that capture changing magnitudes and theorizes these events. *Plots* are separate or interconnected overlapping events to theorize the events.

Finally, we propose a typology on temporal theorizing in qualitative research. We formulate this typology by juxtaposing the process dimension and temporal variation dimension. Our typology offers four distinct temporal theorizing styles: *temporal covariance*, *temporal evolution*, *temporal accumulation*, and *temporal narration*. In this chapter, we distinguish these four styles of temporal theorizing on four methodological aspects, namely *treatment of time*, *causal relationships*, *temporal context*, and *visual representation*.

Summary of Chapter VI

Both organizational identity and technology are seen as fundamental aspects of organizational life. Despite this, an understanding regarding the relationship between technology and organizational identity is still missing (Gal, Blegind & Lyytinen, 2014; Kilduff, Funk & Mehra, 1997; Nag, Corley & Gioia, 2007; Ravasi & Canato, 2015; Ravasi & Schultz, 2006; Tripsas, 2009). Moreover, if that technology singularly defines an organization's identity, it is not known what will happen to this relationship if this technology breaks down. To understand this lacuna, we analyze a longitudinal qualitative single case that is the 2008 breakdown of the Large Hadron Collider (LHC) at Conseil Européen pour la Recherche Nucléaire (CERN). The LHC was CERN's flagship project, which was central to its organizational identity.

This centrality was because the LHC being one of the most complex machines, took 20 years to build with the collaboration of over 10,000 scientists from around the world. Given that the machine broke down just nine days after its first run, CERN found itself in an organizational disruption, which if mishandled could have jeopardized the organization's credibility and reputation. Therefore, to understand the relationship between LHC and CERN's organizational identity, we invoke the concept of identity work, which is a set of activities through which identities are created, repaired, maintained, revised, presented, shared, adapted, sustained or strengthened (Gawer & Phillips, 2013; Kreiner, Hollensbe, Sheep, Smith & Kataria, 2015; Snow & Anderson, 1987; Sveningsson & Alvesson, 2003; Watson, 2008).

Our analysis of interviews, participatory observations, archival data, media articles, webinars, documentaries, and books reveal that CERN's organizational identity revolved around the LHC because it saw itself 'working with complex technology'. An important insight we find is that while LHC was considered as the flagship project, CERN however associated differently with different parts of the same technology (i.e., the LHC). This relationship with different parts of the same technology was driven through the prism of CERN's organizational identity. In this regard, the organization viewed the LHC as comprising of high-tech and low-tech aspects. To interrogate this, we classify the low-tech and high-tech aspect of technology on 'scope' (i.e., the hardware) and 'use' (i.e., installation) dimensions (see figure 10). Moreover, the organization engages in two kinds of identity work for different parts of the Large Hadron Collider - *identity distancing* and *identity embracement*.

Before the breakdown, *identity distancing* was being invoked only for the low-tech, primarily because low-tech was seen as simple on the scope and use dimensions. Whereas *identity embracement* was being invoked for the high-tech, which was seen as complex on both the scope and use dimensions. However, after the breakdown, which was diagnosed as having started from the low-tech, the organization reevaluated its relationship with the low-tech. In this regard, CERN began viewing the low-tech as complex on use, primarily because the installation procedure was carried out in a novel

environment that is in a tunnel, which was 100 meters underground and 1.5 m in width. In this regard, CERN was able to invoke *identity embracement* for low-tech after the breakdown. To conclude, the breakdown did not change the organization's identity of associating itself with complex technology; rather, it led to CERN reassessing its definition of 'complex technology'.

Takeaways

Important Takeaways from Chapter I

There are three important takeaways from this chapter. First, there is a tendency of 'de facto' reporting. This means that papers report some of the criteria consistently. However, overdoing it can also be counterproductive. As indicated by one of the editors interviewed that "It is possible for people to overdo things as well. One can be 'scientistic', using methods for the sake of methods. This sort of overelaboration is not necessary." In the spirit of endeavoring towards pluralistic research, this chapter intends to start a needed conversation on transparency as opposed to providing a rigid checklist for reporting. As such, reporting practices should base on researchers' decisions and the context of the field, which researchers should relay transparently.

The second takeaway is that more transparent papers are being cited more. One interpretation of this is because higher transparency allows for an easy appraisal of the research work. This also increases confidence in the results of the paper (Bråten et al., 2011; Nicolaou & McKnight, 2006). Therefore, higher transparency allows papers to stand out from other papers

The third takeaway is that since the management field does not have established reporting practices, one can expect variation in what is being reported or not reported by different papers. The lack or absence of standards was corroborated by many of the editors. Consequently, it is not possible to underscore when 'academic misconduct' kicks in. Therefore, from the perspective of stakeholders, the way forward is transparent reporting to avoid the labelling of questionable research practices (Banks et al., 2016; Miguel et al., 2014; Nosek et al., 2015; O'Boyle et al., 2014).

Important Takeaways from Chapter II

There are three important takeaways from this chapter. First, the existing case study design classification of multiple versus single case study design does not capture the reality of published articles. In fact, in this chapter, we highlight similarities in the treatment of single embedded case study design and multiple case study designs. This observation is surprising since the debate on case study research has revolved mainly around pitching multiple case study design against single case study design. Therefore, in this chapter, we argue for an empirical classification of design, which rests upon replication. In the spirit of pluralistic research, we advocate that the merits of each design should rest on rigor. This is because each design offers a different inferential lens, which can be important in developing scientific knowledge.

The second takeaway here is that unlike quantitative articles (Bergh et al., 2006), there is no significant relationship between rigor and article citations for qualitative case study papers. One possible reason might be that since papers analyzed were published in top-tier journals, citations for qualitative papers are not driven by the quality of a paper but by the paper's theoretical contribution. Another probable reason could be that agreement still lacks on what constitutes a high 'quality' qualitative article.

The third takeaway here is that replication design is being cited more than non-replication design. Without further examining this, one may falsely conclude that *replication* design is being unduly favored over *non-replication* design, mainly because of the dominant 'positivistic paradigm in management research. However, in this chapter, we further probe disclosure on rigor criteria for replication design and non-replication design. In this regard, *replication* papers are more transparent than non-replication papers. This leads to the important takeaway that pluralistic designs will only be accepted if papers are transparent in reporting key rigor criteria. For this reason, we urge for an agreement on rudimentary rigor criteria, which can be the impetus for promoting pluralistic designs and make articles impactful.

Important Takeaways from Chapter III

There are three important takeaways from this chapter. First, it is essential to discuss case selection explicitly, primarily because disclosure will allow different stakeholders to evaluate whether the case or sub-units selected can theorize about the phenomenon of interest. This chapter contributes by proposing a two-level case selection framework to provide two crucial methodological clarity. First, selection strategy differs for the single holistic and single embedded designs. Second, disclosure of selection strategies both at the case level and within the case (or embedded units) is crucial for rigorous theorizing from the single case study research.

The second takeaway of this chapter is that while at the case level most papers explained their selection of the case, there was also homogeneity in reporting certain selection strategies (e.g., selection on constructs) than others (e.g., context and access). Within the case, sub-units are selected because these sub-units are different (i.e., theoretical replication), therefore, we lack an understanding regarding the selection of similar sub-units (i.e., literal replication). In this regard, the chapter suggests more methodological discussion on selection strategies on both levels for the single case study research to promote pluralistic approaches in research.

The third takeaway is the absence of selecting failed cases. There is a bias towards selecting successful cases that only impoverishes our understanding of the phenomenon (Mahoney & Goertz, 2004). Therefore, in this chapter, we urge future studies to move beyond selecting the 'best' or 'most' successful case.

Important Takeaways from Chapter IV

There are three important takeaways from Chapter IV. First, single case studies offer a wide array of theorizing styles, this is because single case studies are flexible. Therefore, different theorizing styles can be used to address complex and challenging issues (e.g., global climate change, gender inequality, poverty), also known as grand challenges, in management studies.

Second, embracing pluralistic styles of theorizing will allow scientific discovery (Folger & Turillo, 1999), even more so now when the field of management has been fragmented and lacking novelty (Fisher & Aguinis, 2017). Our study advocates for pluralistic styles to circumvent this issue, which will allow for a newer and fresher theorizing perspective that will enable in ‘better and bolder theory’ (Swedberg, 2014a).

Finally, this chapter proposes two additional theorizing styles, namely *counterfactual theorizing* and *story corroboration theorizing*. However, there is still a need for more methodological discussion on theorizing. This is because a lack of discussion will only lead to ‘tribalism’ in research, where researchers will advocate one form of theorizing while dismissive of other styles (Gulati, 2007). This tribalism in research is counterproductive if the goal is to advance our understanding of management scholarship. However, researchers in the management discipline can only embrace pluralistic styles when they understand them.

Important Takeaways from Chapter V

There are four important takeaways from this chapter. First, in this chapter, we urge more disclosure on time-related methodological aspects. This lack of disclosure is particularly problematic if stakeholders want to explicitly understand the paper's ontological and epistemological position. Moreover, disclosure is crucial for ensuring trustworthiness (Pratt et al., 2020).

The second takeaway is that we need more methodological attention on participant's experience of time, which is not explicitly disclosed. For a complete understanding incorporating participant's 'experienced time' is important. This exploration can also extend to collective units such as the organization or industry. Therefore, by not considering this a paper runs the risk of formulating 'incomplete' theories.

The third take away is that there is consensus on the importance of context in IB (Plakoyiannaki et al., 2019; Poulis et al., 2013; Welch et al., 2011). Nonetheless, we find that disclosure regarding temporal context was missing. This can affect trustworthiness for two reasons. First, temporal context determines the boundary conditions of a theory (Whetten, 1989; Sonnentag, 2012). Second, discussing temporal context will provide the necessary 'depth' and 'nuance' (Johns, 2006; Sonnentag, 2012).

The final takeaway here is that there is a complete absence of prospective designs to theorize the future. Moreover, there is also an absence of methodological understanding on using qualitative research to theorize the future. There are many benefits of theorizing the future. First and foremost, it helps to establish boundary conditions (Zaheer et al., 1999). Second, stronger causal relationships can be theorized via forecasting or predicting future trends and future implications. In this regard, prospective designs can better understand the nature of temporality (e.g., is the phenomenon cyclical in nature or not). Finally, future theorizing is beneficial for industry practitioners who can take advantage of these theoretical insights since forecasting is very much part of how an organization strategizes and develops organizational policies. In this regard, future studies can provide methodological insights into prospective designs, for example, by interrogating counterfactuals or thought experiments (Folger & Turillo, 1999; Shepherd & Suddaby, 2017; Shepherd & Sutcliffe, 2011; Weick, 1989).

Important Takeaways from Chapter VI

There are three important takeaways from this chapter. The first takeaway is that even when an organization undergoes an organization disruption, it does not necessarily mean that an organization's identity will also change. Our empirical case shows that CERN, instead of changing its organizational identity, redefined its label of working with complex technology. Therefore, its identification with complex technology did not change, but the interpretation did change. Hence, identity work can be done by reinterpreting labels defining the identity, however, without changing its core elements.

The second takeaway is that an organization's identity may be driven by one technology or product (or brand). However, the organization may identify differently with different parts of the same technology or product (or brand). This will happen if there are parts that do not align with its organizational identity. This insight has series of implications, which might also explain why specific organizations will be unwilling or willing to incorporate, for example, 'green practices'. For these transitions to work, the change must align with the organization's identity. Without this alignment, the shift will not be possible.

The third takeaway is that recovery from disruptions may be more successful not by changing core elements of an organization's identity but by reinterpreting core elements of an organization's identity. We contend during disruption, if an organization engages in changing core elements of its organizational identity, the process of recovery may take more time.

Limitations

In this section, we highlight several limitations of this thesis. First, in chapters I, II, III and V, we interrogate a long time period. However, a more extended period can add more to our understanding of transparency/disclosure. Second, in chapters I, II, III and V, we limit the analysis to top journals. While the motivation is to proxy best research practice, for a complete methodological understanding, this analysis can extend to middle and lower-tier-management journals. Third, chapters I, II, III, and IV look at the management field,

whereas Chapter V looks at the field of international business. The reason here was to control for disciplinary context. However, future studies can expand the disciplinary scope for a better understanding of methodological issues. Fourth, chapters I, II, III and V did not investigate the role of the review process. While only in Chapter I, we interview editors; however, in this chapter, we do not probe the review process in detail. Therefore, future research can interrogate the review process to understand better the methodological issues that we investigate in this thesis. Fifth, in Chapter III and Chapter IV, we only investigate the single case study research methodology. In this regard, future methodological work can be extended to multiple case study research. This extension will explain differences and/or similarities between selection strategies and theorizing styles of the single case study with selection strategies and theorizing styles of multiple case study research. Finally, a limitation of Chapter VI is that we investigate a retrospective phenomenon. Therefore, interviews can have retrospective bias. We mitigate this by analyzing multiple other data sources.

Future Research Directions

In light of the insights from this thesis, we discuss possible future research directions that can add to the conversation of exploring, understanding and promoting pluralistic research.

Regarding Chapter I and Chapter II, a possible future research direction could be to interrogate different methodologies used by published papers. For quantitative research, researchers can investigate which statistical method or regression analysis is being used? Such analysis will provide insights on whether there is homogeneity or heterogeneity in the usage of specific statistical and/or regression analysis. Similarly, for qualitative research, researchers can probe which qualitative method is being used (e.g., case study, ethnography, anthropology, action research, photovoice)? This is important because, as Welch et al. (2013) indicate, case study research is a popular qualitative method in

management. While this forms the basis to probe case study method in the thesis, it also highlights a certain level of methodological homogeneity in qualitative research for management studies. Therefore, such an investigation will provide important insights into how researchers in management can embrace pluralistic qualitative methods.

Regarding Chapter III and Chapter IV, a possible future direction could be to probe the topic of selection and theorizing for qualitative methods by moving beyond the single case study research. By broadening our understanding of selection and theorizing prowess that other qualitative methods can bring to the table, it can motivate future researchers to be more open about engaging with different qualitative methods.

Regarding Chapter V, a possible direction is formulating a qualitative method that can theorize the future. To this date, we do not know of any prospective qualitative method. This is surprising given the usefulness of future theorizing both from a methodological and practitioner perspective.

Concluding Remarks

This thesis addresses the recent calls for more pluralistic approaches of conducting (qualitative) research to enable scientific discovery. In this regard, we explore, understand and promote pluralistic (qualitative) research by interrogating some important methodological aspects. It includes transparency, case study design, selection strategies, theorizing, and temporal theorizing. Moreover, some of these learnings are also applied to an actual empirical case, which advances our theoretical understanding of the relationship between identity work and technology during an organizational disruption.

In this thesis, we contend that pluralistic research offers fresher and newer ways of looking at a phenomenon. It will allow the academic community to develop better solutions for some of the most pressing global issues (i.e., global climate change, poverty, educational inequity, gender inequality). Beyond global issues, researchers can use these

methodological insights to interrogate societal, organizational and individual issues. Therefore, a conscientious move towards pluralistic research will significantly benefit management discipline (including others), as the field is increasingly becoming ‘eclectic’ because it comprises stakeholders from cross-disciplinary fields. As such, this pluralistic embracement can better address problems for both academic researchers and industry practitioners. In this regard, we advocate for pluralistic (qualitative) research and caution the mindless application of research templates.

However, while this thesis lays the necessary foundation for starting a conversation on pluralistic research, journal editorial boards and researchers can all play an essential role in keeping this conversation going. For example, there is a need for more special issues in the area of pluralistic research. Moreover, editorial boards can make an active effort to include editors and reviewers who use non-conventional research methods. Only when journals and editorial boards push for an academic conversation around pluralistic research that we can expect scholars to embrace pluralistic approaches in research.

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