Working Anytime/Anywhere: An Exploration of Connectivity Management Practices in the Saudi Academic Context

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Declaration

I certify that this work has not been submitted for any degree other than Doctor of Philosophy at the University of Sussex. I declare that this work is the result of my own investigations except where otherwise identified by references. I also confirm that all information in this thesis has been obtained and presented in accordance with ethical conduct in research.

Njod Aljabr

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Acknowledgements

My secondary school teacher once told me I would continue my studies to become a doctor. I heard this comment again from a guest professor from MIT after he delivered a lecture at Saunders Business College during my Master's degree. I viewed these comments as mere compliments, as pursuing a PhD seemed a challenging goal for me back then. However, here I am today with the passion for this goal that has evolved into reality. I am grateful to God for the will and ability to start and complete this research. I am also thankful to the amazing people around me throughout my journey.

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Abstract

Information and Communication Technologies render work practices flexible, complicate disconnection from work, and engender constant connectivity affecting employees' work-life balance. Extant literature seems to indicate a co-constitutive relationship between connectivity and blurred work-life boundaries. Unlike the notion of connectedness, which refers to the state of being connected, connectivity is associated with latent potentiality, referring to both connecting and the potential to connect at any point in the future. An emerging area of recent research has focused on the management of work connectivity, i.e. if, when, how, and how much to connect to work outside working hours. Extant literature on connectivity management has predominantly focused on company-issued BlackBerries, constraining our understanding of the management of connectivity via other devices (such as via personal devices or other mobile technologies). Furthermore, very few studies refer to the organizational context within which connectivity is enacted. Many of these studies attribute variations in connectivity management practices to variations in occupation. The literature does not provide an adequate understanding of other social and material parameters influencing connectivity management practices, such as variations in working hours' arrangements or in the affordances of the technology used. Most of the literature on connectivity management takes a human-centric approach, not giving an explicit account of the role of technology in shaping these practices.

The aim of this research is to explore how academics manage connectivity within a range of socio-material parameters. It applies the framework of socio-materiality to addresses the following research questions: (a) how do academics manage work connectivity in the presence of mobile technologies, and (b) what parameters shape connectivity management practices. This research is based on two case studies. It employs document analysis and semi-structured interviews with academics based at two universities in Saudi Arabia. The study contributes to the literature on connectivity management through the introduction of three connectivity management practices: segmentation, prioritization, and distancing. This research also identifies a set of parameters (organizational, individual, technological, and situational) that shape connectivity management practices. The study contributes to the socio-materiality literature by conceptualizing socio-material imbrications through an account of their foundation. The study also introduces the metaphor of layers to illustrate how socio-material imbrications unfold.

List of Acronyms

Acronym	Term *
ANT	Actor-Network Theory
F2F	Face-to-Face
HR	Human Resources
ICT	Information and Communication Technology
IM	Instant Messaging
IT	Information Technology
PC	Personal Computer
SCOT	Social Construction of Technology
SST	Social Shaping of Technology

* The terms are provided in full the first time they appear in each chapter.

Chapter 1: **Introduction**

With the advancement of technology, being in different places and various time zones are no longer barriers for communication. Several researchers reveal that the advancement of technology can change work processes (Zuboff, 1988; Schlosser, 2002; Breu, Hemingway and Ashurst, 2005). The use of Information and Communication Technology (ICT) in general, and mobile technology in particular, can add temporal and spatial flexibility, maintain social and business links, and introduce new methods for communicating and conducting work. The majority of employees use the Internet and mobile phones to stay connected to work, and this pattern of use is expected to increase significantly over time (Butts, Becker and Boswell, 2015). The role of ICT in shaping work-life boundaries is an area that has received less attention in the literature (Dén-Nagy, 2014).

Evidence from extant literature indicates a co-constitutive relationship between connectivity and work-life boundaries. On the one hand, the existence of work connectivity outside working hours suggests blurred work-life boundaries and, on the other hand, blurred work-life boundaries encourage work connectivity outside working hours (Mazmanian, Yates and Orlikowski, 2006; Orlikowski, 2007; Dery, Kolb and Maccormick, 2014). Practices associated with the management of work connectivity are often undertaken in non-work contexts, such as during time spent with family and friends (Dery, Kolb and Maccormick, 2014). An emerging topic of recent research has therefore addressed this notion, referred to as the control of work connectivity, i.e. if, when, how, and how much to connect to work outside working hours (see, for example, Matusik and Mickel, 2011; Mazmanian, 2013; Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014; Symon and Pritchard, 2015; Siegert and Löwstedt, 2019). Unlike ‘connectedness’, which refers to the attribute of being connected, ‘connectivity’ symbolizes both connecting and the potential to connect to work at any point in time (Kolb, 2008). The notion of managing connectivity represents a fundamental shift in thinking about practices of mobile technologies (Dery, Kolb and Maccormick, 2014), an area in which this research is primarily interested.

In this introductory chapter, I present a background of this study on connectivity management and highlight knowledge gaps. I subsequently present the research

objectives and research questions, and the empirical context. This chapter also introduces the theoretical framework, the research approach, and the justification of the significance of the study. I close this chapter by outlining the structure of the remainder of the thesis.

1.1 Study Background and Knowledge Gap

Professionals are presented in the literature to be in possession of autonomy and control over their work practices (Kolsaker, 2008; Heijstra and Rafnsdottir, 2010). They tend to embrace technology into their work routine because it is perceived as a means for increasing their autonomy and control (Mazmanian, Orlikowski and Yates, 2013; Villadsen, 2016). Extant literature conceptualizes connectivity management using multiple terms, departing from the duality of connections and disconnections (Kolb, 2008) towards concepts of managing the flow of connectivity (Dery, Kolb and Maccormick, 2014), buffering availability (Mazmanian, Orlikowski and Yates, 2013), or denying connectivity management altogether (Middleton, 2007). Mobile technologies and technology use have evolved over time (Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014). With Internet-connected devices at hand nearly 24 hours a day, expectations of constant connectivity can become a general rule (Mazmanian, Yates and Orlikowski, 2006; Prasopoulou, Pouloudi and Panteli, 2006; Orlikowski, 2007), constraining connectivity management practices (Middleton, 2007).

Connectivity management literature is still in its infancy, with several areas yet to be fully understood. First, most research on the management of connectivity takes a human-centric perspective and does not give a sufficient account of the role of technology in shaping these practices (see, for example, Cavazotte, Heloisa Lemos and Villadsen, 2014; Dery, Kolb and Maccormick, 2014; Siegert and Löwstedt, 2019). Second, much of the research addressing the effect of connectivity on boundary management considers the implications associated with BlackBerry devices, whose primary function has traditionally been work email communication (Schlosser, 2002; Mazmanian, 2013). As patterns of employees' usage of mobile technologies change over time, email devices are now obsolete and have been replaced by other devices (Dery, Kolb and Maccormick, 2014). Extant literature does not provide sufficient understanding of connectivity management practices in light of different mobile technologies.

Third, while many scholars indicate that increased organizational expectations might constrain connectivity management (Towers *et al.*, 2006; Orlikowski, 2007; Mazmanian, Orlikowski and Yates, 2013), many studies have focused on company-issued devices (see, for example, Schlosser, 2002; Lowry and Moskos, 2005; Mazmanian, Yates and Orlikowski, 2006; Towers *et al.*, 2006). Being equipped with a mobile device to be used outside working hours suggests the possibility of work connectivity being part of the job requirements, and beyond the mere decisions of professionals. Therefore, extant research does not consider different situations of work connectivity, including, for example, when work and personal communications are conducted via personal devices. Hence, while connectivity is deemed manageable through the management of a 'flow' of communications on two separate devices, validating this concept under shifts in technology use is of value (Kolb, 2008; Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014).

A fourth limitation is the context of extant research. Specifically, extant studies address connectivity management either for professionals at one organization (Cousins and Robey, 2005; Dery, Kolb and Maccormick, 2014) or for different professionals at multiple organizations (Middleton, 2007; Mazmanian, Orlikowski and Yates, 2013; Robey and Cousins, 2015). Therefore, they do not allow an adequate understanding of factors influencing professional practices, and beyond variations in the occupation. Considering a specific occupation, while giving attention to the devices and applications used for communications, can therefore provide a deeper understanding of parameters shaping connectivity management practices.

Studies around connectivity management have also been clustered in western contexts such as the United States (Cousins and Robey, 2005; Boswell and Olson-Buchanan, 2007; Orlikowski, 2007), Europe (Sørensen and Pica, 2005; Prasopoulou, Pouloudi and Panteli, 2006; Hislop and Axtell, 2011), and Canada (Schlosser, 2002; Towers *et al.*, 2006; Middleton, 2007). In fact, research on work-family boundaries for the past 30 years has also been clustered in similar, largely anglophone, contexts, such as the United States, the United Kingdom and Ireland, and Australia (Kengatharan, 2015). This can limit our understanding of the topic under a different context, such as in Eastern countries that may differ in terms of technology use (Williams and Edge, 1996; Al-Gahtani, Hubona and Wang, 2007) and in perceptions towards connectivity and the boundaries between work

and life (Kengatharan, 2015). In light of the above, the research objectives and questions are presented next.

1.2 Research Objectives and Research Questions

This thesis responds to the calls for further research on connectivity management (Kolb, 2008; Matusik and Mickel, 2011; Dery, Kolb and Maccormick, 2014). It aims to bridge a knowledge gap by exploring academics' management of connectivity in light of various social and material elements. A key question driving this research is how work connectivity is managed outside working hours. Based on the literature review, the research objectives are:

(a) to understand the management of connectivity within the interplay of the social and the material; and
(b) to elicit social and material elements influencing these practices.

This research aims to achieve these objectives by answering the following questions:

(a) How do academics manage work connectivity in the presence of mobile technologies?

(b) What parameters shape connectivity management practices?

1.3 Empirical Context

Many scholars believe that connectivity management practices of professionals is worthy of investigation (see, for example, Prasopoulou, Pouloudi and Panteli, 2006; Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014). This research explores connectivity management practices of academics, who are identified as heavy ICT users (Dén-Nagy, 2014). Addressing academics' practices is expected to provide robust information regarding the notion of connectivity management. While mobile technologies are used for work communications by various professional groups, a systematic review over a 15-year span indicates that implications of mobile technology for academics are more intense than average (Dén-Nagy, 2014). Academics might be more likely to experience problems in negotiating their work-life boundaries as their work demands a wide range of roles (Kinman and Jones, 2008; Baruch, 2013). They have a communication network with a wide range of groups, including communications with

academic colleagues, administrative staff, and students (Almaghlouth, 2015; Chawinga, 2016). A unique characteristic of the academic job is not only being accountable to the immediate university at which they are employed, but to the wider academic community as well (Baruch and Hall, 2004). Research findings from several countries, such as the United States (O'Laughlin and Bischoff, 2005), the United Kingdom (Kinman and Jones, 2008), Australia (Currie and Eveline, 2011), Iceland (Heijstra and Rafnsdottir, 2010), highlight the challenge academics face in managing their work-life boundaries, potentially leading to serious consequences for academics' work-life balance.

Specifically, this thesis explores connectivity management practices of academics from two institutions in Saudi Arabia, referred to as *Springfield University* and *Hudson College* (pseudonyms). While the notion of work connectivity is universal, the implication of the escalated adoption of mobile devices within this country on the management of work-life boundaries has not received much attention. A systematic review of the work-life literature emphasizes that research capturing work-life conflict in developing countries is needed (Kengatharan, 2015).

The two sites were selected due to the different settings in which they operate (such as their working hours' arrangements). Exploring connectivity management at two academic institutions can overcome the limitations identified in previous studies focusing on the practices of professionals within a single organizational setting, or for multiple professional groups (Mazmanian, Orlikowski and Yates, 2013). It can provide an in-depth understanding of social and material elements surrounding these practices, and eliminate any discrepancies in practices to be attributed to variations among professions.

1.4 Theoretical Framework

To answer the research questions, it is essential to incorporate a framework that does not focus solely on either the implication of technology or its use by humans, but considers both aspects of connectivity (Cecez-Kecmanovic, Boell and Campbell, 2014; Symon and Pritchard, 2015). This research is therefore guided by the framework of socio-materiality that focuses on the interplay between the social and the material, specifically through the concept of socio-material imbrications (Leonardi, 2011).

This framework is advantageous for incorporating both human agency and material agency in addressing organizational practices (ibid.). Socio-materiality remedies previous

social organizational studies by viewing materiality in a way that does not "ignore it, take it for granted, or treat it as a special case, and neither does it focus solely on technology effects or primarily on technology use" (Orlikowski, 2007, p. 1437).

For this current research, the material stands for mobile technologies; specifically, physical and digital affordances of mobile devices and applications. For example, this includes mobile phones, laptops, emails, and Instant Messaging (IM) applications. The social in this research includes policies, responsibilities, and norms.

1.5 Research Approach

The exploration of connectivity management practices involves perceptions and views that may not be expressed efficiently using statistical methods (Kolb, 2015). This study, therefore, follows a qualitative methodology and is based on two case studies. This facilitates an in-depth exploration of the topic and strengthens the findings of this research compared to those from a single case study alone (Cavaye, 1996; Yin, 2003; Saunders, Lewis and Thornhill, 2016). Data are collected using semi-structured interviews at a multi-level, including interviews with academics, departmental heads, and Human Resources (HR) practitioners. Data are also obtained from analysing documents on institution policies, statistics, and activities' reports at the two research sites. Documents provide background information about the investigated research sites, enhancing the understanding of the context in which connectivity is enacted (Lee, 2012; Yin, 2013).

1.6 Significance of the Study

"As a new and emerging phenomenon, connectivity is not well understood, puzzling both researchers and practitioners" (Cecez-Kecmanovic, Boell and Campbell, 2014, p. 1). Conceptual development in the domain of connectivity studies is therefore needed (Kolb, 2015). This thesis represents a step towards further development of the notion of connectivity management, responding to the calls for empirical investigation on the concept of connectivity (Kolb, 2008), and the call for studies advancing conceptualization of connectivity management (Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014). Given the rapid evolution of technology and the shift in use patterns (Kolb, 2008; Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014), this thesis aims to provide an understanding of connectivity management taking

place via a variety of mobile technologies. Despite the richness of extant literature on the effects of ICTs used for work communications, controversy regarding the implications of such use have been attributed to the fact that the implications and uses of ICT are heterogeneous in nature (Lowry and Moskos, 2005; Butts, Becker and Boswell, 2015). In investigating connectivity management while giving an explicit account to technology, the study enables further understanding of the role of ICT for managing work-life boundaries, an area in which research is inadequate (Dén-Nagy, 2014).

Further, to the best of my knowledge, this research is the first to address connectivity management practices for a single professional group but in two different settings. In doing so, this research elicits factors shaping connectivity management practices beyond the element of the occupation. By exploring different settings, this research answers the call for an understanding of the social origins by which connectivity is bounded (Mazmanian, 2013), and the call for investigating connectivity management practices in light of different working hours' arrangements (Matusik and Mickel, 2011).

The implications of this research extend beyond the field of connectivity management to the broader field of organizational studies. Although there have been some studies addressing connectivity management, very few have incorporated a socio-material perspective into their analysis, and none have given sufficient consideration to the context in which connectivity is enacted. This research pursues a different approach by shifting away from the human-centric approach towards an exploration of different social and material parameters influencing connectivity management practices.

This thesis does not only address gaps in the literature, but it also outlines practical implications. The numerous recent attempts by organizations (*BBC News*, 2012; Peters, 2014; Barr, 2019) and governments (Stuart, 2014; *BBC News*, 2016; Rubin, 2017) to control work connectivity outside the working hours suggests a recognition of negative implications of connectivity. This thesis provides academics and practitioners in other sectors, as well as policy makers with practical recommendations for facilitating connectivity management.

1.7 Research Outline

Chapter 1 of the thesis introduced the research topic, highlighted gaps in the literature, and presented the research objectives, questions, and empirical context. The theoretical

framework and approach of the thesis were summarized, and the significance of this research justified.

Following this introductory chapter, *Chapter 2* discusses the controversial implications of ICT that, on one hand, simplifies work communications and offers flexibility, while, on the other hand, blurs work-life boundaries.

Chapter 3 looks more closely into the implications of mobile technologies for work-life boundaries. The chapter reviews literature on the theorization of work-life boundaries and highlights the controversy of the management of work communications outside working hours.

Chapter 4 discusses the notion of work communications outside working hours in more detail, particularly through the concept of connectivity. The chapter introduces the concept of connectivity and discusses the debate around connectivity management.

Chapter 5 presents and justifies the theoretical framework underpinning this research. *Chapter 6* presents the research design, and justifies the philosophical foundations and the methodological approach employed in this research.

Chapters 7 and *8* present an analysis of the data collected from the two cases. Data from each case are analysed independently.

Chapter 9 synthesizes the themes from the two cases. The cross-case analysis facilitates an in-depth understanding of connectivity management in relation to academics practices, and answers the research questions.

Chapter 10 discusses the research findings and contributions. *Chapter 11* concludes this thesis by summarizing its novel contributions and discussing implications for future research and practice.

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Chapter 2: **Information and Communication Technologies for Work Communications**

2.1 Introduction

The word "technology" is derived from the Greek *techne (τέχνη)*, which means art or skill, and *logos (λόγος)*, which means words or knowledge (MacKenzie and Wajcman, 1999). Information technology (IT) is a term that covers several technical developments, including computer science, telecommunications, and software engineering (Zuboff, 1988). Information and Communication Technology (ICT) is an umbrella term that represents various technologies employed for the purpose of communicating information. ICT can stand for various technologies in the workplace, including video and audio conferences, intranet and Internet, email and mobile technologies (Barnes, 2012). Mobile technologies, in which this research is interested, stands for any portable ICT (Sørensen and Pica, 2005). This includes mobile devices, such as laptops and mobile phones, as well as digital applications, such as Instant Messaging (IM), and email applications.

The aim of this chapter is to further our understanding of the implications of ICT for work communications. In this chapter, I start by discussing the implications of ICT on human communications in general, and then proceed to a review of the literature on the implications of ICT for work in particular. I present the controversial implications of ICT that, on one hand, simplifies communications and offers flexibility and, on the other hand, blurs work-life boundaries. This chapter reviews the implications for work communication, expectations of availability, and job flexibility.

2.2 ICT and Human Communications

Two themes are frequently heard concerning the implications of technology in general (such as computers and video cameras), and ICT in particular (such as mobile technologies) on human communications. This includes implications for humans' isolation and/or socialization (see, for example, Schlosser, 2002; Barnes, 2012; Khosravi, Rezvani and Wiewiora, 2016), and on the conceptual boundaries between humans and the artefacts (see, for example, Zuboff, 1988; Lupton and Noble, 1997; Whiting *et al.*, 2018). ICT may trigger changes to everyday practices for those engaged with it, leading to the facilitation of communications and overcoming of isolation, or the complete

opposite. As people are engaged with technology, concrete reality, together with the boundaries between the concepts “humans” and “machines” can both become blurred (Lupton and Noble, 1997). In other words, people start to associate machines with attributes that typically belong to humans. According to Schlosser (2002), ICT can facilitate human interactions, simplify their connection to social networks, and help them cope with periods of isolation. Although various ICTs have different applications, studies suggest that technologies can afford means for overcoming isolation and loneliness (Khosravi, Rezvani and Wiewiora, 2016). It is inferred from previous empirical studies that ICT, such as computers, the Internet and social networking sites, can facilitate people’s connections and maintain their involvement with distant individuals and social networks (Prasopoulou, Pouloudi and Panteli, 2006; Khosravi, Rezvani and Wiewiora, 2016).

However, there are conflicting views about the role of ICT in facilitating social communication and hindering isolation. In the book, *In the age of the smart machine*, Zuboff (1988) asks office workers to draw pictures that express their feelings before and after the implementation of computerized systems. In their pictures, office workers illustrate that the introduction of ICT resulted in enforced isolation, solitariness, impersonality, and a strong feeling of “being tied to the machines” (Zuboff, 1988, p. 142). Those who depend heavily on ICT to conduct their work processes may feel isolated due to the dehumanization of their work, i.e. “the reduction of communication and interaction to electronic processes, which deprive individuals of human contact” (Barnes, 2012, p. 128). ICT can decrease face-to-face (F2F) communications and deprive contact with those physically present (Schlosser, 2002; Barnes, 2012). The study by Barnes (2012) found that most employees perceive it rude to communicate F2F with someone who is simultaneously using mobile technologies. Therefore, ICT has the potential to hold back F2F communications and impact social relationships with those physically present.

In addition, as noted by Lupton and Noble (1997), technology not only contributes to changes in humans’ social practices, but it can also “take over humanity”. This can occur by impersonalizing reality and blurring boundaries between humans and machines. Zuboff (1988) indicates that with the automation of the workplace, concrete reality became vested in only one source, which is said to compensate for the impersonality of ICT. That is, as people become more engaged with technology, they are interacting with

computer screens during most of their working hours, and the human factor becomes abstract. Although the telephone was the primary means through which employees could hear the voice of a real person, this reality check did not last long. With increased technology adaption, what is left of actual human interaction, i.e. through hearing the voice of actual humans, is in decline, and reality is now blurred and invaded by plain data displayed in text format (Zuboff, 1988).

The notion of blurred boundaries is illustrated in many research studies that demonstrate the tendency of taking away some of the humans' pure characteristics, and sharing it with the machines (for instance, morality, intelligence, sociability, and trustworthiness) (Lupton and Noble, 1997; Whiting *et al.*, 2018). Whiting *et al.* (2018) explore how technology, particularly video cameras, mediates the relationship between participants from different groups and researchers. In their study, they report that, over time, some individuals greet the video camera, referring to it as an invisible friend, and "talking to a device as if it were a human friend" (ibid., p. 13).

The study by Lupton and Noble (1997) aims to understand how people think of their personal computers (PCs). The study reveals that people perceive PCs as having many human-like attributes, such as having a certain lifespan, being likely to die, and cannot always be trusted (ibid.). The study suggests that the boundaries between humans and technology are neither rigid nor well-identified. In her book, Zuboff (1988) also refers to machines as 'smart', which further supports the blurring between the attributes of the soul-less objects and the alive human being. Furthermore, technology can also blur the boundaries of human capabilities in many contexts, such as hotels and hospitals. This can be explained by the two-way pressure experienced by employees who simultaneously try to handle technology while offering high-quality customer service (Galičić and Ivanović, 2007). That is, humans *per se* may no longer be sufficient, as technology is now required for the support and optimization of human capabilities. In response, recent theories have emerged that hold the view that humans and technology are entangled into one entity and do not exist independently (Orlikowski, 2007). In a more recent work, Zuboff (2019) has offered a new lens of viewing the implications of technology by indicating that it generates a new form of capitalism. She highlights that surveillance capitalism claims human experience as free raw material which can be translated into behavioural data

(ibid.). She explains how this knowledge generates a new power which knows and shapes humans behaviours.

That said, ICT can offer a wider range of services and improve the means for conducting work. On one hand, ICT can assist in building and maintaining social relationships, facilitate socialization, and overcome isolation (Khosravi, Rezvani and Wiewiora, 2016). On the other hand, ICT can also increase isolation, impersonalize reality and blur the boundaries between theoretical concepts of humans and machines (Lupton and Noble, 1997; Orlikowski, 2007; Zuboff, 1988). The implications of ICT on work expectations in particular will be discussed next.

2.3 ICT and the Reconstruction of Work Expectations

The first computer was available for business in 1951, of which less than 50 were sold (Williams, 1990). Over time, other generations of computers were smaller, cheaper, more reliable, and used by several industries. Technology has been envisaged to improve work processes, and increase efficiency and productivity (Er, 1989). Within few years, computers spread from the workplace to the home (Williams, 1990).

Olson and Primps (1984) classifies the use of technology for work at home into four categories: after-hours work at home, where employees spend substantial amount of their time at home doing work-related tasks on computers and other ICTs; the second category is self-employed work at home, in which many people, such as writers, consultants, and artists are self-employed working from their homes; the third category is occasional work at home, which stands for informal arrangements made that allows employees to work from home when needed, such as to finish a report with critical deadline and avoid interruption at the office; the fourth, and less common, category is regular work at home for full-time employees, which stands for situations where an employee formally work at home from 1 to 5 days a week, and receive full salary and benefits (Olson and Primps, 1984). Similarly, Er (1989) classifies the use of technology for work at home for work into three categories: compulsory working at home, voluntarily working at home, and flexitime working.

Many earlier research states that the implication of ICT on individuals, homes, and organizations is unclear (Olson and Primps, 1984; Er, 1989). Recent research on the implications of ICT on intra-organizational communication is still controversial. While

ICT affords a means for simplifying work communications and facilitating information sharing, it can also leave employees with work overload and enormous amounts of information to be processed. Wright *et al*. (2014) investigate employees' perceptions regarding the implications of ICT communications outside regular working hours, including the use of emails, text messages, and Skype. The study investigates the influence of ICT on various aspects, such as work-life conflict, job satisfaction, and burnout. The study suggests that communications via ICT can benefit employees by decreasing work-life conflict. Further, their study concludes that the use of ICT outside regular working hours can also be associated with negative consequences, including increased job burnout, in addition to increased work-life conflict.

Due to its varied implications for the workplace, ICT has been described as "a double-edged sword" (Dén-Nagy, 2014, p. 193). This dual implication is also highlighted by Barners (2012) who discusses the implications of ICT on intra-organizational communications. Her study shows that ICT, such as laptops, enables employees to access information and communicate with colleagues from different locations and at various times. In addition, emails speed up communications and facilitate teamwork, whereas the Internet and intranet provide access to an enormous quantity of up-to-date information and minimizes the delay in work tasks (ibid.). The study also shows that ICT enables new, faster means for communication and, in turn, increases efficiency and productivity, facilitates the creation of a supportive work environment, and simplifies the acquisition of information access. However, such simplified communication and information sharing can also be associated with other consequences, such as an increase in expectations (ibid.). As many ICTs, such as emails, facilitate communication and teamwork, employees anticipate better organizational communication and more top-management support. Organizations can also expect employees to respond instantly and complete work faster as they no longer have excuses for work delays (ibid.).

The notion of increased expectations was also reported by other studies; this indicates the implications of ICT on organizational norms and the extension of work communications beyond working hours. Expectations of availability can increase, and withdrawing from after-hours communications becomes a challenge (see, for example, Schlosser, 2002; Mazmanian, Yates and Orlikowski, 2006; Matusik and Mickel, 2011). The use of mobile technologies for work communications can render employees hesitant to draw a line

between their work and personal lives (Prasopoulou, Pouloudi and Panteli, 2006). Mazmanian, Yates and Orlikowski (2006) conclude that work communications via mobile phones lead to a continuous connection to work. With mobile technologies, employees are vulnerable to the demands of the organization, as the office becomes always present and workers are available anytime (Prasopoulou, Pouloudi and Panteli, 2006). Professionals could be afraid that maintaining rigid boundaries and not responding to work communications on their mobile phone would imply that they are avoiding work duties and responsibilities; therefore, they tend to check their smartphones regularly after normal working hours (ibid.). Work communications after working hours and during weekends become the norm (Mazmanian, Yates and Orlikowski, 2006). When communications are enabled via mobile technologies outside work, employees may feel obligated to constantly check and respond to work communication to avoid deviating from the expectations of managers and colleagues (Mazmanian, Yates and Orlikowski, 2006; Orlikowski, 2007). Such frequent and ongoing monitoring generates and accumulates further communications and messages to respond to, and, in turn, creates a continuous cycle of constant communications with work (Orlikowski, 2007). Expectations of availability can be further intensified with increased work flexibility; an issue that will be discussed in the next section.

2.4 ICT and Work Flexibility

In organizations, the term flexibility can be divided into two forms. The first form is flexibility of employees (also referred to as employer flexibility) which benefits employers and organizations by enabling them to control the workforce, improve the use of employees' capacities, reduce labour costs, and enhance operations management. The second form is flexibility for employees, which denotes flexibility of working policies, such as flextime and compressed workweeks, to be able to conduct work flexibly (Kelliher, 2013). This section focuses on the latter.

The availability of the Internet has made it possible for work to be conducted either inside or outside the workplace, and still yield similar results regardless of the location (ibid.). Scholars have therefore associated flexibility of working anytime (temporal flexibility) and anywhere (spatial flexibility) with flexibility for employees, where ICT offers more options in regards to where and when to access information and conduct work tasks. The

term ‘flexibility’ is used in this research to refer to both spatial and temporal flexibility enabled through the use of ICT.

ICT fosters easier communications as well as increased flexibility in terms of how and when to conduct work. ICT can therefore play an integral role in facilitating work processes for teleworkers and virtual teams, as well as employees who seek flexibility by working from home (Barnes, 2012; Russell et al., 2009; Thomas and Bostrom, 2010). The ability to communicate remotely regardless of space and time can trigger intangibility and abstractness that takes away certainty and control (Zuboff, 1988). ICT can therefore facilitate work intrusions on family time, complicate disconnection from work, lead to constant attachment to the workplace, and limit autonomy regarding how to spend after-work hours (Boswell and Olson-Buchanan, 2007; Mazmanian, Orlikowski and Yates, 2013). Up to date research regarding the outcome of flexibility afforded by ICT has yielded mixed results.

Wright *et al.* (2014) target employees from different occupational backgrounds and highlight the positive implications of flexibility enabled by a range of ICT, including emails, text messages, and Skype. The use of ICT to connect with work from home can add convenience to work practices and increase job satisfaction (Wright *et al.,* 2014). Another study by Breu, Hemingway and Ashurst (2005) investigates the outcome of flexibility afforded by ICT to a specific occupational group. Specifically, the study explores the extent to which mobile technologies (including tablets, GPRS phones, and WLAN), support knowledge workers in an IT consulting team. The study reveals that the mobile nature of the technologies adds flexibility that accommodates a variety of employees’ working styles. Therefore, mobile technologies can make the job easier, improve productivity and performance, increase collaboration, facilitate access to resources, increase effectiveness, and minimize work delays. However, their study was targeted at early adopters and results may not, therefore, be generalized to all employees.

An empirical study by Barnes (2012) was targeted at a broader sample of employees in a high-tech organization. The study shows that ICT does not only add flexibility to work processes but also autonomy. Using ICT, employees are enabled to communicate with managers and colleagues, and to complete some work tasks from outside their designated workspace, including when outside working hours. ICT can also slow down communication as the flexibility allows responses to be made at an individual’s own pace.

The study concludes that, despite the mutual organizational context among employees, ICT has different implications on individuals, such as based on their occupation.

A number of studies have also illustrated paradoxical effects of flexibility afforded by ICT. For example, a quantitative study by Russell, O'Connell and McGinnity (2009) investigates the relationship between flexible work arrangements, including working from home and two outcomes: work pressure and work-life conflict. The study targets employees from a variety of sectors and concludes that while some flexible working arrangements, such as part-time work and flextime, can decrease work pressure and work-life conflict, working from home has the opposite impact. Specifically, the flexibility that ICT affords to home workers can intensify physical and mental work demands. Those who are enabled to work from home experience levels of work-life conflict that are significantly higher than others holding the same occupation, but working from the physical organizational location (ibid.). Towers *et al.* (2006) explore how office workers' spatial and temporal boundaries are shifted through the use of mobile technologies and targets employees at different organizational levels. Their study asserts that mobile phones can facilitate the accommodation of both work and family demands, and highlights flexibility in terms of the time and location where work is conducted. It also illustrates the role of flexibility on extending work to personal times. The study therefore describes flexibility as a "dual-edged sword" (ibid., p. 593).

The controversy regarding the implications of ICT on employees can be attributed to heterogeneous devices and applications used for communications (Lowry and Moskos, 2005). Butts, Becker and Boswell (2015) explain this further by pointing out the fact that previous findings regarding the implication of ICT on work do not take into account the role of a specific communication tool. They add that conclusions regarding the upside or downside of flexibility afforded by ICT should not be generalized because various communication tools can have a different, and sometimes opposite, impact on individual employees. The remainder of this chapter will discuss ICT for academics in specific, followed by a discussion of communications via mobile technologies in particular.

2.5 ICT and the Academic Profession

ICT has led to noticeable transformation in the academic teaching system and the nature of communications. This, for example, includes distance education, online discussion,

and global research collaboration (Menzies and Newson, 2007; Heijstra and Rafnsdottir, 2010). ICTs have become "essential 'tools of the trade' for doing academic work" (Menzies and Newson, 2007, p. 86). Dén-Nagy (2014) describe academics as heavy ICT users. His systematic review on a 15-year span has shown that the impact of ICT on academics is more intense than average. Unlike many professional groups, academics have a communication network with wide groups from work including communications with students, administrative staff, and academics from both inside and outside their workplace (Heijstra and Rafnsdottir, 2010; Almaghlouth, 2015; Chawinga, 2016). Key characteristics of the academic profession include:

> "Shared values, altruistic concern for students, educational expertise, high level of autonomy, generation of new knowledge, application of logic, use of evidence, conceptual and theoretical rigour and the disinterested pursuit of truth" (Kolsaker, 2008, p. 516)

One of the characteristics I would like to emphasise for this research is academics' high level of autonomy (Kolsaker, 2008). Other studies have also associated academics with autonomy and control over their work practices (see, for example, Heijstra and Rafnsdottir, 2010). However, scholars have only recently started to recognize the implications of ICT for academics' autonomy and control over their work practices. As Dén-Nagy explains:

> "Just how individuals balance the requirementsof their careers and their private sphere is in itself an old area of academic enquiry, the role of information and communication technologies (ICTs) in work–life balancing strategies has only started receiving scrutiny in the past few years" (Dén-Nagy, 2014, p. 194).

The literature on the implications of ICT in academia has been predominantly focused on students' experiences and teaching outcomes (Almaghlouth, 2015; Chawinga, 2016; Shen and Ho, 2020). For example, Shen and Ho (2020) emphasize the benefits of ICT for enhancing the outcomes of teaching and learning. They assert that the advancement of technology has facilitated an easier, faster, and more convenient learning environment. Similarly, Chawinga (2016) asserts that ICT facilitate out-of-class discussion 24/7, enhancing students' course-related communication, and fostering their learning experience. While ICT facilitates communications, it can also complicate academics' disconnection from work and engender constant connectivity (Mazmanian, Yates and

Orlikowski, 2006; Boswell and Olson-Buchanan, 2007; Middleton, 2007; Heijstra and Rafnsdottir, 2010).

One of the potential sources of conflict for academics is the maintenance of their work-life balance in light of their workload, altruistic concern for students, and escalated connectivity outside working hours (Kinman and Jones, 2008; Kolsaker, 2008). For example, Eynon (2005) explores academics' experiences of using ICT and concludes that motivation for using ICT includes the enhancement of students' learning experience, and the management of the rise in student numbers and the demand for flexible learning. Kinman and Jones (2008) examine the well-being and work-life balance for academics and indicate that the main sources of stress for academics include the technological advances, provision of support for students, and time constraints, among others.

The findings regarding technological advancement being a source of stress was also reported in other studies. For example, Menzies and Newson (2007) address academics' use of mobile technology for dealing with increasing job demands and pressures and indicate that ICT can limit academics' control over their work schedule. They assert that despite the enhanced connectivity provided by ICT, the changes in the temporal work practices can leave academics time compressed and limit their control. Similarly, Heijstra and Rafnsdottir (2010) address the implications of internet and other ICT for academics. They highlight the challenges academics face and assert that a major dilemma is the difficulty to disengage oneself from work obligations while outside working hours. The findings of many studies suggest that communication outside the working hours usually takes place via mobile technology, such as laptops or mobile phones (see, for example, Heijstra and Rafnsdottir, 2010; Chawinga, 2016). Presented next is a review of the literature on the implications of mobile technology for work communications.

2.6 Mobile Technologies and Work Communications

Many efforts were made in order to explore the perceptions and implications of flexibility afforded by specific mobile technologies, predominantly smartphones (Lowry and Moskos, 2005; Prasopoulou, Pouloudi and Panteli, 2006; Towers *et al.*, 2006; Middleton, 2007). For example, Mazmanian, Orlikowski and Yates (2013) address the implications of communications via smartphones for knowledge professionals from different sectors. They illustrate that smartphones are linked to increased temporal and spatial flexibility,

and therefore argue that these devices provide professionals with instant information and releases them from the obligation to be physically present at a certain time and place. Reports of the study participants indicate that smartphones liberate people from time and place constraints and add freedom to where, when, and how the work is communicated or conducted. Nevertheless, the study also identifies that even though the use of smartphones is associated with increased flexibility, this flexibility can cause work to extend and may lead to constant engagement with work, increase the volume of work communications, and reduce autonomy (ibid.).

Communications via mobile devices afforded employees temporal and spatial flexibility. However, the study also illustrates the notion of a possible decrease in flexibility and autonomy associated with the use of mobile phones for work. The study concludes that communications via mobile devices generate a "recursive cycle" that urges individuals to constantly check their phones and makes it difficult to withdraw from this social cycle (ibid., p. 1341). In addition, the study also concludes that easy access to employees who use mobile phones increases the expectations of job commitment and availability: "This produces an environment where monitoring messages over the weekend becomes the rule, not the exception" (Mazmanian, Yates and Orlikowski, 2006, p. 4). This suggests that when employees are engaged in constant communications, opting out becomes a challenge. Similarly, Dery, Kolb and Maccormick (2014) indicate that while flexibility, mobility, and enhanced connectivity can all be considered positive attributes of mobile phones, such attributes can also increase the challenge of regulating connections to work. The study indicates that connectivity afforded by mobile phones could extend work communication and increase the expectation of constant availability. Lowry and Moskos (2005) also indicate that even though employees perceive mobile phones as part of themselves and willingly carry them around, the flexibility of mobile phones diminishes temporal boundaries and, therefore, enables work to intrude in private lives.

Other studies have associated the use of mobile devices to positive experiences. Schlosser (2002) investigates employees' perceptions regarding the use of mobile phones. The study targets three organizations in which mobile phones are provided to all those in senior positions, and some employees at lower hierarchical positions. The results of the study show that smartphones simplify communications and, therefore, make the job easier and allows for work to be conducted even while travelling. The study also reports that

simplified communication also increases employees' sense of accessibility and affiliation, as well as expectations of colleagues' availability (ibid.). Lowry and Moskos (2005) conducted another study to explore how mobile phones shape work experience and process, and form boundaries between public and private domains. Their study focuses on employees from a variety of organizations and highlights several benefits of mobile device use in a work context, including flexibility and customer responsiveness, and the optimization of the knowledge supply chain via simplified communications. They use the term "empirical cord" to conceptualize the significance of mobile phones in the workplace. They explain that mobile phones can provide a type of secure work identity to managers, who are able to maintain their leadership roles by contacting their subordinates at any time. Moreover, employees can also feel secure by knowing they are able to acquire required information regardless of time and space constraints (ibid.). It is worth mentioning that mobile phones addressed in the study are not intended for personal communications, as many participants use the term 'work mobile phone' to refer to these devices. The results of the study may not, therefore, be applicable to situations where work communication is conducted via a personal mobile phone.

Another exploratory study was conducted by Mazmanian, Yates and Orlikowski (2006) to investigate the implication of using mobile phones for employees of a small organization. This study focused on employees' use of mobile phones and, specifically, email applications; it highlights positive employee experience towards temporal and spatial flexibility. The use of mobile phones offers the opportunity to stay in the loop, to monitor information flow, and to utilize the notification feature to decide which emails to open and respond to (ibid.). Nevertheless, the positive experience of mobile phone use in this study may be explained by the small organization size in which everyone knew each other. In fact, employees reported that the use of mobile phones for work could be more difficult at another organization. Also, similar to the studies by Schlosser (2002) and Lowry and Moskos (2005), mobile devices were provided to employees by the company (Orlikowski, 2007), so employees actually felt satisfied and lucky for receiving these devices (Mazmanian, Yates and Orlikowski, 2006).

In fact, several studies associating work communications via mobile devices with positive employee experience address communications through company-issued mobile devices, rather than those personally owned (see, for example, Schlosser, 2002; Lowry and

Moskos, 2005; Mazmanian, Yates and Orlikowski, 2006; Towers *et al.*, 2006; Cavazotte, Heloisa Lemos and Villadsen, 2014). Some of these studies discuss the use of mobile devices in general (Lowry and Moskos, 2005; Towers *et al.*, 2006), while many focus on older technologies, such as the use of Blackberry devices whose primary feature is email communications (Schlosser, 2002; Mazmanian, 2013). Therefore, when addressing the implications of work communications mediated by company-issued devices, engaging with work communications outside working hours may be a requirement. That is, employees may feel obligated to adhere to their job responsibilities by engaging in communications via mobile devices. This can dictate employees' experiences and practices in regard to work communications outside working hours.

2.7 Conclusions

The literature reviewed in this chapter illustrates the controversy regarding the implications of ICT for work communications. Work communications via ICT can have various implications based on many factors, including occupation of the user, and the device used. While work communications via mobile technologies can facilitate flexibility and enable communications outside work, this can have implications for employees' work-life boundaries, a topic discussed in detail in the next chapter.

Chapter 3: **Work-life Boundaries**

3.1 Introduction

This chapter presents literature on the boundaries between work and life. It discusses the different views towards the relationship between the domains of work and life. The chapter also discusses work-life boundaries in relation to mobile technology that affords flexible communications regardless of time and space. This chapter highlights the significance of boundary management and discusses the controversy of the management of work-life boundaries.

3.2 Theorizing the Boundaries between Work and Life

Research on the relationship between work and life can be traced back to the 1960s, including the work of Rapoport and Rapoport (1965) who investigated how the industrial revolution created divisions between work and life. Several theories have emerged to conceptualize the relationship between work and life domains. One traditional view of the nature of work and life domains is that they are segmented. That is, the two domains exist independently of each other and, therefore, have no impact on one another. This segmentation can occur naturally due to the nature of the occupation itself, or can be pursued by the employee regardless of their work contexts. Some argue that segmentation can only be applicable to specific occupations, such as blue-collar employees whose jobs do not require extensive involvement (Lambert, 1990).

This early view of segregation between work and life domains arose from traditional societies where men have assumed the role of breadwinners, while women are the homemakers (Clark, 2000). However, changes in societies increased the number of individuals with dual responsibilities in both work and family domains (Clark, 2000). During the 1960s and the 1970s, work-life issues were perceived as exclusively affecting women who struggle to manage the demand of their work and their family. Eventually, the 1990s witnessed a recognition of work-life balance as an issue affecting everyone, including men, and singles (Bird, 2006).

Many researchers took the concept further by highlighting aspects of work that affects family and vice versa (Staines, 1980; Kanter, 1989). In this way, theories of compensation and spillover emerged, in which work and life domains are viewed as interdependent and

with influence on one another. On one hand, the theory of compensation outlines that dissatisfaction in one domain causes employees to pursue satisfaction in the other domain. This theory suggests an opposite relationship between the domains of work and life. That is, to compensate for dissatisfaction in one domain, employees will try to pursue satisfaction by performing activities related to the other domain (Staines, 1980). This, for example, may include staying late at work to avoid family conflict at home. On the other hand, spillover theory highlights that emotions, attitudes, and behaviours can be transmitted between the domains of work and life (Lambert, 1990). Spillover from work to life domain can be identified as a positive spillover, where skills developed at work enable better management of family relationships. Spillover can also take a form of negative spillover, where the worker would carry his work stress, anger, and frustration to his home after leaving work (Staines, 1980).

Theories of segmentation, compensation, and spillover have been traditionally used to explain how work and family influence each other (Lambert, 1990). However, even though compensation and spillover theories account for societal changes not previously considered by segmentation theory, these two theories have their limitations. For example, they focus solely on the emotional connections and influences between work and life, with little or no account for physical, temporal, and social connections between work and life domains (Clark, 2000). Another limitation of these theories is the way that individuals are viewed as reactive players in shaping their work-life boundaries. Clark (2000) argues that the key issue of individuals' ability to mould work-life boundaries and, consequently, shape their environment is neglected.

Clark (2000) defines boundaries as the lines separating work and family domains and marking the point to stop or start domain-relevant activities. While Clark (2000) refers to the boundaries between work and family, other scholars use the term 'work-life boundaries' to emphasize other personal life domains as well (see, for example, Nippert-Eng, 1996; Ashforth, Kreiner and Fugate, 2000; Gregory and Milner, 2009). For Kreiner, Hollensbe and Sheep (2006), boundaries are defined as the borders separating work and life domains while promoting and/or constraining the way in which domains are correlated. Boundaries refer to "the physical, temporal, and cognitive limits that define domains as separate from one another and define components within domains" (Kreiner, Hollensbe and Sheep, 2006, p. 1318). Most recent research has used the term 'boundary'

to refer to the borders between work and life (Kreiner, Hollensbe and Sheep, 2006; Robey and Cousins, 2015; Siegert and Löwstedt, 2019) and, for clarity, this thesis will do the same.

Nippert-Eng (1996) suggests that some individuals establish boundaries between their work and their personal life to ensure the two domains remain segmented (separated), while others construct boundaries so that the domains can be integrated (interconnected). While people can theoretically have either complete separation or complete blurring between their work and life domains, most individuals fall somewhere between the two extremes (Nippert-Eng, 1996). These ideas were elaborated by Ashforth, Kreiner and Fugate (2000) who explore boundary management by focusing on role transitions between the domains of work and life. Nippert-Eng's (1996) work was also developed further by Clark (2000) in her Border Theory. This theory assumes individuals' ability to control and mould boundaries between work and family domains, and explains how individuals manage activities across the two domains. The Border Theory places emphasis on human agency and the role it plays in shaping work-life boundaries (Hislop and Axtell, 2011). As opposed to assuming individuals' reactive attitudes, Clark's theory argues that the boundaries between the two domains are primarily determined by humans. Individuals are "border-crossers" who are transitioning daily between the two domains of work and family (Clark, 2000, p. 747). The boundaries between the two domains can be physical, temporal, and psychological (Ashforth, Kreiner and Fugate, 2000; Clark, 2000; Kreiner, Hollensbe and Sheep, 2006). A physical boundary is a spatial boundary which symbolizes where work or life activities take place. A temporal boundary indicates when to perform domain-relevant activities. Scholars predominantly focus on physical (spatial) and temporal boundaries (Ashforth, Kreiner and Fugate, 2000). The psychological boundary is, to a large extent, influenced by both physical and temporal boundaries. It dictates when it is appropriate to adopt specific thinking or behavioural patterns (Clark, 2000).

These boundaries can be characterized according to their permeability, i.e. the degree to which elements from one domain can enter the other domain (Ashforth, Kreiner and Fugate, 2000; Clark, 2000). An example of physical permeation is when a family member enters an office space at home and starts conversations with an individual who is working. Physical and temporal permeability are frequently perceived as interruptions (Clark,

2000). Boundaries can also take various forms according to individuals' flexibility in meeting the demands of the other domain (Ashforth, Kreiner and Fugate, 2000; Clark, 2000). For example, a boundary is flexible if an employee perceive he can decide when and where to work. Permeability and flexibility of boundaries may result in "a borderland which cannot be exclusively called either domains" (Clark, 2000, p. 757). This suggests the lack of clarity and blurring of boundaries, which can complicate the management of activities across the two domains. This blurring is further intensified given the role of technology and the possibilities it affords for communications, such as work connectivity outside working hours, an element that is neglected by current conceptualizations of boundaries between work and life. Mobile technology, among other factors, can potentially constrain employees control over their work-life boundaries, rendering the human agentic perspective problematic. The literature on the implications of mobile technologies on work-life boundaries, in addition to the significance of boundary management, will be reviewed next.

3.2.1 Work-Life Boundaries and Mobile Technologies

Mobile technologies allow employees to connect with friends and family while at work, as well as to communicate work responsibilities when at home. Prasopoulou, Pouloudi and Panteli (2006) address the notion of boundary management from the perspective of professionals in business organizations, and assert that the spatial flexibility and independence offered by smartphones facilitates the elimination of the rigid temporal boundaries usually found in their occupation.

The role of mobile technologies in mediating the ability to manage boundaries between work and life domains is also confirmed by other studies. For example, Wright *et al.* (2014) conclude that even though mobile technology allows work to interfere with leisure time, some employees realize the benefits of such communications as it provides them with the flexibility to accomplish work tasks in the domain of their choice. Therefore, mobile technologies can reduce work-life conflict for some employees by affording more convenience in conducting their work practices (Wright *et al.*, 2014). In addition, Cousins and Robey (2005) indicate that mobile technologies are used to support the management of work-life boundaries. Their study concludes that technology does not take away control; rather, it increases the effectiveness of the management of boundaries between work and life.

However, communications via mobile technologies can also facilitate the blurring of work-life boundaries and lead to negative spillover as work intrudes into personal lives. Some scholars highlight the disruptive nature of mobile technology and challenge the notion of work-life boundaries. For example, Middleton (2007) explores the use of smartphones for work communications by employees at different organizational levels. Although her study mentions several benefits of smartphone use, such as empowerment and control reported by users, the study refers to such impacts as an "illusion". Middleton explains that the always-on nature of mobile phones does not facilitate the management of boundaries and conflict between work and life but, in fact, complicates the situation. Towers *et al.* (2006, p. 597) explain the use of mobile devices by stating that they place workers "in two spaces – physical space and the virtual space of the conversation – and two times – coffee drinking time and work time". Being simultaneously present at two different places and times diminishes temporal and spatial boundaries. More significantly, such communication requires the individual to withdraw from the present time and place to be present in a world outside the actual physical context (ibid.). Therefore, the use of mobile technologies for work communications has the potential of leading to a negative spillover as work communication increases and work hours become unintentionally infinite (Mazmanian et al., 2006, Lowry and Moskos 2008).

A longitudinal study by Dery, Kolb and Maccormick (2014) reveals that mobile phone practices have evolved to the point where boundaries between work and life are no longer distinct. They add that smartphones make it difficult to leave work behind. The notion of diminishing boundaries is also supported. The empirical study of Harmon (2015) illustrates that work communications outside working hours afforded by mobile technologies can keep employees connected to work, take them away from family times, and destroy work-life boundaries. Orlikowski describes such change by stating that mobile technologies are:

> "Significantly changing why, when, where, and how members interact. Norms of communication are reconfigured, altering expectations of availability and accountability, redefining the boundaries of the workday, and extending and intensifying interactions within the communication network" (Orlikowski, 2007, p. 1444).

Indeed, mobile technologies can reconfigure the nature of the workplace by reshaping many aspects of how, when, and where the work is conducted. This does not only impact

the workplace, but can also affect the lives of individuals and alter work-life boundaries (Orlikowski, 2007). The management of work-life boundaries is therefore essential, a topic I will discuss in more detail in the next section.

3.2.2 The significance of Boundary Management

A key aspect of Border Theory, together with many work-life boundaries theories, is the view of work and life as separate domains with influence on each other (Lambert, 1990; Clark, 2000). Work and life domains can range anywhere from segmented to fully integrated (Nippert-Eng, 1996; Ashforth, Kreiner and Fugate, 2000; Clark, 2000). Segmented domains involve emotional and intellectual separation between the two domains, where an individual would pursue different approaches in each domain (similar to the propositions of the theory of segmentation). Full integration represents situations where an individual does not make a distinction of whether the task is related to work or home, and adopts similar thoughts, social relationships, and approaches in both domains. Employees, organizations, and societies need to ensure the attainment of a balance between work and life, as ignoring one domain could potentially pose a threat on the other (Clark, 2000).

Balance is defined by Clark (2000, p. 751) as "satisfaction and good functioning at work and at home, with a minimum of role conflict". Although segmented domains may infer the existence of a balance between work and life, this does not necessarily hold true. Contrary to what the term balance may suggest, balance between work and life does not represent the allocation of equal time and effort to each of the domains (Clark, 2000). Rather, work-life balance is defined as the ability of individuals to sustain a satisfactory equilibrium between the obligations of work and life domains (Caven and Raiden, 2010). Ashforth, Kreiner and Fugate suggest that:

> "Individuals vary in their preferences for segmentation versus integration – although few prefer complete segmentation or complete integration – and that they generally have some latitude over the degree to which they segment or integrate their roles" (Ashforth, Kreiner and Fugate, 2000, p. 473).

Barley and Kunda (2011) highlight that individuals' control over how and when they work is fundamental to their sense of freedom. Therefore, work-life balance is described as "practices which allow employees some flexibility and autonomy to negotiate their time and presence in the workplace" (Gregory and Milner, 2009, p. 2).

The ability to manage the boundaries between work and life activities leads to the attainment of balance; and therefore ensures mutual satisfaction in both domains (Clark, 2000). The mutual influence between work and life domains has been widely addressed. For example, Repetti (1987) illustrates that individuals possessing autonomy and the ability to exercise choice in the work domain are more likely to be satisfied and balanced in both work and home domains. Kossek and Lautsch (2008) propose that individuals have preferences towards segmentation or integration of their work and life domains. The realization of these preferences can improve employees' lives and reflects on the work aspect as well. The effect of individuals' boundary management on organizations was also highlighted by Wright *et al.* (2014) who illustrate the significance of employees' perceptions regarding the use of technology for after-hours work communications in determining the consequences of such communication tools.

Several scholars argue that boundaries are the product of individuals' decisions (Rychlak, 1981; Clark, 2000; Kossek and Lautsch, 2008), attributing choice to individuals who shape the boundaries between their two domains in a way that suits their needs (Clark, 2000; Prasopoulou, Pouloudi and Panteli, 2006). However, although much research has addressed how spatial and temporal flexibility are enabled by the use of ICT (for example, refer to Section 2.4), more research is needed to explore individuals' ability to manage their boundaries under the presence of ICTs (Dén-Nagy, 2014). Mobile technology may potentially impact the boundaries between work and life as it could place a constraint on individuals' ability to manage communications between the two domains (Towers *et al.*, 2006; Mazmanian, 2013; Dery, Kolb and Maccormick, 2014). While some scholars claim that professionals have more autonomy in deciding when, how, and whether to connect to work outside working hours (Cousins and Robey, 2005; Hislop and Axtell, 2011; Wright *et al.*, 2014), the notion of professionals' control over connectivity remains controversial (Middleton, 2007; Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014). Presented next is a discussion of the literature on work-life boundaries for academics in specific.

3.3 Work-Life Boundaries for Academic Professionals

Academics are presented in the literature to be in possession of autonomy and control over their work practices (Kolsaker, 2008; Heijstra and Rafnsdottir, 2010). However, Many studies highlight that holding an academic position can also complicate the

management of work-life boundaries (Brown *et al.*, 2011; Abramov, Gruzdev and Terentev, 2017). Specifically, academic professionals have traditionally benefited from flexibility, increased levels of control, and autonomy (Heijstra and Rafnsdottir, 2010; Baruch, 2013). However, technology may have primarily increased academics' flexibility further, intensified workload, and allowed for work to further intrude into family times (Currie and Eveline, 2011).

Beigi, Shirmohammadi and Stewart (2018) synthesize the findings of 45 studies on academics' work-life balance. They conclude that the flexible nature of the academic job can increase the conflict between work and life. Unlike other professionals, academics can potentially be more likely to experience problems in negotiating their work-life boundaries as their work demands a wide range of roles, with a never ending requirement of publications (Kinman and Jones, 2008; Baruch, 2013; Beigi, Shirmohammadi and Stewart, 2018). O'Laughlin and Bischoff (2005) investigate the work-life balance of academics and argue that flexible work schedules render work to be often accomplished at home, in the evenings, or on weekends. Academics are expected to teach, research, and provide different services, which, except for physical presence in classrooms, can mostly be done outside the walls of universities (Baruch, 2013).

While several studies explore the role personal preference plays in determining how professionals manage connectivity and set their work-life boundaries (see, for example, Prasopoulou, Pouloudi and Panteli, 2006; Dery, Kolb and Maccormick, 2014; Wright *et al.*, 2014), other studies suggest differently. For example, Brown *et al.* (2011) denote how complex it is for academics to make choices in pursuing a balance between their personal life and professional work. They state that holding an academic position complicates the process of boundary setting and explain how academics' choice-making is filtered through influential values, such as their work ethic and the value they assign to their personal lives. Abramov, Gruzdev and Terentev (2017) highlight the problems faced by academics while allocating time for their work. They state that academics have excessive workload and a lower degree of freedom in deciding their work duration. In addition, they refer to the lack of defined boundaries between academics' work and their personal lives. Similarly, Kinman and Jones (2008) examine the work demands, work-life balance, and wellbeing of academics and indicate that working during evenings and weekends has become commonplace for academics.

The implications of mobile technology for academics' work-life boundaries was analysed by Heijstra and Rafnsdottir (2010) who conclude that flexibility mediated by Internet-enabled devices leads to increased work-life conflict. They highlight that academics are tempted to check on work-related items even during ultimate family times, such as family holidays. Additionally, Currie and Eveline (2011) explore the extent to which technology has transferred work into the family life of academics. Their study reveals academics' need to establish boundaries to separate work and family lives. They explain that although academics acknowledge technology as beneficial to their work, they perceive it as a threat to their family life. The concept of connectivity will be further discussed in the next chapter.

3.4 Conclusions

This chapter presented literature theorizing the boundaries between work and life with an emphasis on the significance of boundary management. The chapter also overviewed the implications of work communications via mobile technologies. Specifically, some scholars debate that mobile communications can facilitate the management of boundaries between work and life, while many others perceive smartphone connectivity as a complicator of the relationship between the two domains. What is evident in the literature is the implication of mobile technologies on the extensions of work communications beyond working hours and the blurring of work-life boundaries (Prasopoulou, Pouloudi and Panteli, 2006; Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014; Butts, Becker and Boswell, 2015). Work communications outside working hours will be discussed further in the next chapter through the concept of connectivity.

Chapter 4:**Connectivity**

4.1 Introduction

In addressing the interactions between humans and technology, there is a need to explore new paradigms of how we interact with technology (Kolb, 2015). This chapter introduces the concept of connectivity to enable a deeper understanding of work communications via mobile technologies. It also discusses the controversy of connectivity management, and reviews relevant literature in relation to agency and the context in which connectivity is enacted.

4.2 Connectivity

Connectivity is a technical term that describes connections between different Information and Communication Technology (ICT) devices, such as connectivity between a computer and a printer, or between a laptop and the Internet. When used to represent technical connections, the word 'connectivity' does not necessarily represent the state of being connected; rather, it is defined as "connecting or serving to connect" (Kolb, 2008, p. 129). Unlike the notion of connectedness, which refers to the status of being connected, connectivity represents a state of potential connectedness. It refers to both connecting, and the potential to connect, to work at any point (Kolb, 2008). The term "connectivity" is nominated as a metaphor for organizational studies as it is increasingly used to represent organizational interactions (Kolb, 2008). Connectivity carries a meaning that is far beyond being connected at a specific point of time. That is, it represents the condition of being connected as well as the notion of being available for the possibility of any future connections (Kolb, 2008). Connectivity to work communications is identified as "workplace connectivity" (Schlosser, 2002, p. 401), and referred to throughout this thesis as 'connectivity' for simplicity.

Employees around the world utilize mobile technologies throughout the day, and these technologies keep them connected to work even after the end of the working day (Dery, Kolb and Maccormick, 2014). Mobile technologies offer a wide range of flexible communications which open the door for the possibility of constant connectivity, a term that is being used increasingly to represent a constant connection to work (see, for example, Wajcman and Rose, 2011; Mazmanian, Orlikowski and Yates, 2013; Harmon,

2015). Constant, (aka ubiquitous), connectivity is not about periods of "use" or "non-use" of the device. Rather, Harmon (2015) introduces computing as a context and, through her empirical research, argues that constant connectivity is a "feeling" that accompanies owners of smartphones who reside in the context of computing. Even though individuals may not literally be constantly connected, they are constantly available for any future connections (Kolb, 2008; Harmon, 2015).

Several companies have took initiatives to promote employees' disconnection from work outside the working hours. For example, Volkswagen has stop its Blackberry servers from sending emails to employees outside the working hours (*BBC News*, 2012). Lidl has banned workers in Belgium from sending work emails from 6p.m. until 7a.m. the next morning (Barr, 2019). Daimler has provided its employees with the option to turn on a "Mail on Holiday" function which automatically delete incoming emails while employees are on holidays, allowing them to come back from holiday to a clean inbox (Peters, 2014). However, Russell and Woods (2020) suggest that such regulations might be harmful to employees. Their study explores individual differences in dealing with connectivity via work-emails and conclude that "one-size-fits-all" regulations should be avoided.

On one side, connectivity via mobile technologies represents flexibility that provides the ability to work anytime/anywhere (Kolb, 2008; Mazmanian, 2013) (see Chapter 2). Such flexibility can also blur and complicate the management of work-life boundaries (Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014) (see Chapter 3). Literature classifies work connectivity into various types, presented next.

4.3 Types of connectivity

Various efforts have been conducted towards the classification of connectivity, including classifying connectivity into different states (Kolb, Caza and Collins, 2012), as performing particular identities at work (Symon and Pritchard, 2015), or into distinct modes of materiality (Cecez-Kecmanovic, Boell and Campbell, 2014). Kolb, Caza and Collins (2012) suggest the state of connectivity as a representation of the amount of connections relative to the requirement of work in a particular context. They argue that recognizing states of connectivity is crucial for understanding the impact of too much or too little connectivity (Kolb, Caza and Collins, 2012). They identify four states of connectivity: hypo-connectivity, hyper-connectivity, requisite (threshold) connectivity,

and connective flow. According to them, the nature of connectivity is "in the eyes of the beholder" (ibid., p. 270). That is, identifying the specific state experienced by a certain individual is based on the evaluation of the individual themselves.

Hypo-connectivity and hyper-connectivity represent counter-productive and extreme states of connectivity, where hypo-connectivity stands for too little connectivity, and hyper-connectivity represents too much connectivity. In other words, the state of hypo-connectivity represents situations where connections are needed but not available, such as the lack of telecommunication facilities between individuals working together from distant locations. Hyper-connectivity represents situations where the high amount of connections is harmful to performance. This includes situations where the high volume of connections leads to the individual being distracted and ineffective (Kolb, Caza and Collins, 2012).

Most work is at least partially facilitated by ICTs, requiring a sufficient threshold of connectivity to achieve work (ibid.). In order to avoid the pitfalls of hypo- and hyper-connectivity, individuals need to maintain requisite connectivity, also referred to as the threshold state of connectivity. The threshold state is identified as having an appropriate amount of connections, which is perceived by individuals as being appropriate for achieving a certain performance or social outcome (ibid.). Kolb, Collins and Lind (2008, p. 183) argue that "between the threshold and overload conditions we may at times experience requisite connectivity as an optimal condition or a state of 'flow'". Connective flow is defined as the state "where communication is highly effective and highly efficient and balanced in accordance with our needs and the demands of the task or situation at hand" (ibid.). This state is considered to be an optimal state at which individuals experience connectivity that meets the demand of their work and what they think is right for them as individuals (Kolb, Caza and Collins, 2012; Dery, Kolb and Maccormick, 2014; Kolb, 2015). It leads to individuals achieving a balance in which connectivity feels "just right", "even if it may be brief or fleeting" (Kolb, Caza and Collins, 2012, p. 270). Little empirical research has addressed how technology users regulate the flow of connections on their mobile devices (Wajcman and Rose, 2011; Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014). According to Kolb, Caza and Collins (2012), this state, how it feels, and how it is achieved is expected to be the focus of future research.

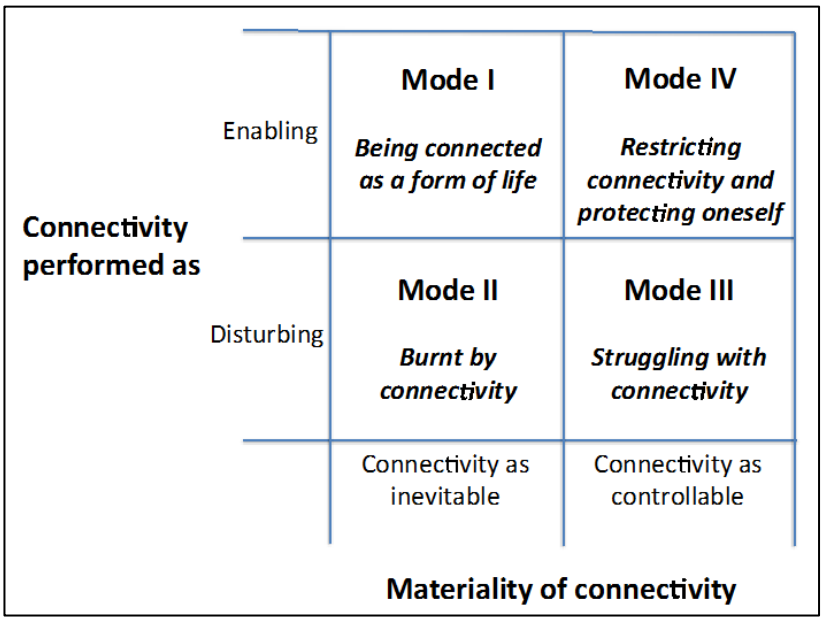
While the connective flow implies that desires for connectivity may vary (Kolb, Collins and Lind, 2008; Kolb, Caza and Collins, 2012), current conceptualization of the states of connectivity does not sufficiently capture such variation. Symon and Pritchard (2015) assert that identifying various states of connectivity implies that connectivity pre-exists its experience. They offer a different perspective on connectivity that takes identity into consideration and argue that connectivity is not about how much connectivity exists in a setting, but is also influenced by one's identity as an employee. Reporting on narratives from a variety of employees, they suggest that connections are:

> "Sociomaterial assemblages that perform particular identities: being contactable and responsive; being involved and committed; and being in-demand and authoritative" (ibid., p. 241).

By suggesting these connected identities, Symon and Pritchard (2015) advocate that connectivity is a demonstration of sociomateriality and cannot exists outside its identity performance.

While Kolb, Caza and Collins (2012) states of connectivity are useful for identifying and addressing technological communication in organizations, this categorization of states of connectivity does not provide an explanation of materiality of connectivity, i.e. how connectivity is experienced and performed (Cecez-Kecmanovic, Boell and Campbell, 2014). To remedy this criticism, Cecez-Kecmanovic, Boell and Campbell (2014) developed a model with four modes of connectivity: being connected as a form of life, struggling with connectivity, burnt by connectivity, and restricting connectivity and protecting oneself. The way in which connectivity matters to professionals depends on how it is experienced (inevitable or controllable) and enacted (enabling or disturbing). These categories are presented in Figure 4.1 below.

Figure 4.1: Materiality of Connectivity



Source: (Cecez-Kecmanovic, Boell and Campbell, 2014)

These four categories illustrate that professionals' perceptions of connectivity differ. They provide evidence on how professionals can experience connectivity as enabling or disrupting. This classification, however, suggests distinct experiences and enactments of professionals. It does not provide sufficient understanding regarding whether connectivity can be viewed as both enabling and constraining for professionals.

As opposed to the classification of connectivity proposed by previously mentioned studies, Matusik and Mickel (2011) take this classification a step further and classify connectivity based on individuals' reaction to connectivity. They assert that individuals' reactions to connectivity are different and can fall into three categories: enthusiastic, balanced, and trade-offs. Enthusiastic reactions represent individuals' experiences of personal and professional benefits and with no costs. Balanced reactions represent individuals who express cost-benefit experiences. Trade-off reactions represent professional benefits and, unlike balanced reactions, with significant personal costs (ibid.). Different classifications of the reactions to connectivity are attributed to several social influencers, such as the organization and whom individuals interact with, as well as individuals' family and society in general (ibid.). Most classifications of connectivity tend to take a human agential perspective, suggesting that connectivity, and consequently

reactions to connectivity, is mainly attributed to social factors. The next section will look more closely into the concept of connectivity in relation to agency.

4.4 Connectivity and Agency

In conceptualizing agency, Pickering (2001) defines human agency as the formation and realization of one's goals. Archer (2000) considers individuals in relation to the social world and highlights the analytical separation between the social and the individuals. Giddens (1984) signifies the structure of rules, resources, and practices. He highlights individuals' intentional and rational actions, and refers to agency as the capability to act in accordance with intentions and to produce consequences from actions. Bourdieu (1990) refers to agency as the result of the interplay between the agent's habitus (such as the individual's beliefs and orientations), and his interaction with various social fields (i.e. his social positions in relation to access to power).

Unlike many approaches to agency, Emirbayer and Mische (1998) conceptualize agency with a consideration to temporality, such as potential consequences of actions and past experiences. Emirbayer and Mische define agency as:

> "A temporally embedded process of social engagement, informed by the past (in its "iterational" or habitual aspect) but also oriented toward the future (as a "projective" capacity to imagine alternative possibilities) and toward the present (as a "practical-evaluative" capacity to contextualize past habits and future projects within the contingencies of the moment)" (ibid., p. 963).

In their definition, they present human agency to be both enabled and constrained by social norms, expectations, and extant situation.

Many scholars argue that previous conceptualizations of agency define it in terms of 'human subjects', ignoring the agency of non-humans (see, for example, Pickering, 2001; Jones and Cloke, 2008). They take a different approach to agency by recognizing the notion of material agency. Pickering (2001) differentiates human agency from material agency, which stands for the performativity of technology, i.e. actions of technology that humans do not directly control. Material agency refers to "the way the object acts when humans provoke it" (Leonardi, 2013, p. 70). This, for example, include the things a technology can do which humans cannot control (Leonardi, 2013).

Scholars have offered different perspectives toward the relationship between human and material agencies. For example, Barad (2003) argues that agency does not belong to either humans or the material. She suggests that human and technology interactions are mutually constitutive. This view advocates that human and material agency cannot be studied separately and should be addressed in conjunction with one another. Leonardi (2011) emphasises that neither human nor material agencies are empirically important by themselves, but recognizes the two forms of agencies as distinct phenomena. He uses the metaphor of "imbrication" to demonstrate the interlocking between human and material agencies (ibid., p. 150). This concept will be further elaborated in the next chapter.

The concept of agency has been adopted by many scholars addressing the notion of connectivity, mostly through a human-centric approach (see, for example, Cousins and Robey, 2005; Hislop and Axtell, 2011; Richardson and Benbunan-Fich, 2011; Dery, Kolb and Maccormick, 2014). Kolb (2008) emphasise human free will and identifies actor agency as an attribute of connectivity. He argue that due to individuals' free-will and ability to exercise control, the full potentiality of work connectivity is rarely realized. He explains that when using mobile technologies, individuals may have devices equipped with calls, texts, instant messages, and email capabilities, but they may not necessarily be connected to work outside working hours because individuals have control over when and how to connect to work, together with the choice of shutting off all work communications outside working hours (ibid.). Dery, Kolb and Maccormick (2014) explore the management of connectivity and refer to agency as human choice. Similarly, Cavazotte, Heloisa Lemos and Villadsen (2014) refer to connectivity management as a matter of free choice.

However, few studies have addressed the concept of managing connectivity outside working hours with a consideration to materiality (see, for example, Mazmanian, 2013; Mazmanian, Orlikowski and Yates, 2013). Most of these studies recognize the implications of materiality on connectivity, but without explicitly referring to it as agentic. Presented next is a review of the literature on connectivity management and the role of human and material agencies.

4.5 Connectivity Management

Connectivity management refers to the practice of managing connective decisions (i.e. if, when, how, and how much to connect) (Dery, Kolb and Maccormick, 2014). Too much or too little connectivity relative to job requirements might be harmful to both individuals and organizations (Collins and Kolb, 2012; Kolb, Caza and Collins, 2012). Achieving optimal connectivity does not only demand individuals' management over the mode of communications but also over the intensity of communications (Collins and Kolb, 2012). Finding optimal connectivity remains "an ongoing dynamic challenge" (Kolb, Collins and Lind, 2008, p. 188). Many scholars suggest that individuals enact optimal connectivity through a 'connective flow' (Kolb, Collins and Lind, 2008; Wajcman and Rose, 2011; Kolb, Caza and Collins, 2012; Dery, Kolb and Maccormick, 2014) (as shown in Section 4.3 on p. 32). Research on the concept of connectivity management is still in its infancy (Wajcman and Rose, 2011). To gain a better understanding of this concept, debates related to connectivity management will be reviewed next.

Extant literature highlights three views in regard to human and material agency in the practice of connectivity management. One stream outlines how human management of work communications is facilitated by technology. This stream adopts a human agency perspective that underplays the role of the material (Orlikowski, 2007). A great deal of research in this stream discusses the use of mobile devices, without explicitly referring to the term "connectivity". More specifically, professionals are presented as being in control of their connective decisions, and technology is conceptualized as a mere enabler – albeit not an agent – of human decision-making. The second stream acknowledges the implications of connectivity for professionals, discussing their efforts in managing connectivity. This stream either recognizes the disruptive nature of technology with a focus on human agency, or considers technology more explicitly by incorporating a discussion of the role of materiality in shaping human decisions (Leonardi, 2012). The third stream argues that technology accelerates connectivity, resulting in professionals' connectivity management being an illusion. This last body of literature prioritizes material agency in framing the extent, the type and the mode of connectivity that individuals practice (Middleton, 2007; e.g. Mazmanian, Orlikowski and Yates, 2013).

The empirical literature on connectivity management within these three streams will be reviewed next.

The first stream of literature on connectivity management denotes that technology enables professionals to manage connectivity. For example, Cousins and Robey (2005) target employees of a financial company and address patterns of their technology use in managing professional and personal domains. They indicate that mobile technologies support professionals in managing work communications. Their study concludes that technology does not take away control; rather, it increases the effectiveness of the management of boundaries between work and life (Cousins and Robey, 2005). Wright *et al.* (2014) also investigate the implication of work communications outside working hours for employees from a variety of companies. Their study concludes that such communication tools provide flexibility that enables employees to accomplish work tasks in the domain of their choice. Similarly, Hislop and Axtell (2011), who investigate engineers' use of mobile phones, conclude that the use of mobile technologies can facilitate the management of communications across personal and professional domains.

Professionals' management of connectivity is further explained by Kolb (2008) who takes a human-centric approach to connectivity. He argues that although connective options are readily available, individuals may not necessarily experience intense connectivity because they can manage a "duality" of connections and disconnections. Following Kolb's (2008) work, the concept of connectivity started to emerge in various empirical studies. This second stream looks into professionals' practices in managing connectivity while recognizing the implications of disruptive technology (see, for example, Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014; Siegert and Löwstedt, 2019). These studies assert that, due to connectivity, individuals cannot entirely disconnect from work, but indicate that connectivity outside working hours is manageable. Richardson and Benbunan-Fich (2011) explore work connectivity behaviours outside working hours and state that such behaviours are significantly related to individual characteristics and organizational norms about connectivity. They also state that connectivity management practices are influenced by the distribution of mobile devices by organizations, as well as the functionality of mobile devices in use.

The study by Dery, Kolb and Maccormick (2014) explores how professionals in a financial firm manage work connectivity outside working hours. They explain this by

stating that employees possess one smartphone for personal communications and another company-issued smartphone. Therefore, although they do not entirely disconnect from either of these devices, they experience a connective flow by switching between the two devices based on the situation. For instance, during periods of increased workload, employees may engage in work communications while being in non-work contexts, such as when with family or when commuting. This suggests that connectivity enables employees to experience a flow of connections and disconnections and can therefore manage connectivity according to their preferences and needs (ibid.). A similar concept is used by Mazmanian, Orlikowski and Yates (2013, p. 1343), "buffered availability", to represent how professionals manage connectivity. In their study, they explore how mobile devices are used by professionals from multiple industries, and state that professionals may keep an eye on the flow of communication on their email devices without feeling pressure to engage immediately. Therefore, they are deemed to be able to manage connectivity by staying in touch with the flow of communications while deciding when, how, and if to respond. Other studies have reached similar conclusions (e. g. Mazmanian, Yates and Orlikowski, 2006; Wajcman and Rose, 2011). More recently, Siegert and Löwstedt (2019) have looked into how the affordances of technologies influence the relationships between work and life domains. The study identifies three strategies that people use to manage intrusions of work connectivity to their personal domain: prevention (discouraging boundary transgressions), diversion (trying to remedy temporarily permeable boundaries), and retaliation (increasing boundary strength). These authors acknowledge the constraining power of technology and indicate the limited use of these tactics.

The third stream challenges professionals' control over work connectivity. For example, Mazmanian, Orlikowski and Yates (2013, p. 1337) use the term "autonomy paradox" to highlight the discrepancies between professionals' perceptions and actions, and to illustrate how mobile devices increase and simultaneously decrease professionals' autonomy. Specifically, while professionals perceive the use of their email devices as a facilitator of autonomy and control over work practices, they tend to use their BlackBerries everywhere and all the time, leading to blurred work-life boundaries and making it difficult to disconnect from work. The findings of their study also appear in the study by Middleton (2007); this study investigates the relationship between mobile technologies and work-life boundaries of BlackBerry users in various industries. In her

study, Middleton (2007) argues that disconnection in an "always-on" environment is not possible and that control of connectivity is an illusion. Like Mazmanian, Orlikowski and Yates (2013), Middleton (2007) highlights that professionals acknowledge that mobile technologies may facilitate work intrusions into personal life. However, under the assumption that mobile communications facilitate their flexibility, professionals willingly adopt mobile technologies in their work communications.

Harmon (2015) proposes a similar view to that outlined by Middleton (2007). They both seem to share the proposition that the use of mobile devices places users in an environment or a context in which boundary control is difficult. In her study, Harmon concludes that constant connectivity is beyond the frequency of use, as the mind is constantly occupied by the possibility of potential future communications that could take place via professionals' personal smartphones. Cavazotte, Heloisa Lemos and Villadsen (2014) take this a step further by focusing on explaining professionals' conscious engagement in escalating work connectivity. They address professionals at a law firm and highlight the paradox between professionals' acknowledgement of negative implications of connectivity, and their lack of resistance. Their study identifies three strategies professionals pursue to navigate this contradiction: invoking the idea of the autonomous self, trivializing work activities and laughing about their excessiveness, viewing work connectivity as an inescapable external fact they cannot control. The study concludes that the continuous escalation of connectivity is attributed to the combination of professionals' awareness of the harmful effect of connectivity, together with their perception of control over work connectivity.

All in all, extant literature conceptualizes connectivity management using multiple terms, departing from the concept of duality (Kolb, 2008) towards the concepts of connective flow (Dery, Kolb and Maccormick, 2014) and buffered availability (Mazmanian, Orlikowski and Yates, 2013), or denying connectivity management all together (Middleton, 2007). A great deal of research on managing connectivity outside working hours advocates a human agency perspective (Cousins and Robey, 2005; Kolb, 2008; Hislop and Axtell, 2011; Dery, Kolb and Maccormick, 2014; Siegert and Löwstedt, 2019), while few consider the role of materiality (Mazmanian, Yates and Orlikowski, 2006; Mazmanian, Orlikowski and Yates, 2013). However, the interplay between the

social and the material has been largely overlooked (Orlikowski, 2007; Orlikowski and Scott, 2008; Leonardi, 2011).

This thesis contributes to the literature on connectivity management by taking a different perspective; one that departs from the human-centric view towards an exploration of these practices as shaped by a variety of social and material elements, including consideration of technology within an organizational context, which is what the following section focuses on.

4.6 Connectivity Management within Organizational Contexts

The capacity of humans to perform their intended actions is both constrained and enabled by their organizations (Emirbayer and Mische, 1998) including their culture (i.e. "symbolic patterns, social discourses and narratives of different reach"), structure (i.e. "interpersonal, interorganizational, or transnational patterns of action and social positions"), policies and regulations, norms and expectations, and shared logic of actions (Scott, 2008). Leonardi (2011, p. 164) conceptualizes organizations as "imbricated systems of human and material agencies", illustrating that the imbrication of human and material agencies produce changes in routines and technologies within organizations. Leonardi (2011) emphasizes the significance of the context, arguing that employees' behaviours and decisions are influenced by both human and material agencies within organizations.

The organizational context can influence the intensity of work communications outside working hours, the implications of these communications (Lowry and Moskos, 2005; Hislop and Axtell, 2011; Matusik and Mickel, 2011), and the management of such connectivity. The work of several scholars provides evidence of the significance of technology enacted within organizations in affecting the practices of employees. Many scholars discuss this through the concept of affordances (Leonardi, 2011; Seidel and Berente, 2013; Hultin and Mähring, 2014; Robey and Cousins, 2015). Robey and Cousins (2015, p. 37) define affordances as "the relationship between material artifacts and their social contexts of use". Their study illustrates that affordances of mobile technologies are implicated in mobile workers' management practices, emphasizing the influence of the work context on these affordances (Robey and Cousins, 2015). This conclusion is also

consistent with that of Seidel and Berente (2013) who also argue that affordances of technologies are enacted in practices within organizational contexts.

However, despite evidence regarding the role of the organizational context and mobile technology within organizations for employees' practices, further research that look into how the organisational context influences connectivity management practices is needed. Robey and Cousins (2015), who explore the role of technology in mobile workers' efforts to manage their work-life boundaries, recognize that the lack of contextual information in their study has hindered a more critical analysis. They call for research on how work context shapes workers' management strategies (Robey and Cousins, 2015). When referring to the organizational context, extant research on connectivity outside working hours has predominantly focused on the role of occupation. For instance, scholars have addressed teleworkers working mainly from home (Musson and Tietze, 2003; Mazmanian, Yates and Orlikowski, 2006), police officers making frequent visits to various locations (Sørensen and Pica, 2005), and professionals traditionally working at a designated location (Prasopoulou, Pouloudi and Panteli, 2006).

These studies have offered contradictory findings in regard to the implications of the mobile technologies that organizations adopt for work communications. For example, employees in mobile jobs reported that the use of smartphones for work communications provides them with information updates; however, it also raises the expectations of constant availability and extends their work beyond the expected workdays (Mazmanian, Yates and Orlikowski, 2006). Another study conducted on knowledge workers in an IT consultant group revealed that mobile technologies facilitate access to resources, improving collaboration, and making the job easier (Breu, Hemingway and Ashurst, 2005). The literature suggests that connectivity is mostly beneficial for work that needs to be conducted at different times or locations; for instance, for engineers who work alone most of the time (Hislop and Axtell, 2011) or teleworkers who are enabled by ICT to receive assignments and report progress without the need to go back to the office (Barnes, 2012).

This variation in findings reveals that implications and perceptions regarding the adoption of mobile phones tend to vary in different work contexts. Therefore, examining the implications of mobile technologies with a consideration of the occupational context is worth studying (Prasopoulou, Pouloudi and Panteli, 2006; Hislop and Axtell, 2011). This

is further evidenced by Mazmanian (2013) who studied two occupational groups: in-house attorneys and mobile salespeople. Her study revealed that smartphones increased the expectations of availability for attorneys, but had minimal implications for the mobile sales force, concluding that connectivity is contingent on a range of occupational factors, including identity, social pressure, and expectations.

4.7 Conclusions

In this chapter, I introduced the concept of connectivity, discussed the controversy of connectivity management, and overviewed factors potentially shaping connectivity management practices. Extant literature on connectivity management limits an in-depth understanding of the topic for several reasons. For example, the literature has predominantly focused on work-sponsored BlackBerries (see, for example, Schlosser, 2002; Lowry and Moskos, 2005; Mazmanian, Yates and Orlikowski, 2006; Towers *et al.*, 2006; Dery, Kolb and Maccormick, 2014), constraining an understanding of the management of connectivity via other devices (such as via personal devices or other mobile technologies). Furthermore, only very few studies refer to the context in which connectivity is enacted, usually attributing variations in connectivity management practices to variations in occupation (see, for example, Mazmanian, 2013; Mazmanian, Orlikowski and Yates, 2013). Extant studies do not provide an understanding of other parameters influencing connectivity management practices, such as variations in working hours' arrangements or the technology used. In fact, the role of technology is typically placed in the background. Most of the literature on connectivity management takes a human-centric approach, not giving an explicit account of the role of technology in shaping these practices. Presented next is the theoretical framework followed by the research design employed in this thesis to further our understanding of the topic.

Chapter 5: **Theoretical Framework**

5.1 Introduction

This research explores academics' management of work connectivity. Connectivity is mediated by academics' mobile devices, and therefore it is important to consider both the social and the material aspects of connectivity. This can be accomplished by thoughtfully selecting a framework that considers both the social (such as social norms and expectations) and the material (including digital applications and technological artefacts) in shaping academics' practices. This chapter starts by discussing theories on the relationship between the social and the material. Introduced next is the concept of sociomateriality as suitable theoretical framework that satisfied the above criteria.

5.2 Theorizing the Relationship between the Social and the Material

It is assumed that specific characteristics of technology impact our lives, but it is also argued that humans' actions when using technology determine the impact of technology on people's lives (Grint and Woolgar, 1997). Some aspects, such as humans' attitude towards technology, technological capabilities, and assumptions about technological change, could account for an understanding of technology implications or consequences in humans' lives (Davis, 1993; Taylor and Todd, 1995; Grint and Woolgar, 1997). Several studies have been conducted to understand technology and how it is adopted in organizations, many of which were focused either on the effects of technology, or on the use of the technology by humans (Orlikowski, 2007). In scholarly discussions, humans may represent organizations, clients, employers, or employees; while technology can represent wide systems, such as the Internet, or specific technological artefacts and digital applications, such as personal computers (PC)s and emails (Dafoe, 2015).

Following previous views, many scholars argue against the sole effect of either humans or technology, placing emphasis on the outcome of the interplay between the social and the material (Orlikowski and Scott, 2008; Leonardi, 2011). In order to select an appropriate framework for theorizing the relationship between humans and technology, this section will overview various perspectives on this notion, including technological determinism, social construction of technology (SCOT), social shaping of technology

(SST), actor-network theory (ANT), and sociomateriality, which is the framework adopted in the research.

Technological determinism views technology as an exogenous force that determines social behaviours (Grint and Woolgar, 1997). This school of thought is built on two premises: (1) technology develops based on its inner logic regardless of context and users, and (2) technology's impact is predetermined and inevitable (Williams and Edge, 1996). Technological determinism focuses on material agency, suggesting that a technology has a homogeneous impact on individuals and organizations, and that factors such as where and how technology is used have little or no effect on the impact of the technology. In other words, this perspective proposes that human behaviour is determined by technology that is independent and not affected by social aspects (Grint and Woolgar, 1997). For this research, technological determinism would suggest that connectivity mediated by a specific mobile technology has the same implications, regardless of where it is used or by whom. This perspective is problematic because it focuses on technology, ignoring the role of the social, also contradicting core connectivity research stressing that it is social norms that shape the impacts of technology (see, for example, Schlosser, 2002; Boswell and Olson-Buchanan, 2007, 2007; Russell, O'Connell and McGinnity, 2009).

In response to the perspective of technological determinism, several social constructivist approaches on technology have emerged, including SCOT, SST, and ANT (Grint and Woolgar, 1997). SCOT holds a proposition opposite to that of technological determinism, asserting that technology does not determine humans' actions; rather, the actions of humans shape the impacts of technology. SCOT focuses on the interpretative flexibility of technology, i.e. how different groups involved with technology can have different interpretations of the technology and its characteristics (Bijker, 1997).

MacKenzie and Wajcman (1999) criticize SCOT for taking technology for granted, rather than explaining it. They advocate the metaphor of 'shaping' instead of 'social construction' because first, "one of the ordinary meanings of 'construction' implies falsehood", making SCOT "too prone to the misconception that there was nothing real and obdurate about what was constructed"; and second, because 'social shaping' does not involve wider social relationships such as the external factors of gender and class (ibid., p. 32). Similar to SCOT, SST argues for the significance of the social. Instead of focusing on interpretative flexibility, it focuses on the factor of choices. More specifically, it stands

on the premise that each technology comes with a set of different options, and that social factors play a role in the option selected, whether consciously or subconsciously (Williams and Edge, 1996). SST rejects technological determinism and signifies the impact of social relationships on technology. It argues that functions and the impacts of technology differ based on the social or organizational context (MacKenzie and Wajcman, 1985).

When it comes to connectivity, the material (including technology) is implicated in humans' social practices (Symon and Pritchard, 2015). Both SCOT and SST incorporate the social to remedy the limitation of technological determinism. However, with this focus on the social, technology is taken for granted. In their book, *The Social Shaping of Technology*, MacKenzie and Wajcman explain:

> "The problem with this formulation is its neglect of the valid aspect of technological determinism: the influence of technology upon social relations. To put it in other, more accurate, words, it is mistaken to think of technology and society as separate spheres influencing each other: technology and society are mutually constitutive" (1999, p. 41).

Technological determinism should not be entirely rejected because it holds a partial truth; that technology does affect humans (MacKenzie and Wajcman, 1999). Theories placing an emphasis on either technology (such as technological determinism), or humans (such as SCOT and SST) tend to underestimate the agential role of either humans or the material, restricting a rich understanding of connectivity management practices.

A theoretical perspective that overcomes many issues in the previous conceptualization of social and technological relationships is the Actor-Network Theory (ANT), developed by Bruno Latour, Madeleine Akrich, Michel Callon, and John Law (MacKenzie and Wajcman, 1999). ANT rejects viewing social relationships as independent of technology, proposing that reality is shaped by the network, the actors within the network, and the relationship between them (Grint and Woolgar, 1997; Latour, 2005). ANT is thus concerned with the construction of a broadly defined network, in terms of how the actors work together to generate output, rather than working independently. Actors within a network can be anything that constructs reality and involves both human and non-human entities; these are, therefore, referred to as 'actants' (Grint and Woolgar, 1997). Actants can be people or objects, and their number and impact as part of a network cannot be determined in advance. Actants can be human entities such as employees or managers,

and non-humans such as Information and Communication Technology (ICT), including computers or mobile phones, and doors, hotel keys, or bridges. Non-human objects are as important as the humans in any given network. ANT suggests that society can be analysed through the identification of associations and interactions among actants within that network.

ANT takes both the social and the material into consideration. However, ANT refutes the separation between the social and the material lines of thought. By referring to both the social and the material as "actants", ANT stands on a relational flat ontology, viewing actants as existing only through their relationships within a network (Cecez-Kecmanovic *et al.*, 2014). The aim of this research is to explore connectivity management practices in light of various social and material elements. These practices may not necessarily be enclosed within a network. ANT, however, presupposes a closure to the process of network building and focuses on the formation of the network and the relationships among actants within the network. It can therefore restrict an exploration of the outcome of the interplay between social and material elements beyond a specific closure. In other words, while the overall principal of ANT viewing the social and the material as equally important is vital for this research, the focus on the 'network' can restrict a rich understanding of connectivity management practices. ANT stands out as a predecessor of sociomateriality, the framework adopted in this research (Leonardi, 2013; Cecez-Kecmanovic *et al.*, 2014), which is presented next.

5.3 Sociomateriality

The concept of sociomateriality was introduced by Orlikowski (2007) to emphasize the role of materiality in everyday life. Sociomateriality moves away from focusing on how humans and technology affect one another, to an examination of the outcome of their interplay (Orlikowski, 2007; Orlikowski and Scott, 2008; Leonardi, 2011). Sociomateriality derives from the two words, social and material, noting that all materiality is social, and all social actions are mediated by some materiality (Orlikowski, 2007; Leonardi, 2012). Sociomateriality in organization studies advocates that the "material" (e.g., buildings, devices, telephones, emails, etc.) is inherent in social organizational practices (such as in decision making, categorizations, and strategy formulation) (Orlikowski, 2007; Orlikowski and Scott, 2008; Leonardi, 2012, 2013).

While the intellectual roots of sociomateriality have not been clearly defined or acknowledged (Cecez-Kecmanovic *et al.*, 2014), ANT stands out as a predecessor of sociomateriality (Leonardi, 2013; Cecez-Kecmanovic *et al.*, 2014). What the two share in common is that neither privileges the social or the material over the other (Latour, 2005; Orlikowski, 2007; Leonardi, 2013). Some scholars identify ANT as a sociomaterial perspective, and sometimes use them interchangeably (see, for example, Orlikowski and Scott, 2008; Stein *et al.*, 2014). However, many scholars posit differences between sociomateriality and ANT, such as in terms of philosophical foundation, approaches for conveying knowledge, and empirical contribution. According to Leonardi (2013), the philosophical focus of ANT is more ontological towards the reality of a network composed of different social and material artefacts (referred to as actants). On the other hand, sociomateriality is mostly inspired by the work of Barad (2003), whose focus towards the distinction between the social and the material is more epistemological (Leonardi, 2013). Therefore, sociomateriality is more concerned with how scholars know what is out there in the world (Leonardi, 2013). Second, while ANT focuses the discussion on the network, and refers to both humans and non-humans as "actants" (Latour, 2005; Cecez-Kecmanovic *et al.*, 2014), sociomateriality involves a "language game" by emphasizing the role of both the "social" and the "material" in organizational life (Leonardi, 2013, p. 65). Finally, and most relevant to the selection of a sociomaterial framework in this thesis, ANT is useful for delivering knowledge on the formation of the network and "how" the relationships between its actants are formulated and maintained (Latour, 2005; Cecez-Kecmanovic *et al.*, 2014). Sociomateriality, on the other hand, is concerned with the practices between the "social" and the "material", referred to as "sociomaterial", looking at the outcome of the interplay between the social and the material (Orlikowski, 2007; Leonardi, 2011).

An emerging stream of research has approached connectivity as a sociomaterial practice (Wajcman and Rose, 2011; Cecez-Kecmanovic, Boell and Campbell, 2014; Symon and Pritchard, 2015). Sociomateriality can overcome limitations in previous connectivity management research because it remedies previous social organizational studies by viewing materiality in a way that does not "ignore it, take it for granted, or treat it as a special case, and neither does it focus solely on technology effects or primarily on technology use" (Orlikowski, 2007, p. 1437). Sociomateriality draws attention to the

significance of the material with which people work (Leonardi and Rodriguez-Lluesma, 2012). As Leonardi and Rodriguez-Lluesma state:

> "The emerging perspective on sociomateriality has a number of benefits for research on the management of technology in organizations. One of these benefits is that it by defining technologies and organizations in the same way—as constellations of social and material agencies—organizations and information systems scholars can finally dispense with debates about technological VS social determinism" (ibid., p. 80).

Instead of focusing solely on either the impact of technology or its use by humans, sociomateriality denotes that what is sociomaterial is not the technology but the practices produced by the interplay between the social and the material aspects (Orlikowski, 2007; Leonardi, 2012). Sociomateriality emphasizes the significance of the 'practice' of individuals in the presence of technology (Orlikowski, 2007; Leonardi, 2012). As Leonardi and Rodriguez-Lluesma explain:

> "A second benefit is that discussing organizational practices as 'sociomaterial' reminds researchers that technology is not only important during times of implementation, but that the affordances tools provide people for conducting work tasks are part of that work and, consequently, central to all organizational processes" (Leonardi and Rodriguez-Lluesma, 2012, p. 80).

In the context of this research, practice refers to connectivity management practices. As noted by Orlikowski and Scott (2008, p. 463), "practices are always sociomaterial". The sociomaterial perspective moves the discussion away from merely focusing on professionals' decisions, taking into account the interplay between both the social and the material in shaping these decisions. The framework of sociomateriality can facilitate capturing the complexity of connectivity management practices, while simultaneously considering the significance of the interplay between the social and the material. Fenwick (2016) highlights that a key contribution of the sociomaterial framework is moving away from a human-centric ontology towards a recognition of the interplay between the social and the material through which everyday practices are produced. She explains:

> "A sociomaterial approach – where the material and the social are viewed as mutually implicated in bringing forth everyday action and knowledge – offers a different configuration for rethinking professionalism. The emphasis shifts away from preoccupation with language, communication, discourses, and the social to also foreground the important contributions to practice of material substances, settings, and devices" (ibid., p. 669).

Several scholars have encouraged the adoption of the framework of sociomateriality, such as for conducting organizational research (Orlikowski, 2007; Orlikowski and Scott, 2008), and for addressing connectivity (Cecez-Kecmanovic, Boell and Campbell, 2014; Kolb, 2015). Kolb advocates the contribution of sociomateriality for connectivity literature. He explains:

> "Essentially, the sociomaterial view is that while society is still socially constructed, our interpretations, enactments and sense making all involve, and are affected (though not necessary determined by) the material attributes (including design, functionality, look and feel) of the technology and anything in the material world. In short, we humans make stuff up in our heads, but the stuff outside our heads--and in our hands- still matters!" (Kolb, 2015, p. 5).

Research addressing connectivity as a sociomaterial practice is still in its infancy. Extant literature is helpful in furthering our understanding of the relationship between the sociomaterial and connectivity. For example, Symon and Pritchard (2015) bring together the concepts of sociomateriality and identity work to understand how connectivity is experienced and managed. They conceptualize connectivity as "an entanglement of different agencies that produce connections" (ibid., p. 256), suggesting that connections in organizations are sociomaterial assemblages. They argue that connectivity is not only about the level of communications or engagement with work, but is also about being known in the organization and enacting that identity. The study reports on the narratives of a variety of employees in an engineering firm. Their participants had differing work positions and responsibilities, ranging from corporate managers to technical specialists. Therefore, while their study provides useful insights regarding the conceptualization of sociomateriality, connectivity, and identity, it does not explain how connectivity is managed by employees of similar work responsibilities. Similar to Symon and Pritchard (2015), Cecez-Kecmanovic, Boell and Campbell (2014) also address connectivity through a sociomaterial framework. They develop a model illustrating how connectivity matters in different ways according to how it is experienced and enacted within the sociomaterial circumstances of professionals. Cecez-Kecmanovic, Boell and Campbell (2014) emphasize the importance of the view of sociomateriality for understanding the phenomenon of connectivity and call for further development of this notion.

Wajcman and Rose (2011) consider how the entanglement between the social and the material shape knowledge workers' interactions with mobile technologies. They disagree with the potentiality of connectivity to cause interruptions to individuals and highlight

individuals' ability to prioritize mobile communications and respond accordingly. Their study investigates professionals' management of work connectivity during, rather than outside, working hours. Participants' connectivity management practices are made within the work context, and for the purpose of work. Therefore, the study does not provide sufficient understanding of the implications of such entanglement when connective decisions are practised outside working hours. Robey and Cousins (2015) explore the role of technology in mobile workers' efforts to manage their work-life boundaries. They identify connectedness as one of the affordances of technology and define it as "The potential to engage with the mobile technology to establish communications" (ibid., p. 46). They state that as a result of the affordances of technology, mobile workers are able to manage their work-life boundaries. For example, they argue that the affordance of connectedness can facilitate the establishment of rigid temporal boundaries. They explain this by workers' activities of switching off their phone at the end of the workday, or by not checking email outside working hours unless there is an emergency. They conclude that connectedness, among other technology affordances, supports individuals' strategies for managing their work-life boundaries. While their study offers some useful insights regarding how workers manage their work-life boundaries, the purpose of the study is to illustrate how mobile technologies contribute to the management of work-life boundaries. Therefore, the study takes a positive stand regarding the role of technology in the management of work-life boundaries, thus illustrating how connectedness supports working anytime/anywhere, but without allowing sufficient understanding of how individuals manage the affordance of connectedness.

Towards exploring connectivity management practices, and in line with the sociomaterial perspective, this research does not view professionals' connective decisions as a direct result of the materiality of the mobile devices (such as attributing decisions to the devices and/or platforms used for communications), nor does it consider professionals' connective decisions to be merely a result of social practice (for example, by viewing connectivity management practices as a consequence of organizational expectations and norms). Rather, this research adopts sociomateriality to explore connectivity management practices in light of the interplay between both the social and the material.

Different theoretical positions exist within the sociomaterial framework. These include the perspective of "entanglement" proposed by Orlikowski (2007), the concept of

aspectuality suggested by Martine and Cooren (2016), and the metaphor of "imbrication" proposed by Leonardi (2011) and applied to this thesis. This section will next overview these concepts and justify the selection of the imbrication metaphor.

5.3.1 Entanglement

Orlikowski (2007) uses the term "entanglement" to challenge the view that the social and the material are separate entities whose interactions are influencing one another. Rather, she proposes that materiality is an integral part of organizational life, arguing that "there is no social that is not also material, and no material that is not also social" (ibid., p. 1437). The notion of entanglement suggests that organizational practices take place through the constitutive entanglement of both the social and the material (ibid.). This perspective does not assign agency to either the social or the material, and demonstrates that it is an enactment (Barad, 2003). It denotes that the social and the material are inseparable, and that everything is the result of their interplay (Barad, 2003; Orlikowski, 2007; Orlikowski and Scott, 2008). This view shifts the focus from the independent objects to the practices, i.e. actions or activities through which "the differential boundaries between "humans" and "nonhumans," "culture" and "nature," the "social" and the "scientific" are constituted" (Barad, 2003, p. 817).

The notion of entanglement is the original proposal for sociomateriality (Cecez-Kecmanovic *et al.*, 2014), based on which, the concept of sociomateriality has been criticized by several scholars (Leonardi and Rodriguez-Lluesma, 2012; Mutch, 2013; Martine and Cooren, 2016). For example, some argue that the concept of entanglement raises ontological issues. Specifically, it implies a contradiction of viewing the social and the material as inseparable while expressing them as separate entities within discourses and analysis (Leonardi and Rodriguez-Lluesma, 2012). For this research, therefore, connectivity management practices cannot be analytically captured as an entanglement of the social and the material. Others also confirm the inability of sociomaterial entanglement to be captured empirically (Martine and Cooren, 2016). This is because in the empirical world, scholars "still tend to separate out the social and the material analytically and discursively in our texts" (Cecez-Kecmanovic *et al.*, 2014, p. 820). Other conceptualizations of sociomateriality have been proposed to overcome the limitations of the original sociomaterial perspective, such the metaphors of aspectuality and imbrication. They confirm the significance of both the social and the material, but offer

different perspectives on the relationship between the two. These conceptualizations will be overviewed next.

5.3.2 Aspectuality

A more recent attempt towards the theorization of sociomateriality is the metaphor of aspectuality proposed by Martine and Cooren (2016). Like the concept of entanglement, aspectuality also argues for the inseparability of the social and the material. Martine and Cooren (ibid., p. 147) argue that entanglement "implies that there is something called "the social" and something called "the material" that are both entangled at the constitutive/ontological level". They propose the term aspectuality to overcome this criticism of the concept of entanglement. Aspectuality advocates that the social and the material are "two different and intractable aspects of everything that comes to exist and be" (Martine and Cooren, 2016, p. 147). However, in the quest to overcome the contradiction of the term entanglement (i.e. the theorization of the social and the material as inseparable with a textual implication of a separateness), aspectuality suggests a possibility for a focus on one aspect (either the social or the material). As Martine and Cooren (2016, p. 147) explained: "By focusing on the material aspect of something or someone, we highlight what sustains its existence". And as Martine and Cooren continued their discussion:

> "In contrast, focusing on the social aspect of something or someone means that we focus on the relations it/he/she is literally made of, that is, the relations that connect it/him/her with other beings" (ibid., p. 148).

The aim of this research is to explore connectivity management practices in light of different social and material elements. However, the concept of aspectuality views the social and the material as being ontologically inseparable, and suggests a focus on either social or material aspects of an entity. For this research, the concept of aspectuality would propose a discussion of social aspects of connectivity management practices while referring to the relationship that connects these practices to other beings, or on the material aspects while expressing other elements sustaining the existence of these practices (Martine and Cooren, 2016). Planning to bring either social or material aspects to the foreground is problematic for this research. This is because it can restrict an in-depth exploration of connectivity management practices in relation to both social and material elements. Focusing on either social or material aspects while viewing entities as

composed of both can also restrict our understanding of connectivity management practices, specifically when it comes to the role of human and material agencies in dictating these practices.

5.3.3 Imbrication

An alternative to the concepts of entanglement and aspectuality is the concept of imbrication. The verb imbricate derives from the names of ancient Roman and Greek roof tiles (Leonardi, 2011; Leonardi and Rodriguez-Lluesma, 2012). To imbricate means to arrange distinct elements in overlapping patterns so that they function interdependently (Leonardi, 2011). Imbrication recognizes the social and the material as distinct entities which overlap and form a chain of imbrications (ibid.). Leonardi (2012, p. 144) defines materiality as "the arrangement of a technological artefact's physical and/or digital materials into particular forms that endure across differences in place and time and are important to users". The social can represent decision making, strategy formulation, categorization (Leonardi, 2012), routines, conducts, and conversations (Martine and Cooren, 2016). Imbrication demonstrates that human and material agencies are not empirically important by themselves. Rather, they become empirically important when they are imbricated (i.e. when they become interlocked) (Leonardi, 2011). For example, technology becomes important when implemented in an organizational social context as users react to its materiality (Leonardi, 2012; Cecez-Kecmanovic *et al.*, 2014). As Leonardi explains:

> "The imbrication metaphor recognizes that humans have agency, and operationalizes human agency as people's ability to form and realize their goals. It also recognizes that technologies have agency, operationalizing material agency as technology's ability to act on its own" (Leonardi, 2011, p. 164).

The imbrication metaphor is advantageous for incorporating both human agency and material agency in explaining organizational practices (ibid.). Organizations and people practices exist, unfold and change through the imbrication of the social and the material over time (Leonardi, 2013). The notion of imbrication illustrates the accumulated effect of the interlocking of the social and the material. As Leonardi explains:

> "Imbrication of human and material agencies creates infrastructure in the form of routines and technologies that people use to carry out their work. Routine or technological infrastructure used at any given moment is the result of previous

> imbrications of human and material agencies. People draw on this infrastructure to construct a perception that a technology either constrains their ability to achieve their goals, or that the technology affords the possibility of achieving new goals" (Leonardi, 2011, p. 147)

For this research, the concept of imbrication can overcome the limitations of entanglement by maintaining a consistent analysis that recognizes the inherent separation between the social and the material. The concept of imbrication can also overcome the limitation of aspectuality by focusing on the interplay between the social and the material, rather than focusing on one aspect in relation to other elements (Leonardi, 2011; Leonardi and Rodriguez-Lluesma, 2012). The term socio-materiality (as opposed to sociomateriality) is used to illustrate the separation of the social and the material (see, for example, Zorina and Avison, 2011) and will also be used forward in the thesis when referring to socio-material imbrications. This is to illustrate the ontological separation of the social and the material. The term sociomateriality will be mentioned in the next chapter (Research Design) when referring to sociomateriality in a wider perspective that incorporates all sociomaterial conceptualizations.

Socio-materiality has been applied by many scholars to address a range of social and material elements. Socio-materiality has also been applied in light of different paradigms, such as through critical realism (Marabelli, Newell and Galliers, 2016; Stampe and Müller, 2018), or interpretivist paradigm (Zorina and Avison, 2011; Chai *et al.*, 2018).

Leonardi (2011) and Stampe and Müller (2018) apply socio-materiality in the context of organizational change. In his study, Leonardi (2011) introduces the metaphor of imbrication to demonstrate how the incorporation of both human and material agencies is useful for explaining organizational change. Leonardi draws on retrospective accounts given by participants to illustrate the changes of routines and technologies within a car manufacturer. He highlights that the imbrication of human and material agencies results in an infrastructure of routines and technologies that people use to carry out organizational work. This indicates that people draw on past experiences of this infrastructure to construct their perceptions of technology for organizational goals. They indicate that "perceptions of constraint lead people to change their technologies while perceptions of affordance lead people to change their routines". That is, when people are unable to achieve their goals via a specific technology, they change either the materiality of that technology or the organizational routines associated with it (Zorina and Avison, 2011).

A limitation of Leonardi's study is that it ignores details related to the decision making processes of individual participants in the quest for a conceptualization of the relationship between human and material agencies (Leonardi, 2011). Stampe and Müller (2018) address the imbrication of technology and work practices in organizations from a temporal perspective. They apply a critical realist perspective to investigate Google glasses as an embedded part of the work practices in Danish agriculture. They focus on how the past, present, and future drive organizations' technological investment. The study highlights the interdependency and mutual influence of technologies and work practices. They conclude that when assessing the value of a technological investment, human actors draw on past experiences, present situations, and future possibilities for technology use in support of work practices.

Zorina and Avison (2011) also apply socio-materiality for addressing organizational change, but take a different perspective by combining socio-materiality with the perspective of inter-organizational relationships. Specifically, they focus on the influence of external environmental and inter-organizational relationships on processes within organizations. They investigate how local area networks are influenced by their inter-organizational relationships with government and Internet service providers. They argue that the perception-based nature of technological and routine changes, as proposed by Leonardi (2011), is not applicable in all environments (Zorina and Avison, 2011). Zorina and Avison (2011) highlight the contextual and cultural influence in which the imbrication takes place, and suggest addressing socio-materiality within developing country contexts. Unlike previous studies focusing on organizational change, Marabelli, Newell and Galliers (2016) target individual users in a social media setting. However, their analysis and findings are thus focused on social media and the role of material agency, rather than the practices of individuals *per se*. They adopt a critical realist perspective to address the elements of time, space, and algorithms. Their study incorporates the concepts of imbrications and affordances to illustrate the agentic role of materiality in the online practices of social media users. They propose the notion of "network-mediated affordances" and explain it through an example of network connections attributed to how the material has been built by human agency, rather than being a feature of materiality *per se*.

This current research takes a different approach by applying socio-materiality to study individual practices enacted within organizations. For this study, the material stands for mobile technologies; specifically, physical and digital affordances of mobile devices and applications. This, for example, includes mobile phones, laptops, emails, and Instant Messaging (IM) applications. The social in this research includes policies, responsibilities, and norms.

5.4 Conclusions

This chapter reviewed different concepts theorizing the relationship between the social and the material. Socio-materiality is presented and justified as the theoretical framework underpinning this research through the concept of imbrication. The next chapter will elaborate on philosophical positions relevant to the selected framework. The research design developed for this research will be introduced and justified. The research design chapter will present the data collection and analysis process, and discuss reflexive and ethical considerations.

Chapter 6: **Research Design**

6.1 Introduction

Developing the appropriate research design is a critical step for conducting the research after clarifying the research questions, objectives, and theoretical framework. This chapter presents the research design adopted to achieve the research objectives, and proceeds from the general philosophies underpinning the research to the details of applied procedures. In this chapter, I discuss the ontological and epistemological assumptions, followed by the methodological approach and the research strategy. Next, I present the empirical context, and the data collection and analysis process. I end this chapter with an account for reflexivity and ethical considerations.

6.2 Research Philosophy

The starting point towards developing an appropriate research design is a presentation of the researcher's philosophical stance, i.e. the ontological and epistemological assumptions. The overall methodological choices have to be in line with the selected philosophical stance (Pring, 2000; Saunders, Lewis and Thornhill, 2016). In this section, I outline primary ontological and epistemological assumptions and justify my decisions.

6.2.1 *Ontology*

Ontology is centred on the philosophical question of what is reality. This section will review the two traditional ontologies: objectivism and subjectivism. It will then move to a discussion of sociomaterial ontologies, specifically the relational ontology and the substantialist ontology.

6.2.1.1 *Objectivism*

Until recently, scholars distinguished between two main types of views towards the truth, namely objectivism and subjectivism (Pring, 2000; Creswell, 2014; Saunders, Lewis and Thornhill, 2016). Objectivism holds that the social phenomenon exists in reality independently from the social actor (Pring, 2000; Saunders, Lewis and Thornhill, 2016). Objectivism views organizations as objective entities, attempting to discover a general law that governs practices, and predicts how these practices will take place in the future (Saunders, Lewis and Thornhill, 2016). This objective view of reality is not suitable for

this research because it neglects a key aspect on which this research is based, the significance of individuals' perspectives and the role of the surroundings in shaping reality. It is also inconsistent with the sociomaterial framework adopted in this research.

6.2.1.2 *Subjectivism*

The second school of thought is subjectivism, which holds that a phenomenon is influenced by the surrounding environment and is obtained through individuals' perceptions and views (Pring, 2000; Creswell, 2014; Saunders, Lewis and Thornhill, 2016). This implies that the truth may differ from one case to another due to the unique perceptions embedded within different contexts. Subjectivism asserts that reality is made from the perceptions and actions of people (Saunders, Lewis and Thornhill, 2016). This perspective neglects materiality, and has been challenged by many scholars (Barad, 2003; Latour, 2005; Orlikowski, 2007; Orlikowski and Scott, 2008; Leonardi, 2012), making subjectivism inconsistent with the framework of sociomateriality underpinning this study. Instead, two streams can better account for the interplay between the social and the material: relational ontology and substantialist ontology (Cecez-Kecmanovic *et al.*, 2014). Next, I present the two ontologies and justify my selection of the substantialist view.

6.2.1.3 *Relational ontology*

Relational ontology refers to the inseparability of the social and the material existing through the relationships. In other words, it denotes that there is no social, nor material, and that there is only sociomaterial in which the social and the material entangle and exist in relation to each other (Orlikowski, 2007; Cecez-Kecmanovic *et al.*, 2014). Relational ontology holds that "practices do not *exist*, in an important ontological sense, except in relation to the concrete and particular situations and cultures that give rise to them" (Slife, 2004, p. 158). This means that practices are a sociomaterial accomplishment of the entanglement of the social and the material. This relational ontology towards the conceptualization of sociomateriality is notable in the work of scholars such as Barad, Orlikowski, and Scott (Cecez-Kecmanovic *et al.*, 2014), (see, for example, Barad, 2003; Orlikowski, 2007; Orlikowski and Scott, 2008). For relational ontology, "things are not first self-contained entities and then interactive. Each thing, including each person, is first and always a nexus of relations" (Slife, 2004, p. 159). Relational ontology is referred to

as ‘strong relationality’ (ibid.). This view is not adopted in this research because it is inconsistent with the concept of imbrication applied in this research.

6.2.1.4 *Substantialist Ontology*

The substantialist view towards sociomateriality, as advocated by Leonardi (2011, 2012) asserts that technology exists independently of people. Substantialist ontology views social and material as entities that can develop meaning and mutually affect each other when they become imbricated in practice (Leonardi, 2012; Cecez-Kecmanovic *et al.*, 2014). It views practice as “The space in which multiple human (social) agencies and material agencies are imbricated” (Leonardi, 2012, p. 27). Substantialist ontology suggests that the material can offer different affordances depending on how and why people use it. It asserts that both the material and the social have their own inherent properties (Leonardi, 2012); it also acknowledges the relationship between the social and the material and refers to this as ‘imbrication’ (Leonardi, 2011; Leonardi and Rodriguez-Lluesma, 2012). This substantialist view towards sociomateriality proposed by Leonardi (2011) through the concept of imbrication should not be confused with relational ontology because it “offers a significantly different conception of sociomateriality based on substantivist assumptions” (Cecez-Kecmanovic *et al.*, 2014, p. 813). Substantialist ontology refutes the ontological inseparation of the social and the material (Leonardi, 2011; Cecez-Kecmanovic *et al.*, 2014). Instead, these relationships within the substantialist ontology can be seen as a “weak form of relationality because members of the interaction ‘act on’ each other from the outside” (Slife, 2004, p. 158). For this weak relational perspective, “persons, places, and things (as well as practices) begin and end as self-contained individualities” (ibid.).

All in all, both relational and substantial views of sociomateriality acknowledge the significance of the interplay between the social and the material (Leonardi and Rodriguez-Lluesma, 2012). They also recognize the significance of ‘practice’ (Orlikowski, 2007; Leonardi, 2012; Leonardi and Rodriguez-Lluesma, 2012). Table 6.1 below shows a primary comparison between ontological views toward sociomateriality.

Table 6. 1: Comparison of Sociomaterial Views

	Relational Ontology	Substantialist Ontology
View towards the social and the material	The social and the material are inherently inseparable and only exist in relation	The social and the material are discrete entities
View towards practice	Practices are a sociomaterial accomplishment that only exist from their interacting social and material components	Views practice as the space in which social and material agencies become imbricated. Organizational and social practices exist, unfold, and change in time
Examples of articles proposing/adopting the view	(Barad, 2003), (Cecez-Kecmanovic, Boell and Campbell, 2014), (Orlikowski and Scott, 2008)	(Leonardi, 2012), (Leonardi, 2011), (Leonardi and Rodriguez-Lluesma, 2012)

Source: (Barad, 2003; Leonardi, 2012, 2013; Cecez-Kecmanovic *et al.*, 2014)

Given these variations, and in line with adopting the notion of socio-material imbrications, the substantialist ontology is sought as a better fit for this research. Given this substantialist view of sociomateriality, the focus of this research is not on independent social or material agencies, but on the practices of connectivity management as an outcome of the imbrication of the social and the material.

6.2.2 Epistemology

Epistemology is associated with the way that a researcher comes to the truth and how new knowledge is generated (Saunders, Lewis and Thornhill, 2016). In general, scholars distinguish the following paradigms: interpretivism, positivism (Chua, 1986; Pring, 2000; Bryman, 2015; Bryman and Bell, 2015), critical realism (Leonardi, 2013; Creswell, 2014; Saunders, Lewis and Thornhill, 2016), and agential realism (Barad, 2003; Leonardi, 2013). This section will start by discussing positivism, critical realism, and agential realism. The interpretivism paradigm, applied in this study, will then be discussed and justified.

6.2.2.1 *Positivism*

Positivism asserts that truth exists independently of human perceptions. It argues for the objective nature of reality, asserting that investigation of phenomena should be free from researchers' subjective influence (Saunders, Lewis and Thornhill, 2016). The positivism

paradigm is often deductive, where the role of the researcher is to test theories or discover reality (Bryman and Bell, 2015). For this research, positivism is associated with many limitations. For example, this paradigm usually employs quantitative measures, such as surveys, in which questions and data would be framed by a set of practices evident in prior connectivity management research. This can hinder the exploration of connectivity management practices, which are evolving rapidly (Dery, Kolb and Maccormick, 2014). A positivist paradigm can also ignore the social and contextual factors surrounding a practice, resulting in incomplete conclusions. As Orlikowski and Baroudi state:

> "Information technology in organizations, in particular, is intrinsically embedded in social-contexts marked by time, locale, politics and culture. Neglecting these influences may reveal an incomplete picture of IS [Information Systems] phenomena" (Orlikowski and Baroudi, 1991, p. 12).

A positivism paradigm is therefore not compatible with the sociomaterial perspective, making it unsuitable for exploring how connectivity management practices are shaped by the interplay between the social and the material.

6.2.2.2 *Critical Realism*

Critical realism views reality as external to knowledge. It challenges the *status quo* by stating that a mind-independent reality exists, but cannot be captured in full (Chua, 1986; Saunders, Lewis and Thornhill, 2016). Critical realism focuses on the structure to refer to the complexity of objects and the structure that lies beneath the surface of an object. It looks at the underlying causes and mechanisms for providing an explanation for what is seen and experienced in the world (Saunders, Lewis and Thornhill, 2016). Critical realism can serve as a foundation for sociomateriality studies (Leonardi, 2011; Mutch, 2013). This paradigm usually takes the form of an historical analysis of organizational and social structures (Saunders, Lewis and Thornhill, 2016). It incorporates the element of time to answer how sociomaterial practices emerge and persist over time (Leonardi, 2013). However, this thesis explores connectivity management practices as the outcome of the interplay of the social and the material, and beyond a focus on time. Critical realism has also been criticized for the uncertain knowledge it generates (Chua, 1986). It can also amplify philosophical discussion in research, making it less practically applicable (Leonardi, 2013).

6.2.2.3 *Agential Realism*

Agential realism, proposed by Barad (2003), is a common paradigm in sociomaterial studies, particularly in association with the concept of entanglement (Cecez-Kecmanovic *et al.*, 2014). Agential realism perceives knowledge to be "not only tied to but inextricably bound with the technologies we use to observe it" (Leonardi, 2013, p. 62). As Barad explains:

> "On my agential realist elaboration, phenomena do not merely mark the epistemological inseparability of "observer" and "observed"; rather, phenomena are the ontological inseparability of agentially intra-acting "components"" (Barad, 2003, p. 815).

Agential realism is compatible with the relational, rather than the substantialist ontology. This paradigm denies the separation between the social and the material. It advocates that "there is no social that is not also material, and no material that is not also social" (Orlikowski, 2007, p. 1437). Agential realism has been criticized for its inability to demonstrate this sociomateriality in empirical studies (Leonardi, 2013). It was not applied in this research because of its inconsistency with neither the theoretical concept of imbrication, nor the ontological assumption adopted in this research.

6.2.2.4 *Interpretivism*

The interpretivism paradigm selected for this research, asserts that different people, from different backgrounds, under different circumstances, and at different times can experience different realities (Saunders, Lewis and Thornhill, 2016). The purpose of interpretivism is to create richer understandings and interpretations of the world (ibid.). It advocates that new knowledge is produced subjectively, where the researcher plays an internal role in order to understand the different views. In this paradigm, interactions with people are essential tools for in-depth understanding. To achieve the research objectives, and in line with the framework of socio-materiality, I argue that the interpretivism paradigm is suitable for furthering understanding of connectivity management practices.

Interpretivism is appropriate as it allows acquiring insights about the practices of individuals with consideration for the context (ibid.). Through interactions with individuals, an interpretivism paradigm can also enable the researcher to reach a deep meaning and better understanding of practices. This is especially helpful given that the notion of connectivity management is a relatively new shift in talking about the rapidly evolving practices of mobile technologies (Kolb, 2008; Dery, Kolb and Maccormick,

2014). Such direct interactions could thus provide further information and enable participants to share their stories and perceptions openly, ultimately facilitating the achievement of the research objective.

The interpretivism paradigm critiques the perspective of one objective reality held by positivism and critical realism (Saunders, Lewis and Thornhill, 2016). It also opposes the agential realism perspective of social and material inseparability. The interpretivism paradigm emphasizes that the social is different from the material (Coulthard and Keller, 2011; Saunders, Lewis and Thornhill, 2016). In viewing the social and the material as different entities, interpretivism also recognizes the elements of relationships (Coulthard and Keller, 2011), making it compatible with the substantialist view adopted in this research. According to Coulthard and Keller (2011, p. 5), "a relational view does provide a better perspective on our everyday experience and one in which interpretivism in its identification of human understandings can prosper".

6.3 Methodological Approach

After identifying the framework, philosophical foundations, an important decision to make is the methodological approach. Research methodology is a systematic and practical process to carry out the research. The methodology needs to be decided based on the objectives of the research, while being consistent with the theoretical framework and the philosophical assumption held by the researcher. This section will review research types and explain the classification of this research as exploratory. This section will then presents the two main methods distinguished by scholars: qualitative and quantitative research approaches (Creswell, 2014; Bryman and Bell, 2015; Saunders, Lewis and Thornhill, 2016), and justifies the selection of the former.

6.3.1 Research Type

There are three main research types referred to by researchers: descriptive, explanatory and exploratory research (Bryman and Bell, 2015; Hair Jr *et al.*, 2015; Saunders, Lewis and Thornhill, 2016). A key consideration when selecting the research type is the research question to be addressed. A researcher should choose the type that provides the right information for answering the research question (Hair Jr *et al.*, 2015). This research aims to further our understanding of connectivity management practices. Scholars have identified that descriptive research is mostly used in order to describe a social

phenomenon and describe its characteristics (ibid.). This type of research may be suitable for research questions related to demographic comparisons or for describing behaviour. For example, it might be applicable if the research aim was about the nature and/or frequency of work communications via mobile technologies outside the working hours, which is not the intended objective of this current research. On the other hand, explanatory research is designed to fit the investigation that focuses on studying relationships among several variables (Hair Jr *et al.*, 2015; Saunders, Lewis and Thornhill, 2016). Therefore, this type of research work is used for questions that aim to test a theory or to explain the relationship between X and Y. Explanatory research could be useful for explaining some cause and effect relationship between work connectivity and other variables such as job performance or job satisfaction.

The third type is exploratory research. Exploratory research is significant in cases where there is little known and limited information about the topic. Hence, this type of research seems to be the most appropriate for this research that considers connectivity management practices, an area that many scholars have called for further in-depth understanding (Mazmanian, 2013, 2013; Dery, Kolb and Maccormick, 2014). The less that is known about a topic, the more likely exploratory research will be a fruitful strategy (Bryman and Bell, 2015). The suitability of exploratory research for providing in-depth information is supported by many scholars. Hair Jr *et al.* (2015) argue that this type of research design is usually used by researchers when not much is known about the phenomena and further in-depth investigation is needed. Similarly, Saunders, Lewis and Thornhill (2016) explain that exploratory research focuses on the study of a phenomenon about which there are insufficient studies and provide comprehensive information about it. In other words, exploratory research is the appropriate design to carry out this investigation, as the research aims to explore connectivity management practices that have not received sufficient scholarly attention. In terms of the thesis outcome, exploratory research is flexible, meaning that information gathered during the data collection and analysis phase may result in revisiting the focus of the research. This might involve further literature search or rewriting the research questions in an attempt to gain better insights and provide most valuable contributions regarding the researched topic.

6.3.2 Research Approach

There are two main research methods distinguished by scholars: qualitative and quantitative research approaches (Creswell, 2014; Bryman and Bell, 2015; Saunders, Lewis and Thornhill, 2016). Qualitative and quantitative research have their own approach and procedure in term of data gathering and analysis (Saunders, Lewis and Thornhill, 2016). The choice between them depends to a large extent on the philosophical foundation of the research and the type of information needed to answer the research questions (ibid.). It is worth mentioning that some add a mixed method that involves both qualitative and quantitative characteristics (ibid.). Qualitative research depends on collecting the relevant information in qualitative form involving words (Creswell, 2014). These types of data are usually in textual rather than numerical form, and therefore, this method relies on the interpretative (coding themes) approach to analyse the information, rather than the statistical approach (Hair Jr *et al.*, 2015). Qualitative research often uses data collection methods that can produce descriptive and verbal information about the research problem. For the purpose of the research under study, this method enables the researcher to understand connectivity management practices in depth by collecting rich and detailed information that cannot be obtained through quantitative methods. This is because the investigation of connectivity management practices involves perceptions and views that may not be expressed efficiently and clearly by using statistical methods. Kolb explains:

> "Individuals are perfectly capable at reporting how they 'feel' about the amount of media and meetings they have to deal with, but they are pretty bad (we all are) at estimating how much connectivity, i.e. the number of emails, text messages and social media messages, they actually were receiving" (Kolb, 2015, p. 9).

A quantitative method, on the other side, depends on collecting information quantitatively (Creswell, 2014; Saunders, Lewis and Thornhill, 2016). Generating knowledge in quantitative research is often linked to the collection of numerical information through measurements such as surveys. Quantitative method could be appropriate for studies that attempt to test the relationship between variables and theory (Saunders, Lewis and Thornhill, 2016).

Therefore, while the quantitative approach has been used in connectivity research (Collins and Kolb, 2012), perceptions and practices of connectivity are found to be difficult to

capture quantitatively (Kolb, 2015). Giving attention to individuals' perspectives is important when studying connectivity (ibid.). The qualitative approach can focus attention on the unique views and practices of individuals, resulting in rich data and facilitating the achievement of the research objectives. Unlike quantitative method, qualitative research is concerned with understanding human processes and generating explanations of social practices (Kvale, 1996). The qualitative approach allows the researcher to capture perceptions and practices within individuals' social settings. Processes used in this methodology in the data collection, for example, provide detailed information from participants by interacting with them personally, such as through interviews and dialogues. This allows participants to discuss their practices and express their opinions and perceptions more freely.

6.3.3 Research Strategy

Research strategies include experiments, surveys, action research, and case studies, among others. It is important to consider the research objectives when deciding on an optimal research strategy (Yin, 2013; Saunders, Lewis and Thornhill, 2016). For example, an experiment approaches a phenomenon while separating it from its context, while surveys deal with phenomenon and context but offer limited ability to investigate the context (Yin, 2013). Cases can include individuals, institutions, or events (ibid.). A case study "tries to illuminate a decision or set of decisions: why they were taken, how they were taken, how they were implemented, and with what result" (Schramm, 1971). The case study strategy depends on an exploration of a phenomenon within a specific unit or group in its natural context (Yin, 2013; Saunders, Lewis and Thornhill, 2016). For this research, a case study research strategy is deemed advantageous for many reasons.

It allows evidence to be collected from multiple sources (Rowley, 2002). Data collection sources include documents, interviews, or observations (Schramm, 1971; Rowley, 2002; Yin, 2013). A case study investigates practices in-depth, taking into account the context in which they are enacted (Yin, 2013). Thus, case study strategy "can afford to consider a large number of details, so as to consider their possible relation to a decision or a pattern of events" (Schramm, 1971, p. 3).

A case study can therefore enable an in-depth investigation and rich understanding of the unit of analysis (Schramm, 1971; Cavaye, 1996; Yin, 2013). The unit of analysis

represents what is being studied in a case, and for this research it is connectivity management practices. The notion of an in-depth understanding of practices within their context is needed in studies on sociomateriality (Seidel and Berente, 2013; Hultin and Mähring, 2014), and has also been called for by many studies on connectivity management (Mazmanian, 2013; Robey and Cousins, 2015). Case study strategy has multiple types, including single case holistic design, single case embedded design, multiple case holistic design, and multiple case embedded design (Yin, 2013).

One decision to make when selecting the type of case study design is between holistic and embedded approaches. In holistic case study design, a case has only one unit of analysis, while in embedded design, the same case can involve more than one unit of analysis at different levels. Holistic design is best used when no logical subunits can be identified. However, adopting a holistic design in a single case can result in an abstract-level of analysis that lacks clarity (Yin, 2013). On the other side, an embedded case-study design can divert the focus from the main case of inquiry, as Yin wrote:

> "The subunits can often add significant opportunities for extensive analysis, enhancing the insights into the single case. However, if too much attention is given to these subunits, and if the larger, holistic aspects of the case begin to be ignored, the case study itself will have shifted its orientation and changed its nature" (ibid., p. 56).

Compared to the holistic design, embedded case-study design can risk shifting the focus away from the main case to the main unit of analysis. As this research seeks a focused in-depth understanding of connectivity management practices, a holistic approach is appropriate.

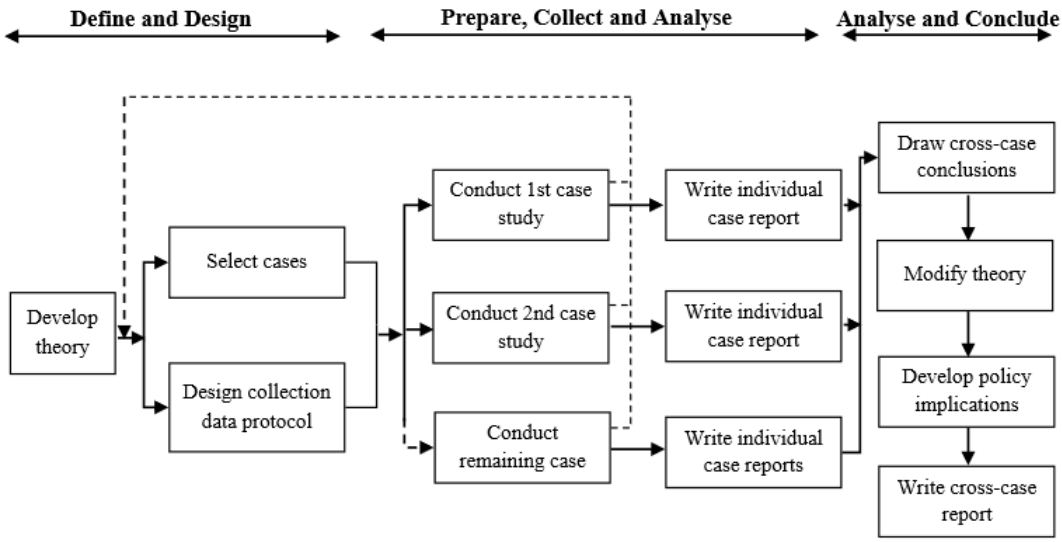
Another decision to make in regard to the case study design is between single and multiple case design. On one hand, single case study design can be appropriate for critical, common, unusual, revelatory, or longitudinal cases. Many studies on connectivity management have adopted single case study designs, such as for longitudinal (Dery, Kolb and Maccormick, 2014) and unusual cases (Mazmanian, 2013). On the other hand, and for connectivity management research, a multiple case study design is not as common as single case study design. In multiple case study design, cases are selected to predict similar results (literal replication), or to predict contrasting results but for predictable reasons (Rowley, 2002; Yin, 2013). Multiple case study design is disadvantageous for being more time and resource consuming than single case studies, and can be beyond the

means of a single independent researcher (Yin, 2013). Nevertheless, a multiple case study is advantageous for the robust information it generates, and it is thus preferable over the single case study design (Rowley, 2002; Yin, 2013). As Yin wrote:

> "Even with two cases, you have the possibility of direct replication. Analytic conclusions independently arising from two cases, as with two experiments, will be more powerful than those coming from a single case (or single experiment) alone" (Yin, 2013, p. 64).

Single case studies are criticized for the uniqueness of social conditions surrounding the case. Thus, having two cases can overcome this limitation (Yin, 2013). In exploring connectivity management practices, this research will be guided by a holistic multiple case design, focusing on the practices of connectivity management as the unit of analysis. Figure 6.1 presents the procedure for conducting a multiple case study design. The first stages include the definition of the cases, the second stage involves data collection and analysis, and the final stage includes synthesizing and concluding with a cross-case report.

Figure 6. 1: Multiple Case-study Strategy



Source: (Yin, 2013)

Based on the above discussion, this research will employ two cases to generate an in-depth understanding of connectivity management practices. The cases should be carefully selected so that they produce literal replication (have similar results), or produce

theoretical replication (have different results for predictable reasons) (Rowley, 2002). Yin explains:

> "You may have deliberately selected your two cases because they offered contrasting situations, and you were not seeking direct replication. In this design if the subsequent findings support the hypothesized contrast, the results represents a strong start toward theoretical replication-again strengthening your findings compared to those from a single case study alone" (Yin, 2013, p. 64).

For this research, selecting two cases with contrasting contextual settings is a robust start towards theoretical replication. The two cases in this research have a similar profession, academics. These cases were selected based on the fact that they operate under different settings. The empirical context, including details of the two cases, will be outlined next.

6.4 Empirical Context

While connectivity is experienced by professionals in various countries, this research explores the connectivity management practices of academics within two academic institutions in Saudi Arabia, referred to as *Springfield University* and *Hudson College* (pseudonyms). The two institutions were selected for the similarities and variations between them. While academics at the selected research sites share similar job responsibilities, the selected institutions operate under different institutional conditions, representing two extremes in terms of age, size, and working hours' arrangements. From their comparison, we expect to gain a deeper understanding of connectivity management practices. The next section will give an overview of the decision behind the selection of the Saudi academic context for exploring professionals' connectivity management practices. This is followed by a brief presentation of the two cases.

Saudi Arabia is the largest market for telecommunications in the Middle East (*Euromonitor International - Analysis*, 2010). This context was selected for many reasons. First, this is due to the recent escalation of Internet use in the country. For Saudis, anytime/anywhere connection is a relatively new trend. Approximately a decade ago, privately owned telecomms companies were permitted to enter the previously monopolized market. This provided Saudis with more economical options for Internet connection and wider access to distant individuals over mobile technologies (Alwagat, 2013). The escalated utilization of technology within the country has been highlighted by

several analyses. For example, according to the United Nations Conference on Trade and Development, the proportion of mobile phone users within the country is the largest worldwide (Alsenaidy and Ahmad, 2012; Vallabhan, 2012). Saudi Arabia is identified as the most oversaturated market of cellular connections in the Middle East (Euromonitor International Analysis, 2012). According to the Saudi Communications and Information Technology Commission, the rate of smartphone penetration in Saudi Arabia is almost double the international average (*Arab News*, 2017).

Second, despite evidence on the implication of technology on work-life boundaries (see, for example, Currie and Eveline, 2011; Butts, Becker and Boswell, 2015), the implications of such escalated adoption on the management of work-life boundaries within the country have not received much attention from either scholars or the government itself. Some scholars discuss the implications of poor work-life balance for employees in Saudi Arabia (see, for example, Almalki, FitzGerald and Clark, 2012; *Bayt*, 2012; Al-Asfour *et al.*, 2017). However, while they give insights into the problematic management of work-life boundaries in the country, they do not consider the role of technology in the dilemma. Further, several countries have undertaken initiatives to facilitate the work-life balance of their employees. For example:

- the nationwide 'right to disconnect' law in France (Rubin, 2017);
- the work-life balance campaign by the South Korean Government (*BBC News*, 2016);
- the German law forbidding managers from contacting employees on holiday (Stuart, 2014); and
- 'The work-life balance survey' for employees of the United Kingdom (Department for Business, Innovation and Skills, 2012).

However, like many developing countries, such efforts and their consequent regulations remains missing in Saudi Arabia. A systematic review of work-life literature emphasizes that research capturing views of work-life conflict from the perspective of developing countries is needed (Kengatharan, 2015).

Third, while mobile technologies are used across various sectors, academics' use of it is especially encouraged. Academics in Saudi Arabia are encouraged, more than ever before, to utilize their mobile technologies to achieve the outcomes envisaged from their

field. This is especially after the country has declared a shift from an oil-based to a knowledge-based economy, in which technology plays a critical role. According to the Saudi Ministry of Economy and Planning, a knowledge-based economy is defined as:

> "An economy that is capable of knowledge production, dissemination and use; where knowledge is a key factor in growth, wealth creation and employment, and where human capital is the driver of creativity, innovation and generation of new ideas, with reliance on information and communication technology (ICT) as an enabler" (Ministry of Economy and Planning, 2017).

This new shift in the country's economy comes with a strong focus on the role of technology in the creation and spreading of knowledge (Ministry of Economy and Planning, 2017). In line with Saudi Arabia's focus, approximately 22.5% of the country's budget is allocated to education; this is by far the highest proportion of the country's annual budget (Ministry of Finance, 2017). Given the substantial budget allocated to this sector, as well as the crucial role it is expected to play in the country's new knowledge-based economy, the academic profession is, without question a key pillar in the country's economy.

Fourth, many scholars argue that professionals' management of connectivity is worthy of investigation (see, for example, Prasopoulou, Pouloudi and Panteli, 2006; Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014). Even though mobile technologies are used across various occupational groups, a systematic review over a 15-year span indicates that implications of mobile technology for academics is more intense than average (Dén-Nagy, 2014). Specifically, academic professionals have traditionally benefited from flexibility, increased levels of control and autonomy as they are viewed as their own supervisors (Heijstra and Rafnsdottir, 2010; Baruch, 2013). However, technology may have primarily increased academics' pre-existent flexibility further, intensified workload, and allowed for work to further intrude into family time (Currie and Eveline, 2011).

Unlike many professionals, academics have a communication network with wide groups from work including communications with academic colleagues, administrative staff, and students (Almaghlouth, 2015; Chawinga, 2016). For academics, work is often accomplished after leaving work, at evenings, or during the weekends (O'Laughlin and Bischoff, 2005). This is because academics are expected to teach, research, and provide different services, which, except for physical presence at classrooms, can mostly be done

outside the walls of universities (Baruch, 2013). Another unique characteristic of the academic job is not only being accountable to the immediate university at which an academic is employed, but to the wider academic community as well (Baruch and Hall, 2004). The endless requirement of publications is facilitated by the flexible nature of the academic job (Beigi, Shirmohammadi and Stewart, 2018). Flexibility mediated by Internet-enabled devices increases the challenge for academics to disengage from work obligations while outside working hours (Heijstra and Rafnsdottir, 2010).

Fifth, another reason for addressing this sector is the work nature for academics. Specifically, responsibilities of academics are well defined across various locations, consisting of teaching, research, and community services (Baruch, 2013). Therefore, focusing on academics can eliminate any discrepancies in connectivity management which may be attributed to the variation between the type of profession or the nature of responsibilities, rather than to aspects of the organizational context (Lowry and Moskos, 2005; Russell, O'Connell and McGinnity, 2009). Also, as different academic institutions offer different organizational settings (e.g., opportunities for flexible work), addressing academics for this comparative study would offer insights about how such institutional work conditions affect professionals' connective decisions. In addition, academics are part of multi-level connections, including connections with administrative staff and students, as well as academics both inside and outside their workplace. This makes them an ideal group for exploring connectivity management. Based on a critical evaluation of work-life literature published over 15 years, academics prove to be a sensible group for research as the effect of mobile technology on their life is intense (Dén-Nagy, 2014).

Last, but not least, addressing academics in Saudi Arabia was also motivated by the facilitated access to resources. As I belong to this context, this offered me more feasible access to participants. This is due to the social connections I have with different academic institutions. This is also because of the cooperation expected from academic institutions and participants. Due to the awareness and acknowledgement of academic faculty and staff regarding the importance of scientific research, they were deemed to be more likely to engage in the research. Hence, this is anticipated to have facilitated access to participants for the realization of a fruitful research outcome. The selected academic institutions are overviewed next (this will be further elaborated in Sections 7.2 and 8.2.).

6.4.1 Case A - Springfield

Springfield is among the oldest and highest-ranked universities in the nation. The university offers a variety of degrees, including pre-graduate, undergraduate, and postgraduate. The university also offers research centres, and e-Learning and distance education. In total, Springfield has over 40 departments. Academics at Springfield have a flexible work arrangement, in which physical presence at campus is not mandatory for most research responsibilities. According to QS ranking, the research intensity of the university is considered to be high (*QS Top Universities*, 2017). The number of academic faculty in the university is more than 2,000, and the number of students is about 40,000.

6.4.2 Case B - Hudson

Hudson is among the recently established academic institutions. It has fewer than 10 departments, offering a variety of bachelor degrees. Hudson mandated a fixed eight hour working day to all of its employees. According to QS ranking, the research intensity of Hudson is considered to be low (*QS Top Universities*, 2017). In total, the number of academic faculty in Hudson is approximately 250, whereas the number of students is about 2,800. Table 6.2 below summarizes the contextual setting for the research sites.

Table 6. 2: Cross-case Comparison of Research Sites

	Springfield University	Hudson College
Orientation	86 academic programmes for a variety of degrees	Narrow: nine academic programmes, all being for undergraduate degrees
Size	Approximately 2,000 faculty members, and 40,000 students	Approximately 250 academic faculty, and 2,800 students
Temporal arrangements	Flexible working hours (apart from when teaching, physical presence on campus is usually not required)	8 hour working day regime (physical presence during the working day is mostly required)
Spatial arrangement	Approximately 65 departments, spread over 15 colleges.	7 departments in 2 colleges
Founded	Mid 20th century	Less than two decades ago

Source: Information available at institutional websites and documents.

6.5 Data Collection Methods

Two data collection methods have been used: semi-structured interviews and document analysis. The use of multiple data collection methods is useful for developing a comprehensive understanding of connectivity management practices, and is in line with the research strategy adopted in this research (Yin, 2013). The rationale for the selected methods is presented next.

6.5.1 Interviews

One key source of qualitative evidence is interviews (Cavaye, 1996). These can provide insightful data about the phenomenon under investigation (Yin, 2013). This research is an exploratory research seeking to explore connectivity management practices. The use of interviews is deemed suitable for this research because "the nature of connectivity lies in the eye of the beholder" (Kolb, Caza and Collins, 2012, p. 270). Interviews provide in-depth information regarding participants' practices and perceptions. In fact, it has been empirically proven that the implication of technology for individuals' boundary management is partially attributed to their perception regarding the use of technology for after-hours work communication (Wright *et al.*, 2014). Therefore, the objectives of the research is accomplished through exploring perspectives of participants. Various types of interviews may be applicable for collecting data for this purpose, including focus groups, as well as one-to-one unstructured or semi-structured interviews (Saunders, Lewis and Thornhill, 2016). The following section provides an overview of the differences between these types of interviews, on which justification for using semi-structured interviews is based.

6.5.1.1 *Semi-structured interviews*

This section will focus on the justification for using semi-structured interviews and describe why they are advantageous over other forms of interviews. This will be accomplished by analysing semi-structured interviews with other interview types. It is worth mentioning that while unstructured interviews and focus groups will be discussed, structured interviews are not going to be taken into consideration in the review because they are purely standardized and do not serve the purpose of an exploratory research (ibid.).

On one hand, unstructured one-to-one interviews are a type of interview that is used for in-depth exploration of a general area. Unlike semi-structured interviews, where the researcher has a list of themes and main questions to be covered, altered, deleted or added as each interview progresses, in unstructured interviews there is no list of questions to be asked during the interview (ibid.). In practice, knowing the differences between these forms is useful to identify the interview type that is most appropriate to the research context. Although both semi-structured interviews and unstructured interviews are useful for providing contextual information for exploratory studies (ibid.), these two types of interviews do differ in some aspects, such as degree of flexibility, formality, and typical time per interview.

One key aspect of semi-structured interviews is that different and varied information can be obtained by interviewing participants regarding a certain issue. This is most likely due to the flexibility offered by semi-structured interviews. Semi-structured interviews allow the researcher to rearrange, add, or skip questions based on the responses of each participant. Therefore, each semi-structured interview is unique in reflecting participants' points of view. It is worth mentioning that unstructured interviews do offer flexibility in terms of information discussed. However, unlike semi-structured interviews, unstructured interviews are informal with no list of key questions, nor do they have comments to give some direction to the interview. Consequently, individuals would express their opinions freely and openly (ibid.).

In practice this means that conversations could take a great number of directions and may not yield information specific enough to explore the actual topic of the research. Therefore, while unstructured interviews are used to explore a certain area in general, such as exploring life histories or philosophical beliefs (Simon, 2006), they may not be appropriate for exploring personal perspectives regarding a specific topic. In addition, due to the enormous flexibility offered by unstructured interviews and the limitlessness of the number of possible responses, it may not be suitable for conducting PhD research with time, or financial constraints. More significantly, it is expected that the researcher well respects the time the interviewee has devoted for participation in the research. That said, while the time-frame for each semi-structured interview is most commonly about an hour, unstructured interviews may last significantly longer (ibid.). Prolonged interviews may also reduce participants' willingness to take part in the study due to their limited time (Saunders, Lewis and Thornhill, 2016).

Focus groups are another type of interview that focus on a particular issue or topic, where participants are encouraged to direct the discussion and share their perceptions in an open environment (ibid.). Focus groups are associated with both benefits and limitations (Bloor, 2001). This type of interview is useful for revealing pre-held views regarding a particular topic, as well as for analysing how group dynamics aid the construction of shared perceptions (Saunders, Lewis and Thornhill, 2016). It is possible to interview a larger number of participants, compared to one-to-one interviews. In addition, the discussions among participants can yield very interesting narratives and information about the topic. However, unlike one-to-one interviews, focus group interviews might be dominated by a certain group who inhibit others from expressing their points of view (Bloor, 2001; Saunders, Lewis and Thornhill, 2016). Therefore, this instrument may lack the generation of important information needed for the phenomena under research. Moreover, in focus groups, some views might emerge in focus groups and gain group consensus, even though many participants may not actually agree with these views (Saunders, Lewis and Thornhill, 2016). Focus groups are rarely used as the main instrument in social research (Bloor, 2001).

For this research, semi-structured interviews are appropriate for many reasons. First, this type of interview allows one-to-one discussion regarding a topic, where the pressure of other participants is absent and perceptions are expressed more openly. In addition, given the set of flexible questions predetermined in semi-structured interviews, this instrument facilitates conducting the interview with reasonable flexibility and time. A key aspect of semi-structured interviews is that different and varied information can be obtained by interviewed participants regarding a certain issue. This is most likely due to the flexibility offered by semi-structured interviews. While unstructured interviews do also offer flexibility in terms of information discussed, conversations may take a number of directions and may not yield information specific enough to explore the actual topic of the research. In addition, semi-structured interviews can be useful for many situations, including understanding differences between people's preferences and their behaviours (Simon, 2006). In practice, this means that semi-structured interviews are ideal for exploring professionals' connectivity management practices, for allowing professionals to express their views and stories, as well as for understanding parameters shaping their practices.

6.5.1.2 *Participants' Selection*

This research utilized a combination of purposive and convenience sampling techniques. Purposive sampling allows the selection of participants who will best inform the research questions. Convenience sampling allows the selection of participants who are accessible (Saunders, Lewis and Thornhill, 2016). Participants from the two sites were invited to take part based on their profession (e.g., academics as opposed to students or administrative staff). Specifically, this involved academics from various departments and colleges within the two sites, in addition to Human Resources (HR) practitioners. Interviews were then conducted with those who were available and willing to participate.

In qualitative research, there are no specific rules towards determining a specific number of interviewees prior to pursuing data collection. Mason (2010) indicates that analysing a large sample of qualitative interviews can be time-consuming as well as impractical. He conducted a study to explore the sample size of qualitative interviews in PhD studies. He shows that 40 interviews are the most frequent sample size utilized by qualitative research. Meanwhile, a systematic analysis carried out by Guest, Bunce and Johnson (2006) states that in qualitative research, foundational elements of the themes can be realized after the sixth interview. According to Ritchie *et al.* (2013, p. 118), the sample size in qualitative research often "lie at under 50". Interviewing more than 50 people could compromise the quality of both data collection and analysis (ibid.). That being said, the sample size in this research is based on the concept of saturation. The concept of saturation is often utilized to determine the sample size in purposive sampling (Guest, Bunce and Johnson, 2006). It facilitates the identification of the appropriate sample size as it indicates the point at which more interviews do not contribute further information regarding the topic under investigation (Guest, Bunce and Johnson, 2006; Mason, 2010). For each of the selected sites, data were collected across three categories, as follows:

Academic Faculty

Academics in Saudi Universities hold a variety of positions, including teacher-assistant, lecturer, assistant professor, associate professor, and full professor. Teacher-assistants are academic staff who have a Bachelor degree, lecturers have a Masters' degree, while assistant professors are holders of a PhD degree. Promotions from the title of assistant professor to the title of associate professor require four years of research following the acquisition of their current title. This also holds true for promotions from associate

professor to full professor. Academic faculty in most Saudi academic institutions are expected to engage in teaching, research, and public service. The actual activities of the academic faculty are determined by their interests and abilities (Smith and Abouammoh, 2013).

Departmental Heads

Interviews have been conducted with departmental heads to understand their connectivity management practices. Similar to academic faculty, departmental heads undertake the responsibilities of teaching and research; however, they are also assigned to other administrative responsibilities. The position of departmental head involves a supervisory role of overseeing and evaluating academic faculty within the department. While departmental heads are involved in teaching responsibilities, their teaching load is less than the rest of the academic faculty within the department. Interviewing departmental heads was expected to enable an understanding of any variations in views or perspectives between departmental heads and their subordinate academics.

HR Practitioners

In pursuit of a robust understanding of the organizational policies and regulations, HR practitioners were approached. Given the lack of macro-level guidelines regarding work communications outside working hours, HR practitioners are expected to provide information regarding such policies that are specific to each institution. This facilitates a deeper understanding of the topic under research, and is useful for acquiring up-to-date information that may not have been included in policy documents.

6.5.1.3 *Conducting Interviews*

Data collection was conducted on a multi-level, involving faculty members, departmental heads, and HR practitioners. A total of 39 academics were interviewed from different colleges and at various positions. In addition to academics, two HR practitioners were interviewed in order to maximize the knowledge of each research context. Prior to the actual data collection, a pilot study was conducted with a total of six of the academic participants from both sites. A manual analysis was then conducted to identify initial themes and to validate the effectiveness of the interview questions in answering the research questions. Based on these interviews, further interviews were conducted, with a total of 17 participants from Springfield, and 24 participants from Hudson.

Table 6.3 below outlines the positions of participants of this study. More detailed information about the participants (e.g. nationality, gender, number of dependents) is presented in Appendix E.

Table 6. 3: Positions of Participants

Position	Springfield University	Hudson College	Total number of participants
Teacher Assistants	2	1	3
Lecturers	5	12	17
Assistant Professors	5	6	12
Associate Professors	2	-	2
Full Professors	1	-	1
Department Head	1	4	5
HR practitioners	1	1	2
Total	17	24	41

Interviewees were invited by email to voluntarily participate in interviews taking place in a mutually agreed on time and place. An information sheet (presented in Appendix C) was attached to the invitation email; this allowed the participants to read it, think about it, and respond at their own pace. Forwarding interview requests over email also allowed me wide access to academics. Academics from multiple departments and colleges within the two selected universities were invited. In total, the 39 participants came from 14 departments within 9 colleges.

Participants were given the option to participate either in English or Arabic. In total, 26 interviews were conducted in English, while 15 interviews were in Arabic. Having the option for Arabic interviews encouraged the participation of individuals who may not be confident about their fluency in English. While the translation process from Arabic to English might be associated with a loss of accurate meaning, presenting Arabic as an option allowed benefits that exceeded the costs. Specifically, participants were able to share their practices and perceptions in the language in which they can better express themselves, consequently resulting in richer data. During the interviews, notes were taken of the key points discussed by participants. Two different interview guides were used, one for academics, including faculty members and departmental heads (which contained questions designed to answer the research questions), and another was for HR

practitioners, designed to facilitate an understanding of current policies at the contexts under research.

The interviews with academic faculty and departmental heads were based on concepts drawn from connectivity literature, while incorporating additional questions to facilitate achieving the objectives of this exploratory research. The research question “How do academics manage work connectivity in the presence of mobile technologies?” focuses on work connectivity outside working hours, and explores professionals’ connectivity management practices with an account to the affordances of technology. The research question “What parameters shape connectivity management practices?” focuses on social and material parameters that shape connectivity management practices.

The interviews were divided into three sections. The first section was mutual open communications where I gained background information about the participant, such as their years of service, their responsibilities, and their social status. This was to break the ice with participants, initiate the conversation, and allow easy transitioning to the second section. The second section focused on engaging in discussion to achieve the research objectives. Particularly, many questions were in the form of “Tell me about…”. For example: tell me how technology connects you to work outside working hours. This was not only expected to encourage participants to share their stories, but also served the purpose of an exploratory research as it may have opened the door for important information that I never thought to ask about. Finally, interviewees were thanked and informed how the research would proceed after the interview. Also, permission for future contact was obtained, which should be useful in case any further information or clarifications appeared to be needed while conducting the analysis phase.

Interviews with HR practitioners were conducted in a manner similar to that followed in interviewing academics and departmental heads. The interview questions were designed to offer an understanding of the institutional context and provide updated information or incidents that may not have been documented in the analysed documents. Two HR practitioners were interviewed, one from each site. The minimum interview time was approximately 20 minutes, while the longest interview lasted for 86 minutes. The interview guides are outlined in Appendices A and B.

6.5.1.4 *Transcription*

In recognition of the value of transcripts in qualitative research (Bryman, 2015), transcripts of the interviews were developed to facilitate the analysis process. To ensure that respondents remained anonymous, code identifiers were used to label transcripts instead of using participants' actual names. Code identifiers are composed of letters (PA or PB) and a number, such as PA4 or PB2. The letter 'P' refers to participants of interview. The letters 'A' and 'B' refer to the research site. For example, code identifiers starting with PA refer to participants from case A, i.e. Springfield. Code identifiers starting with PB refer to participants from case B, i.e. Hudson.

Transcription took place in parallel with data collection, and continued after. Transcription was done electronically with the aid of the speech-to-text feature. The first 22 interviews were transcribed fully. When most themes were established, the remaining interviews were transcribed selectively while leaving out any repetitive information (for example, when a participant shared the same information twice). While transcribing, the researcher simultaneously noted down any thoughts that could potentially develop into themes.

All transcriptions were in English. Arabic interviews were translated by the researcher and then transcribed in English. In the rare instances where literal translation may have resulted in the loss of the meaning of some Arabic metaphors and phrases, the actual meaning was translated, rather than the literal phrase that may not make sense in English. For example, the literal translation by PA11: "it is a black disaster to employ a knowledgeable person, and then mash and rub him", is an expression of the enormous workload that prevents the realization of true academics' potential. As this metaphor may not make sense in English, it was translated to the following: "it is a big disaster to employ a knowledgeable person, and then to exhaust him with workload". Transcripts were then imported into NVivo. The transcripts were reviewed to make sure they were free of errors, and to gain an overall perspective of the holistic data and be prepared for text coding.

6.5.2 Documents

Analysis of the written documents can provide rich and holistic qualitative research data (Cavaye, 1996). Documents can often complement interviews in qualitative research, as they represent a source for acquiring a large amount of information that may not be possible with other research methods (Orlikowski and Baroudi, 1991; Lee, 2012).

Documents can include administrative documents, newspaper articles, and events' reports (Yin, 2013). While documents are useful for collecting case study data (Rowley, 2002; Yin, 2013), this data collection method has been under-utilized in organizational research (Lee, 2012). The use of documents is justified in research when other sources are not adequate *per se*, and when the documents are available to provide the needed information (ibid.).

For this research, analysing documents developed by the institution itself was beneficial for an understanding of the research setting as they provided background information of the investigated research sites, enhancing the understanding of the context in which academics decisions are enacted (Lee, 2012; Yin, 2013). Analysing documents also helps in identifying existing policies related to connectivity outside working hours. Documents are advantageous for case study research because they cover information for a long span of time, can be reviewed repeatedly, and they also reflect the context of the case in an unobtrusive manner (Yin, 2013). The analysed documents included institutional statistics data and activity reports. Documents also included regulations related to the requirements of the academic work within institutions, such as academics working hours and workload.

Many documents can be readily available on the Internet. For example, general search engines can provide an enormous number of documents (Lee, 2012). However, acquiring documents this way has been criticized for the potentiality of being biased or inaccurate (Lee, 2012; Yin, 2013). To overcome this limitation, the selection of documents was influenced by the relevance and the validity of documents. All documents were acquired from the institutions themselves, either from the official website or following a direct contact. More information regarding the data collection process will be detailed next.

6.5.2.1 *Collecting Documents*

Documents were collected prior to conducting the interviews. All documents were collected while taking into consideration the reliability of the sources as well as the relevance of the content, searching for information related to the main theme of this research, i.e. work connectivity outside work context. Specifically, three types of documents were collected: policy documents, statistics documents, and activities' newsletters.

Policy documents outlined what is expected from professionals at the selected institutions, such as professionals' working hours, overtime policies, and annual vacations. For Springfield, they follow the general policies created by the Ministry of Higher Education. Springfield's policies were available online on Springfield's website. For Hudson, no policy documents were available online. On requesting policy documents from the institution, one comprehensive document was acquired. While Hudson operates under the Ministry of Higher Education's regulations, they also have their own policies. The document was created by Hudson, and it included information specifically for its employees, such as working hours and workload.

The other type of documents collected was statistics documents. These documents contained statistics regarding faculty members, students, and academic degrees within the institutions. Statistics documents were publicly available online for both institutions. The third type of documents was activities' newsletters. Activities' newsletters reflected the setting of each research site, outlining events and activities academics organize or participate in as part of their responsibilities. Specifically, this includes a collection of news articles posted on Springfield's website, in addition to 11 semi-annual reports published by Hudson's centre of community service and continuous education.

While policy documents consisted of information most relevant to the research, statistics and activities' documents supported the research with useful information regarding the actual workload academics are exposed to within their institutions. In total, over 70 policy, statistics, and activities' documents were collected, either online or directly from the HR personnel. These documents are referenced using letters and numbers, such as DA1 and DB1. The letter D stands for the source of data, i.e. Documents, and the letters A or B indicate the case from which the document were collected. Numbers are assigned as identifiers for each category. The collected documents are summarized in Table 6.4.

Table 6. 4: Summary of Collected Documents

Case	Document Reference/Category	Description	Quantity	Pages
Springfield	Document DA1: Regulations governing the affairs of members	Policy document as per the Council of Higher Education, containing regulations and responsibilities of employees, such as their duties and financial rights	1	18
	Document DA2: Vacation Regulations	Policy document outlining regulations and rights related to holidays and leave	1	32
	Document DA3: Civil Service and salaries	Policy document as per the regulations of the civil service, concerning employees, such as their responsibilities, salaries, and overtime pay	1	39
	Document DA4: University News report	A collection of newspaper articles concerning several institute activities and events	56	-
	Document DA5: University statistics report	Document containing institute statistics for students and faculty members, a comparison over several years	1	9
Hudson	Document DB1: Regulations manual for academics and administrative staff	Policy document outlining employees' rights and duties, such as working hours, annual pay raise, and holidays	1	11
	Document DB2: Activity reports	Semi-annual reports published by the centre of community service and continuous education outlining institute's activities and events	11	160
	Document DB3: Statistics report	Document containing statistics concerning students, faculty, and staff, such as professional development activities and community service programmes	1	22

6.6 Data Analysis

The structure of the analysis followed the technique outlined by Yin (2013) for cross-case synthesis. Specifically, data analysis is conducted across three chapters, one for each case, and a third chapter for a cross-case analysis of the two cases. This technique is relevant for analysing the two cases as it provides a synthesis of the findings in addition to an account of each case independently (Yin, 2013). The data analysis followed the process outlined by Giorgi (1997) and Braun and Clarke (2006) for qualitative research. In particular, thematic analysis was followed to facilitate the management of the large amount of data (Bryman and Bell, 2015). Data analysis is composed of the following essential steps: collecting the data, reading the data, breaking data into parts, organizing and expressing the data, and communicating the data (Giorgi, 1997; Braun and Clarke, 2006). This analysis process was implemented with an understanding of its recursive nature, remaining flexible and moving back and forth as needed (Braun and Clarke, 2006). The analysis process for each data collection method is outlined next.

Due to the large amount of data generated from interviews, Nvivo software was utilized to aid in the interview analysis. First, data were broken into parts by creating initial codes. Codes were based on the topic this research is interested in exploring, including, connectivity management practices, and parameters shaping these practices. After progressing with the transcripts, and as part of this exploratory research, more codes were developed. This included, for example, workload, personal values, and participants' preferences regarding the time, content, or platform of communications. While the process of open coding consumed a lot of time during the first few interviews, coding was more fluent as more transcripts were analysed, and with the establishment of a list of codes.

Second, the codes were then reviewed and organized within themes, gathering all codes relevant to a specific theme. This resulted in more critical analysis that enabled a deeper understanding of the concept of connectivity management. For instance, codes concerning professionals' management practices based on the source, time, content, and method of communications were combined in a more general theme entitled, dimensions of communications. Third, the developed themes were reviewed to ensure their relevance to the codes extracts and to the overall story of the data. Some themes were renamed to better reflect the content. Other themes were combined into a more general theme. For

example, group norms and individual context were combined in the theme, managing connectivity within a context.

The interviews from each case were analysed as an independent project in Nvivo, while continuously comparing the similarities and differences of the themes in each case. Throughout the analysis process, memos were used to note down any interesting analytical insights related to a specific theme, or to a case in general. For example, on reflecting on the codes developed for each case, the variations in the intensity of connectivity was evident. More codes were thus created to reflect the frequency of communications and the urgency of messages as reported by participants.

The analysis of the two cases resulted in 11 themes related to connectivity management practices and the parameters influencing these practices. The combined themes were analysed further to develop an in-depth understanding of professionals' connectivity management practices. The cross-case analysis started with the composition of tables displaying data from the two cases (Yin, 2013). Themes from each case were reviewed and classified according to their relevance to the two research questions. Second, additional columns were added to the tables to accommodate the broken-up themes (Braun and Clarke, 2006; Yin, 2013). The entire table for each research question was then analysed, expressing and synthesizing the findings from both cases into broader categories. This cross-case analysis allows higher level conclusions that capture the story told by both cases (Yin, 2013).

Specifically, for the first question, i.e. connectivity management practices, themes concerning connectivity management practices were identified as relevant for answering this research question. Extracts from each theme were reviewed to identify the rationale underpinning professionals' connectivity management practices. Rationales from all themes were then combined and reviewed. This resulted in the identification of more critical themes that illustrate connectivity management practices across the two sites. For the second research question, i.e. factors shaping connectivity management practices, relevant themes were reviewed for classification into social or material factors. However, many themes were an imbrication of both aspects. Breaking themes into more detailed subcategories was therefore deemed useful. Each subcategory was then classified into its antecedent parameter (themes), i.e. human agency or material agency, represented by the individual or the technology. Further themes were developed to encompass subcategories

related to factors additional to the individual or the technology. This includes connectivity management practices within a specific situation or organization.

Similar to semi-structured interviews, the gathered documents were analysed using the same data analysis process (Giorgi, 1997; Braun and Clarke, 2006). However, the documents were analysed manually concentrating on the content of these documents. This is because many of the documents were in Arabic, for which qualitative data analysis software such as NVivo is not optimal (QSR International, 2014).

The analysis of the documents provided information regarding the policies and work context of each site, enlightening the interview analysis process. Documents were first collected from the institutions' website and went through a preliminary analysis. The purpose of the initial analysis was to assess the usefulness of these documents (Lee, 2012). The initial analysis was guided by the following questions, as suggested by Lee (2012):

- can the source from which the document was obtained be seen as reliable?
- was the document complete as originally constructed, or had some of it been partially destroyed, edited, or tampered with?
- are there other documents that might enhance an understanding of the documents?

Based on the initial analysis, HR practitioners in institutions were approached for further documents as needed. This was then followed by further analysis aimed at facilitating an understanding of the topic under study. Documents were analysed by highlighting the sections relevant to the research to synthesize the overall picture the documents provide. The methodological steps I developed to analyse the data are summarized in Table 6.5.

Table 6. 5: Summary of Data Collection and Analysis

Methodological Step		Commentary
I.	Collecting Documents	Collecting all available documents concerning employees' regulations within the institutes, in addition to newspaper articles concerning the addressed institutes
II.	Reviewing and identification of relevant documents	Reading the documents to identify those relevant, and identifying any additional documents that need to be acquired
III.	Document analysis and synthesis	Analysing documents to deliver the whole story. Revisiting interview protocols to adjust questions as necessary
IV.	Interview invitations	Forwarding invitations by email, voluntary participation
V.	Conducting interviews	Interviews were conducted at an agreed upon time and place. Interviews were recorded on the consent of participants, lasting approximately an hour, with notes taken during the interview
VI.	Reviewing the data	Creating transcripts of interviews using the speech-to-text feature. Notes were simultaneously taken of any thoughts that could potentially develop into themes. Transcription took place in parallel with data collection, and continued after. Transcripts and notes were reviewed in preparation for importing into NVivo for data analysis
VII.	Breaking up data into themes	Breaking data into parts by creating initial themes based on the questions in which this research is interested (for example, the use of mobile technologies, and connectivity management…); in addition to some themes emerging from previous connectivity studies, such as buffering availability and connective flow
VIII.	Organization and expressing	Critically reading and analysing the themes developed during the open coding process to identify additional themes and sub-themes, synthesizing the overall story of documents and interview analysis, and enabling a deeper understanding of the concept of connectivity management
IX.	Communicating the data	Discussing the findings in relation to the research questions and extant literature, generating a scholarly report for the findings

6.7 Reflexivity

Qualitative research is advantageous for the rich and detailed information it produces; this is because the researcher is personally involved throughout the research process. Consequently, the chance that data and results will be influenced and biased by researchers' beliefs might be greater (Ryan and Golden, 2006). Reflexivity allows the researcher to take a step back to critically reflect on their role in the research process (Guillemin and Gillam, 2004). This involves a reflection on how knowledge was generated, with recognition of any factors that might have influenced the knowledge generation process. Reflexivity is also concerned with the whole research process, including data and participants (Ryan and Golden, 2006). An understanding of reflexivity is essential for properly executed qualitative research. This is because reflexivity helps improve the quality and validity of the generated knowledge, facilitating more rigorous research (Guillemin and Gillam, 2004).

Reflexivity mandates honesty and openness regarding where, how, and by whom the data were collected (Ryan and Golden, 2006). This qualitative research was conducted and written by the researcher. A representation of the self within the text is therefore inevitable. I am a Saudi academic with an established background of the research context. This may have influenced some aspects of the research process, such as in decisions about the context or the data collection methods. Coming from Saudi Arabia, the researcher had more cultural understanding of the context, compared to an external researcher. This knowledge facilitated the research process and helped to overcome some research obstacles. For example, most interviews were conducted in participants' workplaces, which was more convenient for them. Also, phone call interviews were offered as an option for male participants who seemed hesitant to participate in face-to-face interviews due to the social norms in the country.

Reflexivity was maintained throughout this research. This allowed the researcher to critically reflect on the knowledge produced, while being transparent regarding how and where this knowledge was generated. Specifically, this required the researcher to constantly reflect on the generated knowledge, asking the questions of "what do I know?", and "how do I know?" (Guillemin and Gillam, 2004, p. 274). A reflexive researcher should be alert to ethical practices in conducting research (Guillemin and Gillam, 2004). An overview of ethical issues considered in this research is outlined next.

6.8 Ethical Considerations

As this research involved interactions with human participants, it was ethically reviewed by the university's research governance procedure. The data collection was conducted only after obtaining the ethical approval from the University of Sussex. Prior to conducting interviews, professionals were asked to sign a consent form (presented in Appendix D). As part of the ethical practices in conducting research, participation in this study was entirely voluntary. The purpose of the research was explained to participants at the beginning of the process, together with the invitations, with a clear illustration of how the data would be used. Participants' consent was also taken for the recording of the interview.

I conducted this research while ensuring the confidentiality of participants and avoiding the linkage of information back to a specific faculty member or departmental head. As part of the anonymization, the names of the institutions whose members participated were replaced with pseudonyms. Only general information, such as position and working-hour arrangements, are specified to aid in analysing data findings. The identity of participants was anonymized. Transcripts were identified with a unique code, rather than participants' actual names. All participants were informed of the confidentiality of their identities.

6.9 Onward

This chapter summarized the research design developed for this research. The research design was guided by the theoretical and philosophical foundations underpinning the research. In this chapter, potential options were discussed to compare different views and methods, and to facilitate the decision of an optimal design for achieving the research objectives. Based on the result of the analysis, some options were excluded: sometimes this exclusion was not only because they did not fit the intended objectives, but also because other options were available and were a better fit for the research. Therefore, the decisions made are expected to yield better results for my current research. Moving on, the following chapters will analyse the findings from the collected data.

Chapter 7: **Analysis of Case A – Springfield University**

7.1 Introduction

This chapter presents the analysis and findings from Springfield University. The findings are presented in two parts. The first part presents a detailed account of the research site based on the data collected from documents and interviews. The second part provides the empirical analysis of the case, where responses of participants are arranged according to the main themes developed from the interviews.

7.2 Research Site

Springfield University is among the oldest and most admirable universities in the nation. In total, the university has approximately 65 departments, spread over 15 colleges. The university offers approximately 86 academic programmes in a variety of degrees, including pre-graduate, undergraduate, and postgraduate (DA5). The university also offers research centres, and distance education. Springfield's policies, such as in DA1, DA2, and DA3, rely on the general guidelines of the Ministry of Higher Education. The Ministry of Higher Education does not specify a requirement for working hours' arrangements. Academics developed the norm of following a flexible working schedule.

The weakly teaching load is well-defined in DA1; 16 credit hours (i.e. contact hours) for teacher assistants and lecturers, 14 credit hours for assistant professors, 12 credit hours for associate professors, and 10 credit hours for full professors. While the teaching load of academics is well-defined, this does not apply to the administrative tasks to which they are assigned. Academics may be assigned to administrative tasks based on the need of the college. In some cases, academics who have been assigned many administrative tasks may be eligible for a reduction in their teaching load. As stated in DA1:

> *"Those who are assigned administrative acts, such as college deputies, deans, heads of scientific centres and heads of departments, are exempted from the burden of teaching, with a minimum load of three teaching units".* (DA1)

This reduction in teaching load is stated without specific guidelines for the number of reduced hours in proportion to admin work. Academics holding administrative roles may still experience a teaching workload due to the minimum reduction in their teaching load.

For example, PA3, who is the head of the training centre, explains the workload experienced by her and her colleagues:

> *"Being responsible for the training centre, they have minimized the workload for me. Instead of teaching 16 hours, they deduct three hours so that I can have time for the training centre. But actually the training centre requires more than three hours of time. And this is not only for me; most of the academic faculty are experiencing the same thing. Everybody is holding papers going back and forth".* (PA3)

In addition to teaching and administrative tasks, academics are required to be available during office hours. DA1 states:

> *"Members of the teaching staff should work 35 hours a week … this may be raised to 40 hours of work per week by decision of the University Council. They spend hours for teaching, research, academic supervision, office hours, scientific committees, and for other work assigned to them by the competent authorities in the university".* (DA1)

However, in line with the flexible working schedule, office hours are not usually utilized. Academics' communication with students outside classroom time usually takes place via mobile technologies. PA10, a national academic, describes presence at the office during office hours as extra work. She says:

> *"The office hours are, ummm, they are extra. If I do it ok, if I don't, it is still ok".* (PA10)

Office hours may not be utilized for their intended purpose. For example, academics may be away from their office during students' office hours attending a committee or departmental meeting. It is therefore difficult for students to get in touch with academics during their office hours. As the quotes above illustrate, while the policies govern the workload for teaching, the workload related to other responsibilities remains subjective.

Like most Saudi universities, Springfield has a gender-segregated education environment. Despite the common curriculum, males and females are taught is separate classes, located in separate buildings. While gender-segregation applies to students and academics, some male academics can teach both male and female sections. Lectures for female students takes place in female designated buildings, but in a special room designed to maintain the culture of segregation. This means academics have to move between lectures, sometimes driving between buildings for the assigned classes. During an exam of female students,

male academics teaching the course are expected to be available for any enquiries students may have; these are communicated to him distantly via mobile phone with the assistance of a female exam supervisor. Female academics do not teach male academics, but they can be assigned to classes located in different buildings. PA10, a national academic delivering courses at two colleges, indicates:

> *"Some of us are assigned to teach in two different colleges within the same day. For example, we could have a lecture at 7a.m. in one department, and then have another lecture in a different building at 9:30a.m. This is insane".* (PA10)

In order to avoid any clashes in the schedules of male academics, the start time of male classes has recently been shifted. The working day for male academics is therefore extended beyond the normal working day, i.e. beyond the working hours of administrative staff. While administrative staff leave the university at 2p.m., male academics sometimes need to be on campus to deliver lectures up to 7p.m. The university's doors remain open throughout the day, and there is flexibility regarding when to come or leave the campus. This is illustrated by the comment made by PA7:

> *"I will tell you something that makes communications worse. The university has recently made changes to the timing of morning classes. Previously, classes started at 7:30a.m., but then they postponed the morning classes for male students to help solve the problems of clashes. This came at the expense of my time during the day. Now I have lectures until 4:30p.m. ... some of my colleagues have lectures at 6 or 7p.m".* (PA7)

Overall, apart from a physical presence during lectures and some meetings, academics have freedom regarding when to come to and leave campus, as well as where to conduct most of their work activities.

Classrooms at Springfield are not equipped with computers. Academics may request a laptop to be provided for them; this depends on the availability of these devices and is not, therefore, granted to all academics. Academics who were provided with a laptop consider the functionality of the device as unsatisfactory. PA7 says:

> *"It is very old, almost 8 years old...it is very slow and its battery is almost dead so it causes distractions during lectures ...I tried changing it from the university, but was told that there are no new devices. So I went ahead and bought a new laptop to use at the university".* (PA7)

As far as mobile phones are concerned, the university provide phones only to academics who are involved in distance learning. This is to facilitate communications with distance learning students due to the lack of face-to-face meetings. PA17, an HR person, explains:

> *"Smartphones are provided to facilitate the flexibility of academic members involved in distant learning".* (PA17)

Most academics have their own office, which comes equipped with a computer and a landline number. Due to academics' flexible time schedule (whereby they are out of their office most of the time), these landlines are not normally utilized for communications. The landline can receive calls, but the initiation of calls is limited to local landlines. PA11 says:

> *"Someone called me 4 times and the phone is in my office, I did not respond and I don't call back. The landline is local; I cannot call other cities in the country. He got upset that I did not call him back".* (PA11)

Springfield places an emphasis on the automation of its communication process. Academics are equipped with multiple types of software to aid the communication process. Blackboard is dedicated to managing course materials and making announcements to students [1]. It is normally underutilized due to the lack of Blackboard training for both academics and students. A second software is intended for communications between academics and technical staff, for example, to request the installation of software on a computer. A third software is intended for communications between academics and administrative staff. However, all software only supports one way communications. On many occasions, therefore, communications are conducted over less-formal channels, such as via calls and Instant Messaging (IM). Academics also communicate via social media platforms. Social media communications are not mandated by the policies, but can be a general practice for communications within some colleges. This is illustrated in the following comments:

> *"We use Telegram to share general announcements... It was created by the university and we have all registered in it... we want to announce something, we*

[1] Blackboard is a Learning management system which helps to "create learning virtually anywhere, promote collaboration in and beyond the classroom, deliver targeted information to keep learners on track, and store, share, and collaborate around content quickly and easily" (*Blackboard LMS*, no date)

> *send it to the administration and they would do so on Telegram. All of the students in the college are registered in it".* (PA2)

With communications being conducted via IM and Telegram, email communications are less common[2]. The use of emails is normally limited to specific purposes, such as for documentation or for exchanging files.

In regard to academics' background, academic faculty at Springfield come from multinational backgrounds. Given that the primary teaching language in the university is Arabic, all expatriate academics are Arabic speakers coming from Arab countries such as Algeria, Sudan, and Egypt; they have come with or without their families to work as academics in the university. International academics are employed on a contractual basis renewed every two years. With few exceptions, nearly all Saudi academics are employed on a permanent basis.

7.3 Presentation of Findings

This section presents the themes developed from the interviews with academics at Springfield University. During the analysis process, five main themes were developed in relation to the research objectives: managing connectivity through material segregation, managing connectivity through grouping, managing connectivity through classification, the contingent affordances of platforms, and managing connectivity within a context. These themes are displayed in Table 7.1 below, as influenced by Saldaña's (2013) data displays, and are elaborated in the following sub-sections.

[2] Telegram is a messaging app that "can send messages, photos, videos and files of any type (doc, zip, mp3, etc), as well as create groups for up to 200,000 people or channels for broadcasting to unlimited audiences". (*Telegram*, no date)

Table 7. 1 Data Display of Case A

Theme	Description	Sub-theme
Managing connectivity through material segregation	Owning two mobile identifiers in two mobile phones	The need for segregation
		Benefits of segregation
Managing connectivity through grouping	Minimizing point of contact through the Grouping IM contacts with similar attributes or responsibilities or the assignment of a mediator	Grouping individual with similar attributes/responsibilities
		The assignment of a Mediator
		Drawbacks of grouping
Managing connectivity through classification	The evaluation of communications based on a combination of when and how they take place, what they are about, and who they are from	Who (source of the communication)
		What (content of the communication)
		When (time of the communication)
		How (platform of the communication)
The contingent affordances of platforms	The perception of communication platforms as both affording and constraining	Connectivity management as an affordance of multiple platforms
		Connectivity management as constrained
Managing connectivity within a context	Variations in connectivity management practices among individuals based on the context	Group norms (dominant platform, expectations,…)
		Individual context (marital status, dependents,…)

7.3.1 Managing Connectivity through Material Segregation

With the flexible working hours' arrangements and the lack of email communications, most communications at Springfield are channelled through mobile phone applications: this includes communications via IM or phone calls. IM and phone calls both require the user's phone number for the communications to take place. Academics' personal phone

numbers are therefore shared to enable communications through these platforms. Academics normally share their number with other academics as well as specific students, but their numbers are also sometimes shared without their knowledge or permission. For example, PA16 is a national academic who describes the disturbance he experiences due to communications from unplanned and unexpected communications:

> *"Sometimes I get calls from unknown numbers in my leisure time, and some distance-learning students ask me to help them pass. This is even though I did not share my personal number with them".* (PA16)

Communications via academics' personal numbers were found to be the norm at Springfield. This is especially useful for the facilitation of communications among academic members, or communications with administrative staff. Such communications can also take place beyond this intended purpose. Communications via academics' personal numbers can be disturbing to personal time. For example, while some academics deliberately share their number with some or all students, other academics prefer to keep it restricted to use by colleagues. Academics' numbers are sometimes obtained by, and shared among, students without the academics' permission. Personal mobile phones are at hand most of the time, meaning that academics are in close proximity to work connectivity. This can complicate the management of work connectivity without compromising personal or social communication. PA13 is an expatriate academic describing how segregating communications can help in keeping distance from work groups on WhatsApp during engagement in social communications. He says:

> *"I use WhatsApp for family purposes and for socializing with friends, so I cannot disconnect from one group but not the others. This is the problem when you are online; all the groups will be connected to you".* (PA13)

Having one mobile number for personal and work use can leave personal and work communications entangled within the same device. This entanglement can complicate academics management of work connectivity. Alternatively, a separation between work and personal communications was found to help academics in segregating work and personal communications, facilitating their management of work communications. Specifically, material segregation here denotes having multiple identifiers (i.e. multiple phone numbers) on separate mobile devices to aid the separation between personal and professional communications.

Owning two separate mobile numbers is found to be effective for segregating communications via multiple platforms on mobile phones, such as IM and phone calls. This can lessen the disturbance of work connectivity and facilitates academics' management of the distance between them and work connectivity. For example, PA10 is a national academic who gives an account of the lack of management she encountered when responding to anonymous phone calls prior to owning two separate mobile phones. She explains how having another number enabled her to preserve the privacy of her number and facilitate the management of work connectivity:

> "*One of reasons why I have another number is because I don't know who will take my number from management or someone else. When they take my number they will call me, and usually they call during the day, not night. However, should I answer the phone and receive the call even if I don't who it is? From work or not? ... So I dedicated a phone to be used only for work … I have two phones because I had problems, so I had to have another one. Some management members gave my number to my students without my permission, that affected my personal life and that's why I have another number. I dedicated a phone to be used only for work, and I have WhatsApp to communicate with my students or my managers or even my colleagues … I don't charge my phone sometimes, intentionally".* (PA10)

Dedicating a separate device for work can afford academics the ability to distance themselves from work communications at certain times, such as by not turning on the work device. This facilitates academics' management of work connectivity without compromising personal communications.

Material segregation can act as a border between work and personal communications. This affords academics the identification of work communications and personal ones. It can also support their decision to engage in one domain but not the other. This segregation affords the ability to distinguish between work communications and personal ones, facilitating the decisions made in response to communications. Material segregation can enable academics to identify when communications are related to work. It also facilitates academics' management of when to engage with work connectivity. For example, PA7 is an expatriate who dedicates one mobile phone to work and another to friends and family. He also communicates with very close academic colleague whom he views as friends. He shares how this segregation allows him to be selective of the source of communications he receives at night:

> *"I have two phones, one for work and students (which I put on silent after 9p.m.), and I have another number on another phone for friends, relatives and very close academic colleagues".* (PA7)

The material segregation of mobile devices can enable academics to be connected to work during specific times of the day. Some academics prefer to be connected during specific periods of the semester. For example, PA11 is an assistant professor delivering courses to distance learning students, who sometimes contact him via mobile phone. Communications with distance learning students via mobile technologies is perceived to be the equivalent to the office hours of regular students. Having a separate phone number for this group of students afforded academics the management of the distance between them and distance learning students depending on the period of the semester, fulfilling students' rights for communications without compromising his personal time:

> *"During the exam period, the work phone has priority. For two or three days before the exams, it takes priority. During normal working days, I only open this phone during office hours … it is for distant students and it is their right because there is no communications with them at all. It is their right because they are distant learners and we should communicate with them".* (PA11)

The material separation of work communications was generally perceived as helpful, even for those whose work and personal communications are entangled within the same device. PA2 is an expatriate academic who has minimal social connections in the country outside the work domain; she does not see the urge for dedicating a second number specifically for work communications. She does, however, share how the entanglement of work and personal communications within the same device can constrain periods of disconnection:

> *"My son lives in Germany, and he contacts me nearly every day. So, if I turn off my phone he will get worried about me. I have to tell him that I will turn off my phone just to relax or to help his sister with her homework.... if I had a phone specifically for work, I would have been able to switch it off when I am not waiting for someone to contact me, or during weekends for example".* (PA2)

As the comments above illustrate, material segregation allows academics to have more than one phone number. Having multiple identifiers on separate devices enables the separation between work and personal communications, and consequently facilitates the management of work communications.

7.3.2 Managing Connectivity through Grouping

IM applications, such as WhatsApp, enable communications within groups: this affords online discussions with multiple members at once. Academics appreciate this facility and view it as helpful for minimizing the intensity of communications. Specifically, groups are utilized for the centralization of point of contact. This includes (a) grouping individuals with similar attributes or responsibilities in single groups, and (b) assigning a person to act as a mediator between the academic and another group of individuals at a lower level, such as students. Minimizing the point of contact through grouping can facilitate communication with several individuals, taking less time and effort. For example, PA5 is a former departmental head who explains the variety of groups in which she and her colleagues are involved. She says:

> *"I am part of multiple groups. One group is for communications between us and the male academics, and there is another group for communications among female academics in the Department. We have groups for communications between us and administrative staff. There are also groups for communications with students, and for each course".* (PA5)

As the quote above illustrates, academics use grouping to conduct discussions with all involved parties in one common space, such as a virtual IM group. These groups can either be an initiative of the academic member (such as when creating groups for their class sections), or a majority consensus among academics working together towards common responsibilities (such as when they are part of a group for the department or a specific committee). IM groups are regularly monitored by their users, offering an optimum method for effortless and instant sharing of announcements.

IM groups were found to facilitate communications regarding unexpected situations, such as cancelation of lectures due to unforeseen weather conditions. This can also be helpful for routine communications with students, such as those concerning homework or exams. PA9 is a lecturer who has been working at Springfield for two years. She describes how she communicated with her students on a one-to-one basis when she first joined, but then decided to utilize the grouping feature of IM applications to save time. She shares:

> *"At the beginning, I was more open; I welcomed all communications from students in a personal one-to-one conversation on WhatsApp. But some students preferred to ask me personally; I told them that this question is better asked in the group so that other students would see it and would benefit from the answer. I can't do it one-to-one because there is not sufficient time".* (PA9)

Grouping communications can eliminate redundant messages. By grouping individuals having similar interests together, shared information (such as answers to enquiries) is viewed by all members of the group. It is therefore perceived to save time and effort spent on repeating information.

Grouping communications is also perceived as a method for minimizing the disturbance of connectivity. This is because grouping can afford communications with a group of people that takes less time and effort compared to multiple one-to-one communications. This is also because a message can precede a response, meaning that academics can receive a message by default without the need to respond or give consensus. This allows academics within the group to view messages when their time allows. Communications via IM groups can therefore be less disturbing than other communication platforms, such as phone calls, where the response precedes the message. PA11, an assistant professor, shares how grouping allows instant communications, and with minimal disturbance:

> *"WhatsApp is a dominant communication means; there is a group for the department. To avoid disturbance, colleagues send a WhatsApp message telling, for example, that there will be a meeting tomorrow, or share changes to the schedules".* (PA11)

While IM grouping is convenient for academics sending the message, it can also be less disturbing for academics receiving the message, making it a win-win situation. However, it was also found that grouping can intensify communications, complicating the management of connectivity. Being widely utilized, grouping can open the door for connectivity via multiple groups (such as multiple groups for colleagues for the department and for each committee, or multiple groups of students based on sections). In each group, discussions can, in many cases, divert from the purpose for which the group was created. For example, members of the groups may share messages that do not require a response from the academic. PA7 shares:

> *"Last semester I had 8 sections, and 8 WhatsApp groups... in many cases students discuss things between themselves that are not related to me personally, so I move on to complete other things".* (PA7)

Being part of a group can overwhelm the academic who might receive many messages, many of which may not require their direct input. The increased number of messages can also make it difficult to keep up with continuous discussions. Instead of saving time and effort, grouping can sometimes cause excessive connectivity, resulting in the opposite of

its intended purpose. Some professionals realize this effect and, while they are in favour for the affordance of groups, they opt out from being in the group and approach an alternative method for grouping. Specifically, many academics assign a mediator to communicate on their behalf with a group of individuals. This is usually feasible with groups at lower levels, such as students. For example, PA3 is an expatriate lecturer with five children, including young triplets. She describes how the appointment of a mediator for communications with groups of students in each course section helps to minimize the communications she receives, saving her some time. She shares:

> *"At the beginning of each semester I give my phone number to only one of the students and ask her to create a WhatsApp group with her classmates ...I ask her to create a WhatsApp group with her classmates, without including me in the group because I don't have time to reply to all messages. I inform them that communications with me are limited; if there is something important, the student who has my number will communicate it to me. And if I want to share something with the students I inform the student to let her colleagues know".* (PA3)

Centralizing a point of contact through a mediator, i.e. one of the students from that particular group, can represent a filter for communications between the academic and other groups of students, allowing connectedness for important matters. This, however, was also found to be problematic in not allowing sufficient communication with students, sometimes resulting in additional one-to-one discussions on WhatsApp. For example, PA3, who chose not to be part of her students' group on WhatsApp, explains the conflict between the students' benefit and her own capabilities. She adds:

> *"Of course it's better if I was in the same group with them. But I just tried it once and it was exhausting. Imagine you have 30 or 40 students; all of them are writing, I cannot keep up. And this was only for one class, and I can have five or six classes".* (PA3)

Similarly, PA1 uses the term 'leader', referring to the student mediating the communications between him and the group of students in each section. He describes how students can bypass the assigned leader, communicating with him directly and resulting in many one-to-one discussions:

> *"I often ask the students to create a group on WhatsApp for the class. There would be a leader for that group, so I don't have to communicate with all students, I only communicate with the leader and the leader stays in touch with all students of the section through the WhatsApp group ... although I have selected a leader to communicate with, it doesn't always work like this because students have my own number and they keep sending me their enquiries".* (PA1)

As the quotes above illustrate, grouping can sometimes fail to achieve the intended purpose, such as when students bypass the mediator by approaching the academic directly. Grouping can thus intensify connectivity due to factors beyond the academic's control. For example, assigning a mediator for communications between an academic and a certain group can result in insufficient communication. Alternatively, being part of a group can expose academics to several discussions, many of which may not be directed to him personally. Many academics, however, perceive grouping as an effective method for communications, using less time and effort.

7.3.3 Managing Connectivity through Classification

Connectivity management practices at Springfield were not only related to (a) "when" connectivity takes place, but also associated with other factors, such as (b) "how" they are being contacted, (c) "what" the communications are about, and (d) "who" the communications are from. Academics in many instances classify communications based on a combination of the aforementioned dimensions and manage communications accordingly. These dimensions are elaborated next in separate subsections, although a single quote may represent more than one dimension.

The "when" dimension: Mobile technologies can diminish temporal boundaries between work and life, extending work throughout the day with less attention to actual working hours. In fact, the term "outside the working hours" did not make much sense to most academics whose mobile devices afford communications that compensate for the lack of face-to-face communications. Academics attempt to manage work connectivity by limiting communications to a specific period of the day. Many academics establish their own temporal boundaries. Such boundaries are determined by their perception of what is appropriate, regardless of what the actual working hours are. For example, PA13 says:

> *"I don't reply to anything after 6p.m. I don't reply to any emails or any phone calls. It is about time management. One should have time for work and time for family".* (PA13)

As the quote above illustrates, PA13 views 6p.m. as the limit for engagement in work communications, preferring to dedicate the remaining time of the day for his family. While academics may engage in communications through the day, they sometimes prefer to assign temporal limits to when they can be contacted during the day. Academics may, for example, stay distant later at night, such as during their sleep time. Such temporal

boundaries, although extended to most of the day, are perceived by academics to be a 'firm' rule for managing work communications.

In addition to classifying communications based on the time of the day, academics also classify and manage communications based on the period within the semester. This can facilitate the identification of communications that cannot be postponed to the next working day, such as students' enquiries regarding an approaching exam. For example, PA7 shares how connectivity is beneficial for communications with students during exam periods, despite some communications taking place late at night:

> *"Some students study late and want to ask urgently about something related to the exam. I think it gives students a better chance to communicate with academic faculties".* (PA7)

As the comments above illustrate, mobile devices diminish temporal boundaries between work and life. This means that academics have to establish their own temporal boundaries, classifying and managing communications accordingly.

The "How" Dimension: Mobile applications afford communications via various applications, such as phone calls, emails, or instant messages. Academics usually develop a preference for specific platforms for the capabilities such applications afford. For example, academics might ignore a contact via a specific platform as an attempt to direct communications to another platform that they find more suitable or convenient. For example, PA11 dedicates a phone number to WhatsApp:

> *"Students tend to misinterpret your words on the phone. They call to know what the exam is about, what is included and what is excluded … I open the phone but don't respond to calls: I only respond to WhatsApp".* (PA11)

A mobile device has multiple means for connections, such as IM and phone calls. Academics may accept communications via the platform of their preference, ignoring communications via other platform. For example, academics might direct communications to IM instead of phone calls, which they perceive as associated with higher risks of misinterpretation. Similarly, many academics do not respond to phone calls and direct communications to IM for the short and instant communication afforded by the application. PA10 is a national lecturer who engages in many work communications with three colleges. She explains that not responding to phone calls generates communications on other platforms that she prefers more. She explains:

> *"They will keep calling. Or they will, and that what happen, they will go to WhatsApp; they will tell me what they want, and this usually doesn't take much time, so this is better for me".* (PA10)

IM allows instant and short communications. It also offers communications in written form, minimizing the chances for verbal misinterpretation. Many academics manage connectivity by directing communications to IM. IM also has the ability to create groups for communications that facilitate conducting communications based on the common interests and goals of its members. Academics classify communications and direct them to the appropriate group within the IM applications. While it is generally acceptable to receive communications outside working hours, conducting these communications via a preferred platform can facilitate the management of connectivity. For example, PA9 is an expatriate lecturer who is frequently engaged in the organization of community service activities. She perceives connectivity as a facilitator for achieving work responsibilities and explains her preference for connectivity via WhatsApp. She shares:

> *"I prefer WhatsApp, because it is more accessible. I can take it with me even in the kitchen or if I am out shopping, anywhere. I know you're thinking but the email can also be synced on mobile phones, but it requires making options. I need to compose a new mail and then add the email address of the recipient, so it does take more time. But WhatsApp is easier and I can respond immediately".* (PA9)

Many academics manage connectivity by directing communications to IM for its ease of use, concise messaging capabilities, or for being 'always-on'. Other academics find communications on WhatsApp to be overwhelming, creating intense communications and discussions, especially when it comes to communications with an enormous number of students. Academics therefore may manage the intensity of connectivity by directing communications to other platforms offering one-way communications, minimizing intensive discussions. For example, PA8 shares how she, together with her colleagues in the department, attempt to direct student communications to Blackboard and Telegram instead of WhatsApp. She also explains how Blackboard is preferred over emails for the submission of students' assignments because it eliminates duplication of submissions. She says:

> *"We try to redirect communications with students to be channelled through telegram and Blackboard because communicating with students on WhatsApp was just too much. Students used to send the reports by email, but, for example, one student would send many versions of documents with very minor changes. For example, if she added a page border she would send another copy, and if she*

> *forgot to number the pages she would send a third copy. So I would have multiple copies for the same student. Imagine how many emails I would receive if all students did the same. However, on Blackboard a student can delete the first version and upload the updated document instead".* (PA8)

Many academics have specific preferences for the platform on which communications with students are conducted. PA2 is an assistant professor who communicates with students via her personal number to coordinate several community service activities. While communications for these activities are acceptable, she describes messages for different purposes as negative and bothersome. She shares:

> *"Because students communicate with us through our personal number to coordinate community services activities, they tend to use it during other times as well. For example, they would ask, is it ok if I arrive late to lecture tomorrow?, or professor can you postpone the exam for me? They do sometimes use it in a negative way that bothers us. In such cases we sometimes don't respond. Communication between academics and students is not supposed to be this way".* (PA2)

As the comments above illustrate, academics sometimes manage connectivity by directing communications to the platform they perceive as preferable or more appropriate. In many cases, this classification is based on the capabilities of each platform, such as the form of communications it affords (e.g., verbal vs. written, single message vs. discussions, one-way vs. two-way). Classifying and directing communications to specific platforms can overcome misinterpretation, save academics' time, or decrease the intensity of communications.

The "What" Dimensions*:* Academics classify and manage communications according to the content of communicated messages. This usually involves managing communications based on the content. For example, PA7 is an assistant professor who shares how he sometimes ignores communications based on the content. He shares:

> *"One student approached me talking about her teammate in a bad way. I always direct them to solve their personal problems among themselves without dragging us in the middle of it. Sometimes we need to ignore some complaints from some students… I ignored it because of the content. It is unacceptable ethically to talk about a team member in a bad way".* (PA7)

As the comment above illustrates, academics classify communications based on their content, acting accordingly. Academics may ignore messages unrelated to the curriculum, or discussions that the academic does not want to be part of, such as students' complaints

about other team members. Classifying communications based on content can also aid in academics' decision making process. In many instances, academics base their connectivity management practices based on the importance of their instant reply to the communication. PA9 explains how the management of connectivity at a specific time can vary based on the content of the message. She shares:

> *"In some cases I get contacted after 10p.m.; sometimes I respond, and sometimes I don't, depending on what it is about. If it can wait, or if she can find the answer in our previous discussion within the chat, I don't respond till the next working day".* (PA9)

Academics' response to connectivity outside working hours can vary based on the content or purpose of the message. In many instances, academics evaluate the urgency of the message, or the importance of the enquiry to aid in their decision of how to manage a certain communication. The content of the message can also influence how academics perceive connectivity outside working hours. For example, PA6 is a national lecturer who, she shares:

> *"I have no problem with administrative staff contacting me, but I don't like it when they contact me to assign additional tasks to me".* (PA6)

As the quotes above illustrate, academics react to connectivity outside working hours differently based on the content within the message. Academics can classify the communications based on the importance, the urgency, or the consistency with their responsibilities. This can consequently facilitate their decision when responding to work connectivity.

The "Who" Dimension: The responses of participants also illustrate their tendency to exercise various connectivity management practices for different groups of people. Their connectivity management practices can be governed by social relationships, or perceived power distance between them and the person on the other end of the communication. For example, PA6 explains how she accepts communications on her personal number from academic and administrative colleagues, but not from students. She shares:

> *"All staff can contact me via my personal number, but I got mad when the administrative staff gave my number to one of the students".* (PA6)

The perceived power distance between the academic and the person initiating the communications can either hinder or facilitate connectivity management practices. For example, PA1, a national lecturer, explains how he usually exercises minimum or no resistance to communications from colleagues, but is able to establish rules to manage connectivity with his students. He shares:

> *"If it's from my colleagues, I never act against it because I don't want to be in conflict or to be impolite to my colleagues or the head of the department, or even if they are from the administration, I never try to push them away … if it is with my students I think I have the power to set rules or have some control over their behaviour because I think it is much easier than to make restrictions to other colleagues or administrative staff".* (PA1)

While academics may have more management of connectivity between them and their students, this management might be restricted for communications with their colleagues. Academics can sometimes develop different preferences of communication platforms depending on the source of the message. This classification of communications is evident in the comment made by PA16. He shares how he prefers different communication platforms depending on who the communications are from:

> *"For faculty and administrative staff, I prefer communications by phone. But for students, I prefer that they contact me by email rather than any other means".* (PA16)

Academics usually share two main categories of the source of communications, i.e. colleagues and students. Some academics may classify the group of academics further based on the position the initiator of communication possesses in the academic hierarchy. For example, when asked for how long she postpones responding, PA3 replied:

> *"If you have bad luck, your department head could be the one calling you. So you have to respond or call back. But if it is from someone at the same level, I can postpone the call, and I do it a lot, I postpone the call until my time allows, whenever my time allows".* (PA3)

Academics may manage connectivity differently based on the person on the other end of the communications. Communications from individuals with a higher position create greater urgency to respond compared to communications from those at similar or lower level.

7.3.4 The Contingent Affordances of Platforms

Communication devices and platforms have different properties. These properties afford different possibilities for connectivity management practices for different academics. A single property can be an affordance or a constraint, based on the context in which the platform is used for communications. This can consequently result in different layers of imbrications. For example, most academics at Springfield are accessible outside the work context via their mobile devices. Their mobile devices afford various platforms for communications, ranging from phone calls, to emails and messages. This allows academics to manage connectivity by (a) limiting platforms on which they make themselves available (e.g. by turning off the Wi-Fi to limit urgent communications to phone calls), or (b) conducting communication via a specific platform depending on the content of or the receiver of the communicated message. PA16 is a national academic who explains his selective process towards connectivity management as follows:

> *"I use WhatsApp with faculty members and staff for unimportant and non-critical inquiries, or if I want to notify those responsible for the maintenance of the college about some observations. I use email with faculty members and administrative staff regarding formal processes, such as department meetings or coordination meetings for the final exams, or for work specifically for student activities, such as designs and announcements".* (PA16)

The multiple communication platforms enable academics to evaluate the nature of communications and accordingly select the platform they perceive as most appropriate. Having multiple connectivity platforms can simultaneously constrain connectivity management. Specifically, academics' practices regarding the preferred platform remain limited to when they are the initiator of communications. However, when on the receiver side, choosing not to engage with a certain communication platform will in most cases lead to other, and sometimes consequent, attempts for connections via either the same or another platform. For example, when PA3 did not respond to a message she received from work at a social gathering, the communication took place through another platform, specifically a phone call. She suggested postponing the discussion to the next working day, explaining how she felt as follows:

> *"I received a WhatsApp message. I honestly read it but did not respond to it; this was something related to job but not urgent... he called, and was annoyed that I read the message but did not respond. He asked me for a solution, I told him that it must wait until Sunday. After some time, he was convinced, but it was after he drained my energy and got me stressed, when I was at a place with friends to*

> *enjoy my time. People around me started asking what was wrong, and the atmosphere changed".* (PA3)

Multiple platforms can lead to insistent communications. This can pressure academics to respond to communications and constrain their connectivity management. This is especially true when the communication platform enables the sender to identify when his message has been read, such as in WhatsApp.

WhatsApp is the dominant platform for communications in Springfield. Many academics find it advantageous for the management of work connectivity for many reasons. For example, unlike phone calls, WhatsApp allows transmission of instant communications with or without a response. This enables many academics to receive communications and respond in their own time. PA11, a lecturer and the head of the training centre, illustrates how WhatsApp can overcome the disturbance caused by other communication platforms. She shares:

> *"WhatsApp is a dominant means of communication; there is a group for the department. To avoid disturbance, colleagues send a WhatsApp message telling, for example, that there will be a meeting tomorrow, or share changes to the schedules".* (PA11)

WhatsApp is an always-on application, affording a quick method for communications. Many academics find this useful for sudden announcements. Instant communications can also be useful for online discussions. PA5, a former departmental head, states that WhatsApp can surpass the capabilities of emails for the instant communications it affords. She says:

> *"If we need a live online discussion outside working hours, this cannot be done by email ... If there were no WhatsApp, many tasks would make no progress. It's a very efficient method for communications. It is a very efficient tool for managing and utilizing time. For example, I can share specific information on the group and everyone can see it and perform the requested task. In addition to being a communication tool, I also view it as a time management tool".* (PA5)

As the comments above illustrate, WhatsApp can also be a time management tool, specifically due to its always-on feature, facilitating instant communications to groups of people taking less time and effort. It was also found that the always-on feature can constrain academics' management of connectivity, rendering some academics to redirect communications to different platforms or devices. For example, some applications, such

as WhatsApp, make the connection status of a user public to all contacts. Individuals from work can thus see when an academic is online, expecting an immediate response when sending a message. For example, PA13 is an expatriate academic who uses WhatsApp for both social and work communications. He illustrates how having the same identifier for work and personal communications can complicate the management of when to connect to work:

> *"I use WhatsApp for family purposes and for socializing with friends, so I cannot disconnect from one group but not the others. The problem is when you are online all groups will be connected to you. You cannot split groups. The only thing I can do is to use the busy status, but they can still see I am online and they can send a message".* (PA13)

Some academics manoeuvre the constraints of WhatsApp by employing other methods for communications. Communications through the university email are less common and usually intended for academic responsibilities. However, some academics employ this platform for communications with students. As opposed to being always-on, emails can be logged into during specific times, facilitating academics' management of when to engage with work communications. For example, PA13 continues by discussing how communicating with students by emails facilitated the management of connectivity:

> *"Students can only contact me by email or my office number … Normally I don't like to open my email at home, especially at night, after 6p.m. for example. Sometimes I am busy with the kids or doing something".* (PA13)

As the quotes above illustrate, academics' connectivity management practices can be influenced by the properties of available methods of communications that can facilitate or hinder an academic's management of connectivity. Academics' management of connectivity can consequently take various directions based on the affordances and constraints of the communication platforms in use.

7.3.5 Managing connectivity within a context

Academics can perceive, and react to, connectivity differently based on the context in which connectivity takes place. This context can be shaped by group norms (such as the common practices of academics within a department), or the individual circumstances (such as being single or expatriate). An academic's preference for connectivity via a certain platform may be constrained in a department with different norms for communication channels. An academic with social and family responsibilities may see

more need to manage connectivity than an academic who has fewer responsibilities outside the work domain. Such differences among academics' collective and individual contexts can influence the perceived intensity of connectivity. This can consequently influence how academics enact connectivity management practices.

PA13, an expatriate assistant professor who has been employed at Springfield for less than two years, views IM communications as problematic for displaying his online status, pressuring him to respond. While this communication method represents a constraint for the academic, and despite the availability of other communication methods that overcome this constraint, the participant continues using WhatsApp. PA13 says:

> *"With emails you cannot detect whether the person is online or not, but with other social applications you can tell whether the person is online or offline … when I would like to communicate about anything I will not send an email because I know they may not respond quickly".* (PA13)

Managing connectivity based on an academic's preference may not always be feasible. This is due to the group norms that can direct communications to specific channels, constraining some academics' management of connectivity. Group norms can also facilitate academics' connectivity management. For example, PA8 is an associate professor who, together with colleagues in her department, exercises a collective effort to change the norms of communications among them and their students. She shares:

> *"We try to redirect communications with students to be channelled through telegram and Blackboard because communicating with students on WhatsApp was just too much … Most students do not read their emails so telegram is easier and students do not know your number".* (PA8)

As the above comment illustrates, group norms can influence the way in which communications take place. Academics in the department find WhatsApp problematic for the instant and intensive communications it allows. They are also annoyed for having to share their number with students for communications to take place. They took the collective students' act of not reading their emails into consideration, and tried to find alternative platforms that overcame the perceived constraints of WhatsApp communications. Telegram afforded communications while maintaining the privacy of academics' phone numbers. Blackboard allows academic to share course materials, post online quizzes, and receive students' assignments with fewer problems. Group norms can

thus facilitate or constrain the management of connectivity based on academics' preference in relation to the overall norms of their department.

Academics' management of work connectivity was found to be influenced by many factors of their personal context. This includes, for example, being an expatriate, their social status, or the number of dependents they have. For example, for expatriates, work communications can be a form of socialization with other expatriates with whom they share interests. For example, PA7, an expatriate working at Springfield for 10 years, shares:

> *"As expatriates in Saudi Arabia, we left our family back home and came here with our small family, wife and kids. Usually as families of contractor academics, we form our own community. Egyptians are together, Sudanese are together; it is an informal arrangement. We meet at home or at public places like malls. And when we get together, we talk about work. The work discussions are continuous, even during weekends at 10 or 11p.m". (PA7)*

For expatriate academics, social connections outside the work context are limited. They were thus found to be more willing to engage with work communications outside working hours. In some cases, these communications can arise at the weekend or during social communications with other expatriate academics. This can be attributed to work being a common interest among expatriates who usually form small social communities together. It can also be attributed to the limited social connections academics have beyond their families and outside the work context. For example, PA9, an expatriate academic with two children, justifies her availability outside working hours to her personal circumstances. She says:

> *"My husband comes back late every day around 9 or 10 so this is why I am available all day.… my kids are still young, two and four years old, so until now I have not experienced the workload of school homework. She's only in KG1, so she finishes her homework quickly in less than half an hour. And even if I receive a WhatsApp message, or any kind of communication, I respond immediately, but I'm with her watching her while she completes her homework".* (PA9)

Academics' social responsibilities can influence how much time they are willing to devote to work outside working hours. Academics may find the age group of their children to be less demanding, allowing them time to engage in work communications with minimum disturbance. For example, PA5, an expatriate living with her adult children, explains:

> *"Communications may affect other people who may not be able to communicate. They have their own circumstances. Some might have small kids, or have a demanding husband. For me I'm glad I only have my children and they are grown-up. Frankly speaking, sometimes I do not have time to cook, but I don't think not cooking for them is a problem because I took good care of them when they were young, until they grew up".* (PA5)

The influence of the personal context on how academics engage with connectivity can sometimes create a certain level of expectation with regard to how an academic engages in work communications outside working hours. Academics who have fewer responsibilities perceive themselves as being more available than others with demanding dependents. In some cases, this expectation can result in more communications, complicating academics' management of connectivity. For example, PA10 is a national single academic who demonstrates her annoyance of the expectations of availability associated with her social status. She shares:

> *"Sometimes they think because I'm single it is ok to give me comments like: you are not married yet, so you don't have children, you don't have so and so. So, they think I have more free time than others…it's not about being single or not, it's just, it's from my personal life".* (PA10)

The individual context can influence academics' management of connectivity. It can influence how much time academics may be willing to devote to work outside working hours. The individual context was also found to create an expectation of availability associated with the academic's social context. Academics may therefore engage in connectivity differently based on the context in which their connectivity management practices are enacted.

7.4 Onward

In this chapter, I have presented the findings of the first case study. This case provides evidence of the various practices academics enact for managing connectivity when outside the campus. The findings also highlight the contingent implications of connectivity via mobile technologies and the significance of the context in which connectivity is enacted. The findings highlight the role of the interplay between the social and the material for shaping connectivity management practices. In the next chapter, I present the findings from the second case study in a quest to gain further understanding of connectivity management practices under a different setting.

Chapter 8: **Analysis of Case B - Hudson College**

8.1 Introduction

This chapter presents the analysis and findings from Hudson College. The findings are presented in two parts. The first part presents a detailed account of the research site based on the data collected from documents and interviews. The second part provides the empirical analysis of the case, where responses of participants are arranged according to the main themes developed from the interviews.

8.2 Research Site

Hudson College is a relatively new university established less than two decades ago. Hudson has two branches, one for males and one for females, consisting of seven departments in total. Hudson offers nine academic programmes, all being for undergraduate degrees. According to DB3, the number of academic faculty in the college is approximately 250, while the number of students is about 2,800. The university follows a fixed work schedule, where the working day is for eight hours a day. Academics at Hudson describe disciplinary guidelines as 'strict'. For example, PB19, a national lecturer who has been working at Hudson for four years, says:

> *"Here the regulations are very strict. This is because there would be problems when you are absent. Other teachers have their own workload so you cannot be absent unless you provide justification, and they will not approve absence in every case. Also they are very strict about the time when they say you should be in the office or at the class at 7:00a.m.; you should be there. Even if you were late for 2, 3, or 4 minutes that would be noted and reported in the attendance sheet. I remember one time I was 5 minutes late and that was mentioned in the report. They are very strict about these things".* (PB19)

DB1 gives clear guidelines regarding the discipline of its academics and states:

> *"Academics are expected to avoid arriving late, leaving early, or be absent without an excuse ... academics are expected to avoid deliberate delay or reduction of work productivity in carrying out the tasks assigned to them".* (DB1)

In line with the university guidelines, most work is conducted in accordance to a pre-planned agenda. Academics fulfil their work responsibilities by utilizing the working hours for completing the tasks assigned to them. Planning tasks in advance keeps the

work time occupied and leaves less potentiality for surprises and last-minute work, as indicated in the comments below:

> *"Sometimes the working schedule is so hectic that we don't get a chance to talk to each other ... We have mostly pre-prepared schedules for targets, for activities, and for everything, so it doesn't usually happen that after 3p.m. I would receive a message or something really urgent that needs to be submitted the next working day".* (PB16)

Academics' working hours are divided among three main tasks: teaching hours, lecture preparation hours, and office hours, with a total of 40 hours a week. The weekly teaching load of academics varies according to their position. According to DB1, it is 24 teaching hours for lab technicians, 20 teaching hours for teacher assistants, 18 teaching hours for lecturers, 16 teaching hours for assistant professors, 14 teaching hours for associate professors, and 12 teaching hours for full professors. Preparation hours are half the teaching load of an academic; it is expected that this time is dedicated to preparing class notes, writing quizzes, and anything related to the preparation of exams and lectures.

After calculating the teaching and preparation hours, the remaining hours are considered as office hours, which are divided among the five working days. The office hours are dedicated to guiding students and answering any relevant academic concerns; academics are required to be at their offices during office hours. DB1 does not specify how office hours should be spent, but it is the norm that these hours should be spent for class work. Many academics utilize office hours to complete the admin work assigned to them by the college, such as when being the programme director, Student Information System coordinator, or department club leader. Academics also spend their office hours for the organization of college activities, academic supervision, and attending departmental and committee meetings. The quotes below illustrate the variety of responsibilities assigned to academics:

> *"There is office work, lots of office work ... office hours are supposed to be for office work for our class, for how we do our job like teaching, but we don't get to use these office hours fully for our benefit because these hours are used for the school, because they give us a lot of admin work".* (PB17)

Academics within the same department share an open work space. Offices are arranged into cubicles and each office is equipped with a landline and a desktop for use during working hours. All classrooms at Hudson also have desktops. Each academic is provided

with a laptop to be used at home, such as for accessing emails or for uploading students' grades. The university does not provide academics with smartphones, but academics may be expected to share their phone number. For example, this includes to address any unforeseen situation in exam rooms when they are invigilating exams. Academics are also sometimes expected to be accessible outside the college. For example, this includes when they are assigned to the supervision of Co-op students, i.e. students conducting a semester of field-training as part of their degree requirement. Co-op students are normally trained outside the college, creating the need for alternatives to face-to-face communications and discussions. Sharing a personal number with Co-op students is therefore intended to complement emails and facilitate the communication process. This is especially when academics visit workplaces for their Co-op students, which they do twice per semester. For example, PB12 shares:

> *"Providing my number to Co-op students is advisable, but I still have a choice. I gave them my number because I need to visit them twice per semester so I need to be able to communicate with them, or else how would I notify them when I arrive. I need to contact them so that they can come and get me. If I have an option not to give them my phone number, I mean to do the work without giving them my phone number, I wouldn't give it to them".* (PB12)

The university assigns an email address for each of the academics; this is considered as the main method for communication among academics, students, and administrative staff. PB7, a deputy departmental head, says:

> *"Email is for formal communication and documentation because phone calls are hard to track ... there was a misunderstanding between a faculty member and a student, and when the third party tried to assess the situation, it was difficult to do so based on the call log".* (PB7)

Emails are normally expected for communication and are preferred over other informal communication channels. When academics access their emails outside working hours, most of them do so via laptops. This is because of technical difficulties that prevent most academics from syncing the university email on their phones. However, many academics are unaware of such technical issues and they prefer accessing email from a laptop as a personal choice, because they do not usually need to access their email outside working hours. Communication platforms other than emails may also be used outside working hours. The use of informal communication channels within the university is limited and is mainly used for alerting or notification purposes. This is illustrated in the quote below:

> *"I sometimes ask on WhatsApp, can you check your email, for this and this. Then most of the things are done through emails. I prefer most of the formal things to be done through email ... for me I have used it [WhatsApp] to alert. Let's say I have a document and I want to send it to someone, okay. I'd say I've finished this document, please check your email. That's the way I've used WhatsApp. But I've never gone into detail about talking about this document on WhatsApp"*. (PB1)

Emails are the main communication method, but not the only one. The university makes use of the Blackboard system for communication between academics and class students. IM is sometimes used for notification purposes, i.e. to alert and direct communication to emails. Some academics also use WhatsApp to alert students of announcements. PB16, an expatriate academic says:

> *"We send announcements to them by email; they do receive it, but when we ask them 'did you receive it?' half of them would say that they did not check their emails yet. But if we send them a message on WhatsApp, even after posting the announcement on the Blackboard, it ensures that they have seen it".* (PB16)

At Hudson, the teaching language is English, except for some general courses that are taught in Arabic. In adhering to the gender segregation culture in Saudi Arabia, teaching is conducted across two branches, males and females. These branches are relatively small in size, located in two separate buildings. Four of the seven departments are common across the two colleges, while three departments are exclusive to one college or the other. Communications among faculty members between the two colleges is uncommon, and in some cases, communications between male and female academics within a similar department are rare. Most academics within the department do not engage with the male branch on a one-to-one basis, with the exception of some joint meetings involving academics with departmental-level responsibilities. This is illustrated in the comment of PB1, an expatriate lecturer who has worked at the college for 11 years:

> *"The male branch communicates directly to the head of department. Even us, we don't really… I cannot say that I've communicated with the male branch directly. So this is from the chairperson. The chairperson is the one who communicates mostly with the male branch... all communications from male branches to the college deputy go through the chairperson".* (PB1)

While the work environment is segregated, the university offers a common housing compound to all its international academic and staff. This can facilitate social gatherings of the employees from all departments at both colleges:

> *"I am staying in the family apartments of the college, so my neighbours are also my colleagues; we are with them most of the time. So I don't mind communicating with them. . . Many of them are not from my department, they are from the male branch and the female branch, so it is mixed. So social gathering is there".* (PB16)

While gender segregation in the college is in line with the country's culture, the housing system is in line with the multi-cultural background of Hudson's academics. According to DB3, over half the academics at the college are international. International academics are employed on a contractual basis, renewed every two years, while national academics are employed on a permanent basis. However, renewing contracts is very common as many of the international academics have been working at the university since it first opened.

After providing an overview of the work environment at Hudson, the findings are presented in the next section.

8.3 Presentation of Findings

This section presents the themes developed from the interviews with academics at Hudson College. During the analysis process, six main themes were developed in relation to the research objectives: Working Day is Sufficient, Managing Connectivity through Material Segregation, The Half-Open-Door Strategy, Postponing Action, Connectivity and the Individual Differences, and Material Agency. These themes are displayed in Table 8.1 as influenced by Saldaña's (2013) data displays, and will be elaborated next.

Table 8. 1 Data Display of Case B

Theme	Description of the theme	Sub-theme
Working day is sufficient	The temporal norms and expectations for communications	Working hour arrangements
		Intensity of communications
		Urgency
Managing connectivity through material segregation	The engagement with routine work communications via a specific platform (e.g., emails), or a specific device (e.g., laptop)	The need for segregation
		The practice of segregation (e.g. via separate devices or applications)
The half-open-door strategy	The welcoming of communications while maintaining some personal time	Maintenance of personal time outside working hours
		The welcoming of communications
Postponing action	The delay of action required on receiving communications	Nature of task
		Feature of communication platform
Connectivity and the individual differences	Variations in the perception and the management of connectivity among individuals	Individual values
		Nature of work responsibilities
Material agency	The role of the affordances of technologies in shaping connectivity management practices	Platform capabilities (e.g. affordances of emails and WhatsApp)

8.3.1 Working Day is Sufficient

With a work day of eight hours, many academics believe that the working day has sufficient time to carry out most work communications. Due to the perceived long working day, academics feel obligated to devote the remaining time of their day outside

working hours to their families and personal life. For example, PB4, a national expatriate who commutes daily to her workplace, explains:

> *"The working day is long. It is eight hours, plus two hours for me because I am commuting. So I am outside home for about 11 hours every day. What's remaining in the day is barely sufficient for my family and my comfort ... And I am doing my work in the college. The time here is sufficient to accomplish all the tasks, and this is the second reason ... The third reason is because I am against the idea where the whole day is dedicated for work".* (PB4)

Some academics prefer to reserve time outside working hours for their family and themselves. This is made possible by the long working day that offers sufficient time to carry most work activities at the workplace, facilitating the segmentation between work and life domains. The fixed working hours' arrangements allow academics to conduct most communications during working hours. This was found to minimize, rather than eliminate, communications outside working hours. The responses of many academics illustrate the presence of work connectivity albeit their perception of sufficient time at the workplace. Communications are present outside working hours but at a requisite level. Working and communicating during working hours appears to be the norm, leaving outside work communications limited to urgent matters.

Mobile devices render academics accessible outside working hours. This is generally accepted for urgent situations, rather than for routine activities. Connectivity can also help academics in the preparation for their next working day. For example, PB17 is a lecturer at the Interior Design department, in which students participate in various school trips and work on several hands-on assignments. She indicates how communications outside the working hours allow her students to inform her of any unplanned situations. She says:

> *"If we have a school trip tomorrow and one of the students can't attend, she might send me a message at night so that I won't look for her tomorrow, or if something happened in a student's family and she cannot submit the assignment the next day because she has a situation, they let me know".* (PB17)

Mobile devices can afford accessibility when unplanned or unexpected situations arise. They can also complement communications that are unsettled during the working day. For example, PB4, who disagrees with work communications outside working hours, illustrates how connectivity helped her in the settlement of a clash in her schedule:

> *"One day, I needed to find a replacement because I had an exam to attend as preparation for my PhD. At the same time of the exam, I had an invigilation. So because I couldn't find a replacement during my time in the college, I had to continue the search from home after leaving college. I only made one or two calls and sent an email to the head of the department".* (PB4)

When at home, connectivity via mobile devices can complement time at work. Academics can initiate or respond to communications perceived as urgent. Communications outside working hours are only conducted when needed, such as to cope up with approaching deadlines, or to answer students' inquiries during periods of assignments or exams. Because of the *infrequency of work communications* outside hours, academics at the university take a neutral perspective towards work connectivity. They do not view it as annoying. Rather, they perceive infrequent communications for urgent matters as part of their responsibility. For example, PB1 is an expatriate lecturer who describes communications outside working hours as urgent situations that require an immediate response.

> *"There is no workplace where there are no emergencies. Sometimes it comes from a completely external source, small changes in government policies and they want the information immediately. So, in those situations we should be flexible enough to be able to provide that information, but anything that is routine that has to do with teaching and students, I think there shouldn't be any surprise ... Once I receive the call, I have to adjust and carry on with the task... I view them as urgent because I have not heard a situation where every day I'm called. So it is just those few times when it is urgent that I have been called, it is not like it is an every week occurrence. These are very infrequent calls that come in".* (PB1)

Due to the infrequency and the urgency of these communications outside working hours, academics view such situations as an isolated part, and are thus less bothered by it. Specifically, accessibility via mobile technologies provides ease of access to individuals. This accessibility allows individuals, such as students, colleagues, or subordinates, to access academics regardless of time, space, or urgency of communications, knowing that they can ask for support when they want to. PB21 is a departmental head who describes communications outside working hours as a socially constructed situation. He says:

> *"Really urgent things don't happen most of the time, that's number one. And number two, I know that there were times where people didn't have phones at all and things were normal; this thing is actually a socially constructed situation where the person expects that because there is a phone, they can call someone without them doing whatever they need to do. They can solve their problem there, but actually the problem is not that people are unable to solve their problems, the*

> *problem is because they have a phone they will call people, and once they know there is no response they will solve the problem themselves".* (PB21)

Mobile devices afford communications regardless of time and space. Communications outside working hours can therefore take place because academics are accessible, rather than because the communications are urgent. Knowing that academics are accessible through mobile devices, they can be approached as soon as a thought comes into their students' or colleagues' minds. They might be asked for information that could have been attained during working hours. For example, PB16, a lecturer at the interior design department, gives an account of an incident she encountered with a communication from one of her students:

> *"Anything at 2a.m. related to the assignment - I don't think it's that urgent. But the message I received at that time was a question about the size of the paper format. I think that question could have come much earlier, before she started the work. It means that she is working the last time and she is not consistent with her work. This could be the reason why she came with a basic question that she should have asked before starting her work ... During the night it was too late, I was sleeping, but I saw it the next morning when I woke up. But that was the same day when she was supposed to submit the assignment... during my three years here, it only happened once that someone texted me late at night, I was not annoyed but I was surprised that she preferred to message at that time and the message was not urgent; it was a basic thing that she should have known before starting the assignment".* (PB16)

Mobile devices render academics accessible for issues they perceive as basic and not urgent. While a student may perceive communications as urgent, the academic receiving the message can view it as being a result of procrastination. Accessibility to academics regarding the urgency of communications can also be facilitated by the mobility of mobile devices. For example, PB5, an expatriate who lives on her own, shares how insistent communications can arise for non-urgent matters. She illustrates how students sometimes exploit accessibility to get immediate information or response, rather than waiting for the next working day:

> *"Sometimes they keep on calling. Yeah, they keep on calling. For the first time if I don't know who it is, I just ignore it. Because my phone is always with me, you cannot avoid that, right? It's always with me so I'm always looking, and, as I told you, if I'm not accepting the call they will text me, please, please can you please accept the call, pla, pla, pla? And then I have to accept it, and say so what's the problem? So it's regarding our exam, they say. Ok tomorrow we can meet".* (PB5)

Mobile phones are at hand most of the time, rendering academics more accessible through them compared to communications via other mobile devices such as laptops. Hindering such accessibility is possible due to mobile devices features, such as identifiability and personalization. Specifically, the caller number displayed on the device screen facilitated PB5's practice of ignoring communications when not recognizing the caller. Some academics can hinder their accessibility by personalizing their mobile phones to silent mode. The silent mode afforded by mobile devices can enable academics to respond to communications in their own time, minimizing disruptions. For example, PB21 is an expatriate departmental head who has been an academic for 15 years. He shares:

> *"My mobile has been silent for over 10 years now. I never put the sound on and it does not make a sound at all. I don't have a problem, I just see the missed call and I'll respond to it later. Even at work, it may vibrate in my pocket. I can have it with me at the dining table for example, it will not make a sound. This is why it does not cause me a problem when people call me at any time … Sometimes if someone calls me several times I know it is serious. And that's when I take the phone outside home to have a quiet communication area".* (PB21)

The silent feature can help academics to minimize disruption of connectivity. Affordances of mobile devices enable academics to assess the urgency of communications, identify the caller, and respond to the communication at a preferable time and place. Specifically, the ability of mobile devices to provide information concerning the frequency of communications can help academics recognize what is urgent, while identifying the caller can enable the academic to initiate other communications in response, and at a convenient time and place.

As the quotes above illustrate, mobile devices can afford ease of access regardless of time and space. Some communications may be considered urgent from the point of view of the initiator of the communication, but not the academic receiving the communication. Some affordances of mobile technologies, such as identification of the communicator and the silent mode, can provide academics with the ability to minimize the disruption of non-urgent work communications.

8.3.2 Managing Connectivity through Material Segregation

Owning two separate mobile phones appears to be uncommon for academics in the university. Consequently, combining personal and professional communications within one device poses a constraint on the management of work connectivity. Specifically,

having work and personal communications combined within a single device can sometimes constrain temporary periods of disconnections. Many expatriate academics are constantly alert for any communications they might receive from their families back home. It was found that academics manage connectivity based on the source, i.e. work or personal. Having work and personal communications within the same channel can therefore render academics to be constantly connected and complicate the management of work connectivity. For example, PB5, an expatriate living on her own, speaks about communications with her family:

> *"I'm far away from them, so I always answer them even if I'm sleeping, if I heard and it's from Philippines, I have to answer them. But if I can see that it's only local here I don't".* (PB5)

Despite having both work and personal communications through the same device, academics do exercise a certain level of material segregation. Specifically, material segregation at Hudson was not about having two cell phones; rather, it was pursued by limiting work communications via a specific platform (such as communications via emails), or to another mobile device (such as a laptop). For example, PB7, an expatriate whose family lives abroad, says:

> *"I cannot switch off my phone: if my family is calling and I don't pick up, they will panic … I want to have free mind at times … Infrequently, if I am expecting something after working hours, I check it on the laptop".* (PB7)

Such practices of segregation are found to be attributed to variations in material affordances, such as size or capabilities. It can also be due to perceptions of academics, such as privacy afforded by material segregation. For example, in terms of material affordances, laptops can afford academics more convenience in conducting communications, involving reading emails and attaching or downloading documents. PB21 is a departmental head who attributes his practice of segregation to the properties of devices in relation to the task needed in response to the communication, which can in turn facilitate achieving the job responsibilities:

> *"The emails are exclusively used on the laptop. There are times when I have something on the mobile itself, a picture related to work for example or diagram; in such case I will send it by email over the phone. Most of the time, what we do is for example revising course specifications, revising course reports, or revising other proposals or documents for quality assurance. These are all long documents that require a wide screen device".* (PB21)

While mobile phones can afford immediate response to communications, laptops can facilitate the achievement of specific tasks with more convenience. Segregation was found to allow academics to select the device that offers better options for communications, either because of the device's material capabilities, or the action required in response to the communication. The selection among devices is thus perceived to save time. As the quote above illustrates, the wide screen of laptops can offer more convenience when receiving or responding to documents, facilitating the management of connectivity. Another way through which academics can manage connectivity is by accessing emails via a personal mobile phone. Syncing emails on a personal phone does not interfere with material segregation. This is because work communications are conducted via a specific platform, i.e. the email application. PB15, a lecturer who is part of several committees and a supervisor of students on their field training, explains:

> *"I link my official university email to my phone because when I am home I don't need to open my laptop to check my emails if there is something urgent I just open my phone to answer it".* (PB15)

Due to mobile phones being on hand most of the time, synchronization of emails on personal mobiles affords more convenient access to urgent emails. Many academics, however, are reluctant to sync work emails to their mobile phone. They describe their mobile phone communications as being personal. Despite the acknowledgment that this could delay response to email communications outside working hours, restricting work email communications outside working hours to laptops can maintain academics' feeling of privacy. This can also restrict connectivity outside work to urgent matters, as described by PB4, a national lecturer in the general studies department:

> *"Urgent matters are usually determined by the department head; she can contact me on WhatsApp. I will see it and reply, but I will not make the effort of opening my university email outside work".* (PB4)

Because professionals are not expected to be available outside working hours, synchronizing work email on a mobile phone lacked sense for many of them. This is also because, in case of emergencies, their mobile phones render them accessible through other platforms, such as IM. Having email communications on a laptop can ensure peace of mind by keeping them distant from non-urgent communications. By distancing themselves from email communications, academics are aware they can still be accessible through other platforms when needed. For example, PB16 is an expatriate lecturer that

chose to restrict email communications outside working hours to laptops. Her comment illustrates how this can decrease the frequency at which she monitors her email:

> *"If someone sends something through the email directly and they don't alert me in any way, the chance that I would not see it immediately is high. But if they send a message on WhatsApp, I have sent this document for you urgently, then I will be able to view it quicker".* (PB16)

Having emails as the dominant communication channel, the segregation of email communications across different devices can facilitate connectivity management. Practices of segregation can by triggered by the affordances of technology, or by academics' preferences and perceptions. On one hand, synchronizing work email on multiple devices (such as on mobile phone and laptop) can offer academics more options through which to access communications with more convenience. On the other hand, conducting most communications outside through a single device (commonly a laptop), can facilitate connectivity management by filtering connectivity; in this way, academics are only notified when urgent emails are received outside working hours.

8.3.3 The Half-Open-Door Strategy

While connectivity is present at Hudson, the likelihood of receiving work communications outside working hours is low. Academics at Hudson embrace connectivity by "keeping the door half-open". They do this knowing that they would not normally be approached outside working hours unless that communication is necessary. I introduce the metaphor of the half-opened-door to illustrate the practice of (a) maintaining personal time outside working hours, while (b) acknowledging accessibility and welcoming urgent communications. For example, PB5 is a single expatriate who chose to give her personal mobile number to students who would otherwise not be able to speak to her outside the work context. She says:

> *"Students will not always call you, right, so it depends if they need something. I just receive it and answer them … maybe it's urgent... I don't know about others, because for me I don't think it's a problem. I'm alone here so any time they need me I can be with them".* (PB5)

While PB5 indicates her openness to communications outside working hours, she also refers to a temporal criterion after which she does not welcome communications. She says:

> *"I don't usually accept any calls or answer any messages at around 9 o'clock in the evening. I always tell my students: don't disturb me at that time".* (PB5)

Due to connectivity being lenient and infrequent, professionals generally do not mind being connected every now and then. Academics reserve some personal time during which they perceive work communications as disturbing, such as late at night. It was found that many academics remain connected to adhere to urgent matters. However, urgency can be interpreted differently from one individual to another, leading academics to receive communications regardless of urgency. For example, PB12 shares:

> *"I don't want them to feel hesitant to communicate with me because I do want them to communicate if they have concerns. I don't know what is urgent for them, so it is difficult to evaluate what is urgent for them and what is urgent for me. I do sometimes ask them not to communicate after a specific hour, but I don't tell them only communicate with me regarding urgent issues because urgent can be interpreted differently … For me I am always available. I regularly check my email and WhatsApp. I am constantly alert to these communications and this is ok - but not during the weekends because you need to give yourself a break".* (PB12)

Academics sometimes receive communications that they do not perceive as urgent. They do, however, leave the door half-open in preparation for urgent communications when they arise. Academics also allocate some personal time outside working hours. This can either be for themselves or their families, such as after a certain time of the day, or during the weekend. PB7 is an expatriate who lives by herself and does not mind infrequent communications during the week, but is annoyed if communications take place at weekends. She says:

> *"During the week I have no problem of being contacted, anytime. I feel responsible. But during the weekends I like to relax, travel, or pamper myself. Communications during weekends create displeasure".* (PB7)

Although sometimes work connectivity can cause displeasure, this does not happen frequently. Academics therefore do not have an urge to close the door entirely or exercise effort in managing connectivity. For example, PB1 is a lecturer who expresses her openness to communications with field training students, describing communications as an 'isolated part'. She says:

> *"Towards the end of the field training sessions, they (students) have got to write a report and most students are not comfortable with that part … During that time, they will communicate with me. Not that all of them will communicate during the weekend, but some will. Communication is throughout the week, whether during*

> *the day or after. So again, that part - it's just an isolated part, I think. Because if you consider that the semester is 16 weeks, and then in one weekend you get some requests, I think it's manageable".* (PB1)

As the comments above illustrate, academics do not seem to mind work connectivity. They do not view it as a major issue; rather, infrequent communications from both students and colleagues are generally accepted. Academics do not necessarily invite communications outside working hours, but also they do not mind receiving them. For example, PB4 is a national lecturer who, despite her explicit preference of segregation between personal and work domains, indicates how her mobile number is available to those who need it. She says:

> *"I don't make the effort of taking other people's number or giving them mine, except for the informal relationship that I have with some of my colleagues. If someone calls me, I make sure I save their number, because I may need it one day. No one has ever asked me for my number for the purpose of communication outside working hours; we don't exchange numbers for that purpose, but if someone needs someone's number they can get it. My number is not confidential, it is available".* (PB4)

Academics may or may not share their mobile number with others, but if a colleague calls, their call is welcomed. Welcoming communications from colleagues outside working hours is most probably due to these communications being infrequent. As PB6, an assistant professor, explains:

> *"I think my colleagues are very good. No one disturbs me; they only call when it's urgent and very important".* (PB6)

Leaving the door half-open can also be attributed to the social norms prevalent in Hudson. For example, PB1 is an expatriate academic who has been working at the university since it was established. She indicates that not responding to communications is unprofessional and rude:

> *"If a colleague communicated about a work issue, and they know it is after work, I think they will use their logic ... If they really call you, it means something is urgent and I think it would be rude to stick to saying this is my time, I will not receive calls after a certain time".* (PB1)

As the quotes above illustrate, academics keep the door half-open, allowing room for urgent communications while preserving some personal space. While academics tend to welcome communications, they sometimes impose explicit guidelines regarding when

they prefer some private time, most commonly with students. While communications with colleagues can also cause displeasure at certain times, academics do not establish communications rules among them. Rather, they tend to keep these communications to a minimum, restricting communications outside working hours to urgent matters.

8.3.4 Postponing Action

Postponing refers to the practice of delaying action required on receiving the communication, such as delaying a requested review of a document or a search of an information review of a document. Academics usually postpone the action needed, but not the response to the message. Academics sometimes postpone action until few hours after receiving the message, or until the next working day. This depends on the nature of the requested task, such as perceived urgency and required time, and the technical features of the communication platform. While it is a general norm at Hudson that communications outside working hours only takes place for urgent matters, non-urgent communications do happen, during which the practice of postponing becomes useful. PB8 explains:

> *"If I know that it's not very urgent, I am not going to reply immediately. For example, a couple of days ago a member of the department sent me something and I replied that I will get back to you later because I am busy with other things. This was because I knew it could be postponed. But if it's urgent, I'll reply and I'll do my best".* (PB8)

Postponing action for non-urgent communications via mobile technologies can afford room to other activities the academic perceives as more important. Academics perceive postponing the action useful for minimizing the interruption of connectivity. Some kind of response is, however, expected on reading the message. PB1 says:

> *"Let's say something is required. I may be busy doing something. I at least respond, communicate: Okay how urgent is this? It is required 12PM tomorrow. I will try to do it in the morning before any classes. At least I have reached an agreement rather than just blocking the person and say, I will talk tomorrow".* (PB1)

While responding to the message is necessary, the task itself can be postponed. Postponing can be a result of being occupied with other activities. Postponing can also be attributed to the time the requested task requires. For example, PB8 is an expatriate

assistant professor who, although does not mind being accessible, does postpone tasks that requires time. He explains:

> *"It's fine with me; I can be contacted at any time. If it will take time for me to reply then I'll simply say, I'll get back to you later. But if it's easy for me to answer, for example sometimes my students ask me what is the format of the file, so I just access my file that I have a copy of on my mobile phone and then pass it to them immediately. But if it may take some time, such as programme specification or SSRP that I need to read, then I will say I will contact you later".* (PB8)

As the comments above illustrate, while the time the task requires can impact managing connectivity through postponing, the mobile device through which communications are received can also influence the practice of postponing. This includes the availability of resources on the device, as illustrated in the comment above. Postponing actions rather than responding immediately can be attributed to the portability of mobile phones, specifically the immediate response afforded by the increased portability of mobile devices. For example, PB4 is a national academic who prefers segregation between work and personal time. Although she does not open her work email at home, she responds to messages received on her mobile phone as soon as she sees them:

> *"I will not make the effort of opening my university email outside work. If she [departmental head] sends me a WhatsApp or a text message and the device is in my hands, I can respond; it does not require effort".* (PB4)

Being at hand, mobile phones afford effortless communications, facilitating easy access to messages and minimizing the need for postponing responses. Seeing the message and not responding is more feasible for communications via emails. However, this becomes problematic when communications are conducted over technologies that enable the receiver to identify when the message was received or read, such as on WhatsApp. Specifically, while being connective is unexpected, academics are constrained by the expectation to respond on reading the message. PB1 explains:

> *"If you see it you would be able to respond. There is a difference between not having checked and you don't respond. And having checked and you clearly decide not to respond … if the person has an idea that you've blocked them, I think it's not a good feeling*". (PB1)

Academics postpone action but not the response itself because doing otherwise can create feelings of displeasure. For example, PB9 is a national academic whose two daughters

occupy most of her time outside work. She refers to the annoyance her colleagues experience when she does not respond to their messages:

> *"Usually people will be angry if I don't respond to them … I think it's a personal choice; if it is not important I should not respond. I do this for both email and WhatsApp. I don't mind if people get angry because usually they ask me about unimportant questions or information".* (PB9)

While not living up to the expectations of colleagues might be ok for some academics, others perceive some kind of response as the norm. For example, PB15 is an expatriate who shares the same mobile phone with members of her family. She gives an account to an incident when a message sent to her was marked read despite having not seen it. She shares:

> *"I remember one of my colleagues, she sent me a message and I hadn't seen the message. It was one of my children (she is 6 years old), maybe she checked the message but did not tell me about that, so I did not see it. That was on my work phone, and when I came the next day I saw the message after I had already seen that lady. We spoke about that topic and then I saw her message where she already talked to me about that. And it feels awkward, that I have missed something that I should have replied to two days ago".* (PB15)

In the instance above, the identifiability of the mobile phone (i.e. the potential to associate a mobile device to a single individual) can leave academics with pressure to respond on reading the message. Despite the fact that PB15 shares one mobile phone with members of her family, she still felt obligated to respond to read messages, describing not responding as an awkward situation. This is because others attribute that number to her and are made aware when their message has been read. A read message with no response can imply the ignorance of the person to whom the message has been sent, creating an unpleasant feeling.

Overall, the practice of postponing is generally acceptable in Hudson for non-urgent communications. Not practicing postponing is perceived to have a negative effect on individuals. This is illustrated by the comment of PB6, an expatriate living on her own and to whom work is a number one priority. She describes how her constant connectivity outside working hours impacts her negatively:

> *"I have not tried anything to stop these communications. I don't even postpone them. When they call I answer them and try to help them. I know it is not*

> *appropriate; I am doing something bad for myself. But… you see I don't want to kill their enthusiasm".* (PB6)

The practice of postponing can facilitate connectivity management. This practice can give room to activities that academics perceive as more important. Responding while postponing action can also help overcome any displeasure the sender may experience if his message had been ignored. This practice can be influenced by the task itself, and the affordance of technology through which the message is communicated.

8.3.5 Connectivity and the Individual Differences

Academics' views towards connectivity can ultimately shape their connectivity management practices. Connectivity outside working hours can be perceived as an enabler for collaboration. Work connectivity can also be perceived as a burden to personal time. Different views towards connectivity were found to be contingent on individual differences among academics, such as their individual context and values on which they thrive, or the work for which they are responsible. Academics who feel passion for their profession and/or their organizations are less likely to be bothered by communications outside working hours. Such views include feelings of loyalty and the importance of helping others. Some academics can sometimes make themselves available for any communications that may arise, even when they are not expected to. For example, PB7, an expatriate deputy chairperson working at the college for six years, describes her feelings of loyalty by saying:

> *"It is the feeling of loyalty, the feeling that I am connected to the college ... when the need arises, I should be there, even though I may not be expecting communications ... I feel love to the university, and passion for what I am doing".* (PB7)

For academics who feel love and loyalty, connectivity via mobile devices affords acceleration of work accomplishment, positively influencing overall organizational performance. PB6 is an assistant professor who has been working at the college for eight years, and whose feelings of loyalty triggered a leadership position towards the introduction of five new degree programmes. She says:

> *"If one of us is not going to take the lead and push, it's not going to happen at all … I like to see things moving and progressing. I see when I am here in the department this is not going to be under my name, but while I was in the department we introduced five new programmes. So I think I am part of the*

> *success story ... [Hudson] is not saying it is mandatory. It is not saying you should do all of this. I can say no, I can delay the submission day and extend my deadlines. Nobody is going to come punish me or anything. But two things will happen. First, the department progress will surely be affected. The second point, they may not consider me for any work".* (PB6)

As the quote above illustrates, PB6 views connectivity as an enabler for organizational achievement. Her connectivity was mainly triggered by personal desire for the achievement of organizational success, rather than the fulfilment of required tasks. Academics' personal values can influence how they perceive communications outside working hours in many ways. For example, PB10 is a national lecturer who views communications as an opportunity for helping others. Having this attitude in mind, she makes no distinction between spatial and temporal attributes of such communications:

> *"I believe that when you can help someone at any time you have to do it, whether related to work or not. If you can help a student, do it at the time. If you can help a faculty member do it, why not, inside or outside the college. I don't have a problem with the communication".* (PB10)

With such positive perception towards connectivity, mobile devices represent an affordance for the facilitation of positive communications. Some academics manage connectivity based on an assessment of the needs of students. For example, PB16 is an expatriate academic in the interior design department whose comment describes mobile devices as positively enabling connectivity outside working hours:

> *"My number is available to all students because I have displayed it in the syllabus, so they can all call me if it is urgent … In the syllabus, we are required to give the extension number for our offices … but my personal number is there because outside working hours, let's say if they have submission, or they have something to ask related to the exam, they cannot contact me after 3 o'clock on the office number. They may contact me by email, but I am not sure if I will be available and have Internet connections or not. So they can contact me through my number".* (PB16)

Some academics believe that engagement in work connectivity can help improve the learning experience of their students. Some also prefer to conduct communications over platforms that are preferred by students. PB16 adds:

> "*We know the younger generation is more into mobiles and these things... these things are faster, and it will assure that they will get the message because it's handier for them to check it on the mobile. They are more into Twitter, social media, and WhatsApp, so their response is faster".* (PB16)

With positive attitudes towards connectivity, mobile devices are viewed as an opportunity for providing help to others. Many academics tend to engage in communication platforms preferred by students, caring less about their own preferences. On the contrary, with a negative perception towards the connectivity afforded by mobile devices, academics view communications outside working hours as a burden that needs to be tackled. Some academics perceive connectivity as an undesired extra effort, and thus attempt to alleviate such communication when possible. For example, PB9 is a national teacher assistant and a mother of two young children. She views connectivity enabled by mobile devices as a generator for additional work during personal times. She says:

> *"I don't like communication outside working hours and we have so many tasks we can finish them during work hours. I don't like them; I work more than what I am paid for but we have so many tasks so we have to communicate".* (PB9)

Academics are found to respond to connectivity differently. Their perceptions of the need to manage connectivity can be influenced by their values and perceptions towards communications outside working hours. This is also influenced by how they perceive the accessibility enabled by mobile devices. Such differences can sometimes create pressure on academics whose preferences are different from the majority of academics. For example, PB19, a national academic who opposes open communications with students, shares:

> *"We faced problems because teachers have different personalities: some teachers are okay and others are strict. So some teachers may make students' life easy and then when they come to me they are asking me why are you doing this and that … in general I try to be me and remind my colleagues about this … if communications are open, students may ask unimportant questions or things that could be delayed for later. I like to put limits. Everything should be professional. So I do tell my close colleagues to do it this way and be formal when communicating with students".* (PB19)

Variations among academics do not only influence how they manage connectivity, but can also create a certain expectation towards responsiveness to communications outside working hours. This expectation can pressure academics in how they engage with and respond to connectivity. Academics who prefer to set limits to communications with students outside working hours can be compared with other academics who are more open to communications.

In addition to having different values and perceptions towards connectivity, academics' connectivity management practices are also influenced by *the nature of their work responsibilities*. The nature of work responsibilities can vary based on several factors, including the academic's position, assigned tasks, and availability of substitutes. For example, PB21 is a departmental head who accounts responsibilities associated with his position for the need for communications. He explains how having a different role may alter how he currently perceives work communications:

> *"Given my role as a chairperson, I think communications are very important. Probably when I leave this position I will not like it. This is because I need to do things elected to my role now and I know how these things are important. But people who I communicate with, they might not be very happy when I call them saying why you didn't send that document or what is happening. But for me, this is ok because I know there are deadlines".* (PB21)

As the comment above illustrates, the perception towards the urgency of communications can influence how academics view and respond to work connectivity. Being accountable for accomplishing tasks on time, connectivity via mobile devices can facilitate the achievement of tasks by the allocated deadlines.

In addition to the academic's position, the tasks assigned to academics can also influence their perception towards connectivity, as well as their practices and preference regarding optimal methods for communications. For example, PB15 is a lecturer responsible for supervising students on their field training. She explains how her preference of platform for communications with field training students is influenced by the nature of task:

> *"I use a combination of methods: emails if I have to send a document, or if I receive their documents and need to comment on their report. But for short messages, like availability at a certain time, or if she has a simple question about making her report, or if we need to settle a time for the visit, we usually use WhatsApp. It is better to work in a group because I prefer to go out from the campus only once, and try to finish all 4 or 5 students in one day. Sometimes they are at the same company, and sometimes they are not. So this really helps".* (PB15)

Academics preference and perceptions of optimal communication platforms can vary based on the task. For example, while emails are preferred for sending and receiving documents, IM groups can facilitate instant coordination when multiple parties are involved. Specifically, WhatsApp groups enable PB16 to engage multiple students at once when scheduling field visits. This platform, although informal and not preferred by

many academics, afforded PB15 the ability to conduct her task in less time and taking less effort.

Academics' engagement with connectivity was sometimes justified by the lack of substitutes. Specifically, in the absence of a cover for an academic's responsibilities during periods of their absence, the academic felt obligated to engage in connectivity despite individual preference. For example, PB9 is a national academic responsible for handling the Student Information System. This system requires knowledge and training for processing course registration requests. Academic PB9 handled requests from both students and other academic colleagues within her department at the beginning of each semester. She describes the difficulty she faced during a specific time when a personal issue coincided with the registration period. She says:

> *"At the beginning of the semester my grandfather passed away and this was during the registration week, the first week of the semester. This was during the days where people gathered for condolences; I came to the college and I tried to register as many students as I could. At home I was also dealing with so many requests to add this course and remove that course. Also, another colleague was making so many requests; I tried my best but it was a stressful time. It was only one week and I needed to register all students in that week, I couldn't delay this".* (PB9)

The lack of substitutes can leave academics with pressure to engage in work communications regardless of their preference. PB9's engagement with work connectivity during the days of condolences when her grandfather passed away was therefore justified by the urge to fulfil her job responsibilities. Knowing that this task could not be delayed or performed by others in her department, she felt obligated to engage in communications, despite the difficult time she and her family were going through.

8.3.6 Material Agency

Emails were found to be the dominant platform for communications at Hudson. Communications can sometimes be conducted via additional platforms, such as IM and phone calls. Each of these platforms affords capabilities that influence academics' preference for communications outside working hours. For example, emails afford a formal documented method of communications, which many academics perceive as

important. PB7 is a deputy chairperson recognizing email communications as the preferred platform for communications:

> *"Emails are for documentation because phone calls are hard to track … even WhatsApp messages are not formal. It is only for chatting".* (PB7)

Emails are commonly used at Hudson and it is the main platform through which academics expect communications to be conducted. PB7 elaborates on the comment above by referring to an incident of a misunderstanding between a faculty member and a student in which a third party intervention was required to assess the situation. She described that conducting communications via phone has made it difficult to assess the situation based on a call log.

Many academics use emails on their laptops. With the main platform for communications, i.e. the email being used on laptops, academics are less likely to open their emails outside working hours, and are therefore less exposed to connectedness. Other communication platforms, such as phone calls and IM, can therefore afford more accessibility. This is because calls and IM are channelled through mobile phones, rather than via laptops that are bulkier, constraining mobility. Communications sent over phone calls and IM can afford a faster response and are therefore sometimes utilized outside working hours. Due to the lack of documentation or the perceived informality of these platforms, they are usually used for notification purposes. PB5 is a lecturer who does not usually check her email outside working hours unless she receives a notification through another platform. She says:

> *"During weekend if someone, for example the boss, needs you and you need to answer, she will call, please check your email, I need something. Ok, so that's the time I will check".* (PB5)

As the quotes above illustrate, emails are dominantly used because they afford documentation and are perceived as a formal method of communication. Emails are usually utilized on laptops, which academics do not make themselves connected to. The synchronization of emails on laptops is because emails allow the ability to attach documents, most of which are stored, read, and edited on laptops when at home. However, in some situations, communicating urgent matters can take place via less formal channels, such as phone calls or IM. For example, PB10 is a national lecturer who communicates with her colleagues via less formal channels. She perceives the use of emails on the laptop

as a hassle, referring to faculty members to whom she communicate with as ‘her friends’. She says:

> *“Outside working hours I communicate with the faculty members, my friends, if we need something urgently they can call. This is because we don’t really check emails after work. I do receive emails from a Hotmail account and from a G-mail account, but for the college we do not have such applications. If I would like to check my work email, I have to open the website of the college and then access my email account from there. If we have something urgent after working hours, we communicate by mobile, via phone calls or WhatsApp”.* (PB10)

Work communications can be conducted via less formal platforms that offer ease of access and use, but not necessarily documentation. Phone calls and IM are perceived to be acceptable as the platform for communications with others to whom the academic share a social, rather than a primarily professional bond.

As the quotes above illustrate, the properties of communication platforms can influence academics’ preference for communication channels. They can also dictate the general norms regarding how communications are conducted outside working hours.

8.4 Onward

In this chapter, I have presented the findings from the second case. The findings of this case illustrate the significance of work arrangements for facilitating the management of connectivity, such as acknowledgement of shared norms and expectations of temporal and physical space of work. The findings also illustrate the significance of the individual and organizational context in which connectivity is enacted. The findings also confirm the findings of the previous case regarding the role of the interplay between the social and the material for connectivity management practices. In the next chapter, I look more closely at the themes from the two cases and present a cross-case analysis to synthesize the findings towards answering the research questions.

Chapter 9: **Cross-Case Analysis**

9.1 Introduction

In this chapter, I synthesize the themes from the two case studies in my quest to reach an in-depth understanding of connectivity management in relation to academics' practices, and to specifically answer the research questions. This section is arranged into two parts. The first part synthesizes the themes related to the first research question, i.e. how do academics manage work connectivity in the presence of mobile technologies? The second part presents a synthesis of themes towards answering the second research question, i.e. what parameters shape connectivity management practices?

9.2 Connectivity Management Practices

Academics employ a range of different practices when dealing with connectivity outside working hours. Three themes relevant to connectivity management practices were developed in Case A: material segregation, grouping, and classification. Three themes were relevant to connectivity management practices in Case B: material segregation, the half-open-door strategy, and postponing action. On combining and synthesizing relevant themes from the two case studies (summarized in Table 9.1), three connectivity management practices were developed:

- the practice of segmentation;
- the practice of prioritization;
- the practice of distancing.

Academics may enact each practice either on its own or in combination with another practice. These practices are represented in Table 9.1 in relation to the themes developed from the two case studies. Next, each practice will be described and supported by sample quotes.

Table 9. 1: A Synthesis of Connectivity Management Practices

Research Question	Case	Theme	Description	Rationale	Practices
RQ1: How do academics manage connectivity outside working hours in the presence of mobile technologies?	Springfield	Material segregation	Owning two mobile identifiers in two mobile phones	• Maintenance of privacy • Segregation of work and personal communications • Management of engagement with connectivity	Segmentation, Prioritization, Distancing
		Grouping	Grouping IM contacts with similar attributes or responsibilities. The assignment of a mediator for communications	• Centralization of point of contact • Minimizing disturbance of multiple one-to-one conversations • Time management	Distancing
		Classification	The evaluation of communications based on a combination of when and how they take place, what they are about, and who they are from	• Evaluation of communications to engage accordingly • Connectivity via preferred communication platforms	Prioritization
	Hudson	Material segregation	The engagement with routine work communications via a specific platform (e.g., emails), or a specific device (e.g., laptop)	• The selection of appropriate device based on technological affordances and own preference • The filtering communications based on urgency	Segmentation, Distancing
		The half-open-door strategy	The welcoming of communications while maintaining some personal time	Giving room for urgent communications while preserving some personal space	Prioritization
		Postponing action	The delay of action required on receiving communications	• Giving room for activities academics perceive as more important • Minimizing work interruptions	Prioritization

9.2.1 Segmentation

Segmentation refers to the technological separation between work and personal communications. The practice of segmentation affords academics some separation between work and personal domains through the establishment of a technological boundary between work and life communications. This is achieved by conducting work communications on a specific device, such as the dedication of a second mobile phone for work. Academics can also segment communications by conducting communications via a specific platform, such as the work email. The separation of work and life communications enables academics to differentiate work communications from personal ones. Differentiating work from personal communications enables academics to identify work communications and manage them accordingly. PB20, a department head at Hudson, shares:

> *"It's more convenient to separate personal things and official things. These days a smartphone allows you to do that most of the time. During invigilation I expect any supervisor or invigilator to call me, I am on call. I expect something from the college, but do not expect calls from family members ... After office hours I don't check my email, I do not check it after 3:30p.m. My phone is there for emergency issues to be addressed. During examination time, if my phone rang at 6:30 at the morning and it is my office phone, it is like an alarm for me that there is something in the college that I have to respond to. I cannot otherwise make a differentiation whether it's coming from a family member, a friend, or the college. I have two different ring tones for each number so that I can recognize where it is coming from. It is very important to recognize so that you can prioritize".* (PB20)

Conducting work and personal communications via two separate devices facilitates academics' segmentation of work and life domains. This separation allows academics the convenience of conducting communications within their designated domain. Specifically, the technological boundary allows academics to identify channels through which work communications may arise. The identification of channels through which work connectivity takes place can facilitate academics' management of connectivity. It affords academics the management of whether and when to engage with work communications outside working hours.

Segmentation also enables academics to manage work connectivity through the prioritization of work communication during specific critical periods, such as during exams. It also allows academics to distance themselves from communications during routine work days. PA11, an assistant professor at Springfield who delivers distance

learning courses, illustrates how the segmentation of work and personal communications allows him to be selective regarding when to engage with communications with distance learning students outside working hours. He shares:

> *"The work phone is completely closed outside working hours. I completely ignore it and don't even charge it ... The work phone is for office hours only. If there is an emergency I can engage with the phone. For example, during the exams, I keep the phone with me 48 hours before the exam, and the students have good evaluation for me in regard to responding to their queries. I do this as an extra during exams; I can respond to WhatsApp. I check my phone daily every 6 or 8 hours. Other than that, I don't bother myself, they have office hours and I respond to all emails".* (PA11)

The separation of work and personal communications can support academics in their decisions of when to engage to work communications. It can also afford academics temporary periods of disconnection from work without compromising social communications. For example, PB5 maintains the privacy of her personal mobile phones by utilizing another device for the exchange of work emails:

> *"The one that is synced with me is my private email, I don't sync the Outlook that we have here, no ... because we have also laptop at home, yeah they provided us with a laptop, and for me.. no, that's only for private email. That's why I told you to contact me on my private email, because it's the only one that's synced to my phone".* (PB5)

The separation of devices through which work and personal emails are accessed can minimize the disturbance of communications. By not synchronizing the work email to a personal mobile phone, academics can be afforded distance from work connectivity. Segmentation facilitates academics' management of work connectivity in several ways. It affords academics the identification of channels through which work connectivity can take place. This can facilitate other connectivity management practices. For example, segmentation enables academics to prioritize work communications during the periods they perceive as important. Segmentation can also afford academics the ability to distance themselves from work connectivity while remaining closer to social connectivity on other platforms. The practices of prioritization and distancing will be introduced next.

9.2.2 Prioritization

The practice of prioritization refers to the practice of managing connectivity based on an evaluation of work communications. This allows academics to filter communications and

consequently respond, postpone, or ignore these communications. Prioritization can be based on a variety of criteria; these include the perceived importance of the task or the time-period at work. For example, academics are more likely to engage with connectivity during periods that are generally recognized as important, such as for answering students' enquiries during exams, or for finalizing documentation during the audit period. For example, PB20 explains her management of IM messages through the postponement of non-urgent communications to the next working day. She shares:

> *"If it's important I would reply, but otherwise I wouldn't. This lets them know that this should be done during office hours. Most of the time my replies would be ok send me an email, remind me, or something like that, but I don't answer them because this is outside working hours. If I don't feel that this should be addressed immediately, I will ask them to contact me during office hours".* (PB20)

Prioritization enables academics to minimize the disturbance of receiving work communications during personal times. By evaluating the perceived importance of the content, academics are able to be selective in responding to, or postponing, communications they receive outside working hours. Academics' prioritization of communications can also be attributed to additional criteria such as the source of the message, or the perceived value of response. For example, PB12 is a national lecturer who has been working at Hudson for less than one year. To facilitate communications, she shared her personal number with the students she supervises on their field training.

> *"Sometimes this literally takes me away from my family time at my free time. But sometimes I think it is helpful for clarifying issues for my students and colleagues. So it is helpful anyway and also stressful. For example, one student called me on Friday evening. I was sitting with my family and I excuse them and replied to her. She was asking if she can postpone her weekly report because her Co-op supervisor is on leave. This was on the weekend but receiving a call from a Co-op student I thought she might have a problem, so I had to answer. But she could have sent an email to ask whether she can postpone her weekly report".* (PB12)

Many academics recognize the effect of work communications on their personal time, and thus engage when they perceive they should. For example, as the quote above illustrates, PB12 intentionally responded to a communication at the weekend. Her response was justified by the source and method of communication, based on which she predicted the importance of the message. On realizing otherwise, she indicated her annoyance at the communication. She shared her preference for non-urgent

communications to be conducted via other platforms, specifically email, which she does not monitor regularly outside working hours.

Prioritization enables academics to minimize the disturbance of receiving work communications during their personal time. This is accomplished by prioritizing communications based on the perceived importance or urgency of the communication. They are less likely to respond to a communication when they perceive it to be of less importance compared to the *status quo*. This enables them to adhere to their professional responsibilities while considering the importance of social and personal time.

9.2.3 Distancing

Distancing refers to the practice of varying exposure and/or engagement with existing connectivity. Academics can be exposed to various possibilities for connectivity. They sometimes manoeuvre vast possibilities for connectivity by placing connectivity in the background, or by dimming certain possibilities of communications. For instance, academics might communicate through groups to dim multiple one-to-one communications. Some academics also assign a mediator in an attempt to dim possibilities of connectivity with a specific network, such as communications with groups of students. PB17, an expatriate lecturer, perceives such communications to be easier than one-to-one conversations. She shares:

> *"With groups, it is easier to communicate, because if one student asks a question, the answer or the reply would be shared with everybody, and everybody will get the same message".* (PB17)

Distancing oneself from connectivity can minimize the negative implications of excessive connectivity. Distancing can also be achieved by placing connectivity in the background. This can minimize distractions of work connectivity and enforce academics' sense of management. For example, some applications, such as emails and IM, require Internet connection and are unable to deliver messages in the absence of the Internet. Academics may therefore obstruct connectivity by turning off Wi-Fi on their devices. By obstructing these communications, academics can temporarily distance themselves from routine connectivity. PA3, a lecturer and a mother of five, shares:

> *"If I want to write an exam and wanted to be focused without distractions, I turn Wi-Fi off. And if I feel that the phone is causing me distractions, I put it on silent*

> *as well so that I can finish my work ... When the babies are sleeping, I close the Wi-Fi and go to sleep".* (PA3)

The practice of distancing is in many cases afforded by properties of mobile phones. As the quote above illustrates, this includes the ability to adjust the phone settings by turning off Wi-Fi to remain distant from email and IM communications. Mobile phones also afford the possibility to silent notifications for communications, such as when receiving a phone call, which many academics perceive as useful for overcoming distractions. The segmentation of work and personal communications can also afford academics the ability to distant themselves from work communications. For example, PB15 is an expatriate who shares one phone with members of her family and dedicates another number for work communications. She maintains distance from work communications by infrequently monitoring her work phone outside working hours. She says:

> *"I have my own time when I check my phone. It's not like I keep it with me 24 hours a day. They can approach me, and regardless of the time, I will see it when I want to. This is for the work phone because for all other personal communication I have a second phone".* (PB15)

Distancing oneself from work communications can enforce academics sense of management regarding when to engage with work communications. This is facilitated by the segmentation of work and personal communications. Distancing can also takes place in the absence of segmentation as enabled by the affordances of mobile technologies. This includes the ability to block or reduce certain possibilities for connectivity, for instance by minimizing one-to-one communications or by turning off Wi-Fi.

9.3 Parameters of Connectivity Management Practices

Academics' connectivity management practices were shaped by a variety of factors. To synthesize these factors, relevant themes from both cases were identified. Three themes were most relevant in Case A: classification, managing connectivity within a context, and the contingent affordances of platforms. Four themes were most relevant in Case B: working day is sufficient, postponing action, material agency, as well as connectivity and individual differences. On the synthesis of relevant themes from both cases, along with their sub-themes, four parameters were developed to capture the bigger picture of factors influencing connectivity management practices. This analysis is presented in Table 9.2.

Table 9. 2: A Synthesis of Parameters of Connectivity Management

Research Question	Case	Theme	Sub-theme	Parameter
RQ2: What parameters shape connectivity management practices?	Springfield	Classification	Who	Situational/Contingent
			What	Situational/Contingent
			When	Situational/Contingent
			How	Technological
		Managing connectivity within a context	Group norms	Organizational
			Individual context	Individual
		The contingent affordances of platforms	Possibilities for connectivity management	Technological, situational/contingent, individual
	Hudson	Working day is sufficient	Working hour arrangements	Organizational
			Intensity of communications	Organizational, situational
			Urgency	Situational/Contingent
		Postponing action	Nature of task	Situational/Contingent
			Feature of communication platform	Technological
		Material agency	Platform capabilities	Technological
		Connectivity and the individual differences	Individual values	Individual
			Nature of work responsibilities	Situational/Contingent

Academics' connectivity management practices were found to be influenced by the following parameters:

- organizational parameters;
- individual parameters;
- technology parameters;
- situational/contingent parameters.

These parameters are summarized in the following sections.

9.3.1 Organizational parameters

Organizational parameters represent characteristics unique to the work environment, and beyond the control of a single individual. This includes working hour arrangements, intensity of connectivity outside working hours, and group norms. Organizational norms and practices play a noticeable role in academics' management of connectivity outside working hours. For example, variations in working hours' arrangements, as well as the intensity of communications within the organization, can influence how professionals perceive and react to work connectivity. The extracts below illustrate the influence of organizational working hours' arrangements on the expectations of connectivity outside working hours. PA11, an expatriate assistant professor working at Springfield on a flexible working schedule, shares:

> *"We chose the wrong occupation, teaching. It is embossed on us. If time goes back, I will choose to work in the field, I would work in a company or in a bank. When I go home, I would have been entirely disconnected from work. I would not have to deal with anything related to work ... But it is too late now. I am ok. There are people who do not even have a job".* (PA11)

Flexibility can mandate academics to remain flexible when it comes to their work communications. Academics are therefore expected to respond to and engage with work communications any time of the day, regardless of their individual preferences. On the other hand, a fixed schedule, such as at Hudson, can allow academics sufficient time to conduct most work activities during a specific time frame, minimizing the expectations for engaging in connectivity during personal time. PB18, a department head at Hudson, perceives the fixed working hours' arrangement as ideal. She describes:

> *"For a working woman, I believe that life is very direct and far away from depression and sickness and all these things. As teachers, we have a set schedule. Every day I will wake up at a specific time in the morning so that I can pray,*

> *prepare breakfast, then get ready for college. Time management is very important. When I leave work, we have a walk and then we would have dinner around 7:00p.m. I call teaching an ideal profession because we have a time limit. We are not sitting at a desk until 8:00 o'clock. … Colleagues know these limits so they don't force us to reply outside working hours or during the weekends. If someone sends an email at the weekend, they would know somewhere in their subconscious mind that they will only receive a reply on Sunday. This is the practice here".* (PB18)

On the one hand, a flexible work schedule can diminish the boundaries between work and life, rendering work communications outside normal working hours to be the norm for fulfilling the job requirements. With flexible working hours' arrangements, academics feel obligated to endorse such flexibility in their work communications. The term 'outside working hours' did not make sense to many of the academics at Springfield who expect to respond to communications in their daily routine. On the other hand, a fixed work schedule can signal temporal limits for work communications. These limits provide academics with a specific time and place as the norm for carrying out work responsibilities. Communications outside these limits were generally viewed as 'urgent', 'infrequent', and 'not harmful', and are dealt with accordingly. For example, PB23, who has been working at Hudson for 10 years, acknowledges the possibility for communications outside working hours, but does not mind such connectivity.

> *"Communications outside working hours are insignificant, very rare. Personally I don't see any problem with that; I consider it as an efficient way of doing things. I will not, for example, refrain myself from accepting calls related to work outside working hours".* (PB23)

At Hudson, communications outside working hours are normally restricted to urgent matters, and are thus infrequent. Due to the low intensity of connectivity, academics view connectivity management as trivial and insignificant. They welcome the infrequent urgent communications, and exercise less effort when it comes to the management of such connectivity.

In cases where academics report high intensity of connectivity, connectivity management was viewed as a need that has yet to be obtained. For example, PA15, an associate professor at Springfield, illustrates how his management of work connectivity is constrained by the shared norms within the workplace. He explains:

> *"You may be able to set regulations for students but not for the chairperson for example. Change cannot be made by a single person; it's the workplace*

> *environment that must be changed. Every culture of the workplace is changed and things may get better, but a change from my side only is not going to be effective. If I refused an asserted method of communication, this could lead to the dissatisfaction of the other person, especially if he was higher than me in the hierarchy. So I am always thinking, how can I change the communication channel without clashing with this reality".* (PA15)

Organizational policies and norms can dictate academics' management of work connectivity. For example, this includes policies regarding working hours' arrangements, and the norm of intensity of connectivity. Academics' management of connectivity is therefore enacted within the specific conditions of their work environment.

9.3.2 Individual Parameters

Individual parameters represent attributes related to the academic themselves. This includes individual values (such as feelings of loyalty and the desire to help others), and the individual context (such as having children, or being an expatriate). Academics' perception of connectivity, and consequently their connectivity management practices, varied based on their individual context. This includes academics' habits from the past, or social responsibilities at present. For example, PA9 is an expatriate in her early 30s who has been working at Springfield for 2 years. She is involved in many community service activities, for which she does not mind conducting many communications at home.

> *"I like it this way. Since I was a student, I have been involved in lots of communications as I was the head of the student union at my university. So it is in my blood stream and I like it. You know when you grow up thinking that work and life are both on the same path, I consider them both to be on the same path so I don't feel there is any workload, really".* (PA9)

Some academics perceive connectivity as an element of their everyday life, rather than being a burden initiated by the workplace. This acceptance of connectivity was found to be an accumulation of past habits and activities. As the quote above illustrates, when the blurring between work and life domains is recognized and accepted, connectivity is also accepted. Instead of resisting such connectivity, it gets embraced as a natural part of life that runs in academics' 'blood stream'. PB18 is a departmental head at Hudson who checks her email at home, despite the absence of collective expectation for this behaviour. She justifies engagement with connectivity to her personal habits:

> *"Every day after going home and before going to bed I do check my work; it's a habit from childhood, check your homework, check her bag [laugh] so I do check my email before going to bed, it's an everyday issue for me. So I think that is a tendency that I have developed, so I wouldn't complain about it … you are not expected to reply. If you reply, it means that you are more active, but other people may not check; they would only check when they come to the college, so it's up to the personal attitude if someone wants to respond outside working hours. It is necessary to respond if you are at your office, but for me when I see an email I reply because maybe I would forget the next morning. The other person can then see my email the next working day".* (PB18)

While connectivity can be a response to work responsibilities and expectations, it can also be a result of an individual's habits and norms. With the lack of expectation for connectivity outside working hours, academics may endorse themselves in connectivity, rather than being dragged into it. Some academics dedicate a specific time to check work communications at home in their quest for preparation for the next working day. In doing so, connectivity becomes a planned event that facilitates the preparation of the next working day. Academics may therefore willingly engage with connectivity, rather than treating it as a disruption that calls for management.

Academics' management of connectivity can also vary based on their social responsibilities outside working hours, specifically through the element of time. Academics who have fewer social responsibilities are able to devote more time for work outside working hours. Their management of connectivity can consequently vary from how academics with escalating social responsibilities manage connectivity. For example, academics who are responsible for a family and children may see more pressure to preserve time outside work for family. PA6, a national lecturer, illustrates the role of her social status in her management of work connectivity:

> *"Time is important to me, and my social status plays a role here. I am not free. I think if I was not married, I would have welcomed communications, but I feel that I have a second life. As soon as I leave the college, that's it, I like to disengage. I mean I am ok with some communications, but I do not like frequent communications".* (PA6)

Academics' social status can influence how they engage with connectivity outside working hours. Specifically, academics sense of responsibility towards their family and children can create resistance to frequent work communications outside working hours. In the quest for reserving time for their families, academics can develop a preference towards the segmentation of work and life domains.

For academics with fewer responsibilities outside working hours, work communications can be less disturbing. Academics may not, therefore, exercise noticeable efforts to manage connectivity, either subconsciously due to connectivity not having a noticeable impact on their life outside working hours, or intentionally to utilize time for crossing tasks off their list and facilitate the accomplishment of escalating work responsibilities. It was also found that many expatriates, who have come to the country specifically to work, have a narrow social circle beyond their colleagues from work. They are therefore more likely to engage in connectivity and manage it as a normal part of their working life.

Having fewer responsibilities outside working hours may also be associated with an expectation of availability outside working hours. This can drag more work responsibilities on to the academics under the perception that they have more time outside work. For example, the effect of workload is most obvious in the responses of PB6, an assistant professor at Hudson. Being single and expatriate, she was allocated many tasks for which working hours were not sufficient. Compared to other colleagues in her department, she was assigned with noticeably more responsibilities not only at a departmental level, but also representing the college in city wide communities. While her colleagues describe communications as "very rare", for her it was "almost every day". She recognized that work communications may be annoying for some academics as it takes away their personal time. She does not mind engaging in work communications during her personal time. She explains:

> *"There is no personal life here so it is ok, except for eating and washing time. We don't have any personal life here, at least for me I don't have any personal life … we don't want to take others' time. Only when a task is assigned, we call them and trouble them".* (PB6)

The management of connectivity outside working hours varied among individual academics. This was attributed to academics' individual context as well as their perception of connectivity as a result of the accumulation of past habits and experiences. Viewing connectivity as a personal choice rather than a forced situation can create less resistance to work connectivity, meaning academics exercise less effort when managing connectivity. Individual variations also include academics' social responsibilities outside working hours. This can influence academics' preference towards the segmentation and integration of work and life domains, and consequently their connectivity management practices.

9.3.3 Technology Parameters

Technology parameters represent the capabilities of mobile device and digital applications that can afford or constrain connectivity management practices. For example, these include the always-on feature, and the multiple communication platforms afforded by mobile phones. Academics generally manage communications via the platform that saves time and affords easier methods for communications. Their management practices are thus influenced by the affordances of available platforms. For example, emails afford documentation, and IM allows instant communications. Laptops can facilitate the attachment and downloading of documents, and mobile phones are always-on and can afford effortless conversations. PA2 is an assistant professor at Springfield who is involved in the organization of several community service events. She is in frequent communications with various groups of people regarding these events or other academic responsibilities. She conducts communications via mobile phone, describing it as the easiest and the fastest platform for communications outside working hours:

> *"I use the fastest and easiest option. I have the mobile phone anywhere with me whatever I am, whether I am in the car or any place outside of my house. If I get an email from the department head, or from an academic colleague I am waiting to hear from, I will get a notification and I can open it anytime. So mobile phone is the easiest and the fastest".* (PA2)

Mobile phones afford portability and are always-on, making them an ideal platform for communications on the go. These devices also afford communications via several platforms, such as IM and emails. Many academics therefore channel their communications through mobile phones to facilitate communications, such as by syncing their emails on mobile phones. Mobile phones allow academics to manage connectivity during dead times, such as when in the car.

Mobile phones can also lack certain features, constraining connectivity management for some academics. This, for example, includes the ease of editing documents, or the feasibility for creating folders for organization. Other devices, such as laptops, can afford capabilities that facilitate the management of connectivity. Laptops are utilized by many academics as they afford convenience when dealing with attachments. PA10, a lecturer at Springfield, shares how conducting email communications via a laptop rather than on her iPhone can save her time:

> *"For Apple, you cannot create folders and arrange documents. So, if I download documents randomly, after a while it would be harder for me to know where the file for each student is …. And the other thing is transferring the files; as you know maybe, it's difficult for Apple to transfer things after they have been downloaded. So it would take longer for me to manage it … for example if my student sent me her presentation via email, I can download it, I can see it, but I cannot edit it. I want to download it then I'll put it in a specific folder for the class name, and it would take a long time in my opinion, and take from my space. So, laptop for sure".* (PA10)

Laptops may be preferred over mobile phones as they afford the feasibility for the organization and editing of documents. Laptops can also save academics time when responding to communications, such as when locating a specific file. While certain devices can facilitate academics' management of connectivity, they can also constrain their management. This was also found to be the case when it comes to the features of digital communication applications. For instance, WhatsApp can afford the exchange of instant and precise messages, which many academics perceive to be less disturbing than phone calls. The application can display the status of the message readability. This can leave academics with the pressure of an expectation of availability and immediate response. An email on the other hand does not normally display the status of readability, allowing a response at an academic's own time and facilitating the management of connectivity. PB22 is an assistant professor who prefers email communications for their affordances. He shares:

> *"Usually I prefer emails, even with students to make it formal. All work-related communications are through emails … I think everything should be documented so no one can turn things against me or deny … an advantage of emails is that you can delay it, but with a phone call the response should be up front … For emails, if you don't feel like doing it you can delay it for a while, but if I didn't answer the call it would be impolite. And on WhatsApp the person would know that the message has been read, but for the email the sender would not know if the email has been received or read".* (PB22)

Compared to phone calls and IM messages, emails are preferred by many academics. Emails afford a formal platform for communication that allows documentation of communications. Emails can also allow academics to respond to connectivity in their own time while overcoming the consequences of not responding to communications via other platforms, such as the feel of impoliteness when ignoring a phone call, or when not responding to a read WhatsApp message. However, communications via emails can sometimes be time consuming. Specifically, when a quick response or an immediate

action is needed, other platforms such as WhatsApp can afford instant communications and can therefore expedite work. PB1, a lecturer at Hudson, shares:

> *"I think with WhatsApp, the person is likely to respond quicker, such as if it is at the weekend. For me, if someone sends something through the email directly and they don't alert me in any way, the chance that I would not see it immediately is high. But if they send a message on WhatsApp, I have sent this document for you urgently, then I will be able to view it quicker".* (PB1)

The properties and capabilities of mobile devices and applications can either afford or constrain academics' management of connectivity. When a technology constrains academics' management of connectivity, they change the technology when possible. For example, this includes managing connectivity through exchanging emails with attachments via a laptop instead of a mobile phone. On the other hand, academics perceive technologies that afford them communications that take less time and effort as facilitators for connectivity management. Academics, hence, experience various affordances and constraints of mobile devices and applications, which ultimately influence their connectivity management practices.

9.3.4 Situational/Contingent Parameters

Situational/Contingent parameters represents factors specific to the present situation that can constrain or redirect academics' connectivity management practices. For example, these include the nature of the task (such as communications as part of teamwork), as well as the source, content, and time of the message. For example, PB23 shares a situation when he was an acting departmental head. While holding this position, he did not mind receiving communications at any time.

> *"When I was acting chairman, my chairman used to contact me at any time asking about situations in the department. I did not have any qualms about responding appropriately".* (PB23)

Academics sometimes engage with work communications with no concern about the implications of such connectivity or the management of it. This is especially true in situations where communications are perceived as legitimate and important. This is also evident when the intensity of work connectivity is normally low outside work, which was the situation for PB23. Academics therefore do not mind responding to such infrequent and important communications and view them as part of their responsibilities.

Academics are more likely to develop a need to manage connectivity when the intensity of connectivity is high. This is usually associated with workload or short deadlines that academics feel obligated to fulfil on time. In such situations, academics' management of connectivity can be constrained by the nature of the work. PA15 is an associate professor and a member of five different committees within Springfield. He describes the academic load as periods of ups and downs:

> *"Many times, with the committees we would have to complete tasks within a very short period. This creates pressure when it comes to time management and when it comes to managing communications regarding these tasks. An academic job is like a curve going up and down. During these ups and downs, we cannot control our time that much, and we cannot even control how we are being contacted. We become part of a* status quo *... If the call is from a student or someone I know will not be important, I would not answer; but sometimes the call is from specific people regarding specific tasks, not responding would affect the progress. I think it depends on the person as well, if he perceives the task to be important, he would consider the benefit of the group more than what is best for him individually".* (PA15)

Academics' response to connectivity can vary based on several factors, including the work tasks and source of the communication. As the quote above illustrates, academics experience workload as a curve going up and down. The ups of the curve represent peak situations where deadlines are approaching and the workload is intense. The downs of the curve represent routine days where workload is less intense. Academics can feel committed to engage with communications where not responding may obstruct the progress of teamwork. Their management of connectivity can therefore be constrained by the collective benefit of the group.

The source of communications can also be an indicator of the importance of the communications. For example, academics may postpone communications from students outside normal working hours. They may also recognize students' communications as important when an exam is approaching, and are therefore more likely to respond. For example, PA11, who has a separate phone intended for communications with distant learning students, explains:

> *"During the exam period, the work phone has priority. For two or three days before the exams, it takes priority".* (PA11)

Evaluating the importance of the communications based on the source is especially true for phone calls, in which a response must precede the message. Other platforms, such as

emails and IM, allow academics to read the communicated message prior to responding. This affords academics the ability to view the message and manage it accordingly. For example, PB22, who prefers work communications to be documented via emails and was asked about his practices in response to phone calls, believes:

> *"It depends on who calls. If the chairman calls, I really have to answer. But for a colleague, sometimes I do not answer. For me the chairperson or superior wouldn't call unless it is urgent. So I understand that they call because it is urgent".* (PB22)

The source and content of the communication can provide a foundation based on which academics vary their connectivity management practices. Academics are more likely to exercise their preference for managing connectivity when communications are from people at a similar level. Communications from superiors can indicate urgency of the message, and academics can therefore feel obligated to respond. In situations where the message is perceived as unimportant or regarding repetitive information, academics may postpone such communications to the next working day. For example, PA9 is a lecturer at Springfield who coordinates several community service activities in collaboration with students. She conducts most of these communications outside working hours.

> *"During working hours I am busy with lectures, and the students are also busy with their lectures. So I cannot pressure them, otherwise I will be affecting the academic performance for the student leading the activity and for all of the students with her in the team … I can respond up to six or seven hours after working hours, until 9 or 10p.m. for example. But after that I usually don't respond and leave it for the next working day. In some cases I get contacted after 10p.m.; sometimes I respond, and sometimes I don't, depending on what it is about. If it can wait, or if she can find the answer in our previous discussion within the chat, I don't respond till the next working day".* (PA9)

Connectivity can sometimes be perceived as essential for the accomplishment of the task. In such situations, academics sometimes shift the temporal boundary between work and life, extending the time they normally dedicate for work. For example, these include situations when time at work is not sufficient for discussions, or with the lack of clearly defined temporal boundaries. In such situations, academics engage with connectivity outside working hours to fulfil their teamwork responsibilities. They are therefore more likely to manage connectivity outside working hours when it takes place outside the newly defined temporal boundary.

Connectivity outside working hours can also be viewed as essential for fulfilling responsibilities of certain positions. For example, PB20, who has been working at Hudson for 11 years, only found the practice of segmentation to be useful when she was promoted to a departmental head four years ago. In her situation, the position opened vast doors for connectivity with groups inside and outside the college.

> *"I had it when I became a chair person. I have to have two phones because being responsible for admin work I need to have a communication channel published for stakeholders and faculties. It's like an email account that would be officially shared. Everyone in the college, whether the HR person or anyone, if they are going to contact me, they will contact me on this number".* (PB20)

The situation in which academics find themselves can influence their connectivity management practices. Connectivity management can, for example, take various possibilities based on the source, content, and time of the message. The management of connectivity can also be influenced by the nature of the task. In situations where academics have a lead role or are completing tasks as part of a team, responsiveness can be perceived as essential for adhering to job responsibilities in a timely manner. Connectivity outside working hours is also viewed as essential in situations where such communications are necessary for completing the task, such as during periods of workload or when time at work is insufficient for discussions.

9.4 Onward

In this chapter, I have synthesized and further analysed the combined findings from the two cases in relation to the research questions. The cross-case analysis allowed a wider conceptualization of connectivity management. This provided a bigger picture of connectivity management practices, contributing to an in-depth understanding of the topic. In the next chapter, I elaborate the discussion of these findings and highlight the contributions of this research.

Chapter 10: **Discussion**

10.1 Introduction

This thesis explored academics' connectivity management practices outside working hours in light of different mobile technologies, in addition to the parameters influencing these practices. The study drew on a socio-material framework, taking into consideration both social aspects (such as norms, policies, and perceptions) and material aspects (including physical and digital affordances of mobile devices and applications).

This chapter discusses the findings and contributions of the thesis and is divided into three sections. The first section addresses the question of how academics manage work connectivity in the presence of mobile technologies. It discusses the three identified connectivity management practices and highlights the contributions of the first research question. The second section addresses the parameters shaping the management of work connectivity. It discusses four parameters as key to connectivity management practices and highlights the contributions of the second research question. The third section illustrates the interplay between the social and the material in connectivity management. It also discusses theoretical contributions to the conceptualization of socio-material imbrications.

10.2 The Three Identified Practices for Connectivity Management

The first research question addresses how academics manage work connectivity in the presence of mobile technologies. Three connectivity management practices were identified: the practice of segmentation; the practice of prioritization; and the practice of distancing, which are in many cases complementary to each other. This section discusses these practices to illustrate the complexity of connectivity management not currently captured by existing literature (see, for example, Kolb, 2008; Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014). This section also highlights contributions to the literature, specifically to the literature on connectivity management and the literature on work-life boundaries.

Extant research conceptualizes work-life boundaries as the lines separating work and life domains, while promoting and/or constraining the way in which the two domains are related (Clark, 2000; Kreiner, Hollensbe and Sheep, 2006). The literature mainly

classifies work-life boundaries as temporal (representing the time for work), spatial (representing physical location for conducting work), or psychological (indicating when it is appropriate to conduct specific behavioural patterns) (see, for example, Clark, 2000). This thesis contributes to the theorization of work-life boundaries by revealing a new type of boundary, the technological boundary. Specifically, this study introduces *the practice of segmentation* to highlight academics' practices in technologically separating work and personal communications. The term 'segmentation' is inspired from previous theorizations on the segmentation (i.e. the separation or independence) or the integration (i.e. the minimum distinction) between work and life domains (Lambert, 1990; Nippert-Eng, 1996; Clark, 2000; Kossek and Lautsch, 2008). For example, Nippert-Eng (1996) suggests that some individuals establish boundaries between their work and their personal life to ensure the two domains remain segmented, while others construct boundaries so that the domains can be integrated. However, current conceptualization presents boundaries as being social, i.e. being formed and shaped by social aspects such as individuals' environment and social expectations (Nippert-Eng, 1996; Ashforth, Kreiner and Fugate, 2000; Clark, 2000). The term 'segmentation' utilized in this research extends previous conceptualization of work-life boundaries by highlighting material aspects. It illustrates the role of the technological boundary for facilitating practices towards the segmentation or integration of work and life domains. This includes academics' separation of the devices or applications on which they conduct personal or work communications.

Many academics conduct work communications on a specific device, such as by dedicating a second mobile phone for work. Academics can also segment communications by conducting communications via a specific platform, such as the work email. The technological boundary can afford the distinction between work communications and personal ones, facilitating the management of connectivity (for example, as shown on p. 144 where PB20 explains how owning two mobile phones facilitates the distinction between work communications and personal ones). This boundary can be a result of organizational norms and policies (such as when mobile devices are provided to professionals by their organizations). It can also be established and utilized by academics as a tool for the management of connectivity (such as when restricting work communications to emails).

Many academics utilize the practice of segmentation to limit when they engage in work communications to specific hours of the day or specific periods of the semester. The technological boundary can, therefore, facilitate the management of other types of boundaries, such as a temporal boundary. Dedicating a separate device for work can afford academics the ability to distance themselves from work communications at certain times, such as by not turning on the work device. This facilitates academics' management of work connectivity without compromising personal communications (for example, as shown on p. 101 where PA7 describes distancing himself from the work while remaining connected to social communications).

Extant literature describes the management of connectivity through the concept of the connective flow, i.e. managing connectivity by switching between work and personal devices based on the situation (Dery, Kolb and Maccormick, 2014). The findings of this study were consistent with this concept when work communications are conducted on separate devices or applications, allowing professionals to switch between the two. However, the thesis also provides empirical evidence of situations where managing the connective flow was not applicable. Many academics engage in work communications utilizing the same devices and applications they use for personal communications. This entanglement blurs the technological boundary between work and personal communications and can complicate the management of connectivity (see, for example, PA2's quote on p. 101 where her connectivity management is constrained by the entanglement of work and personal communications within the same device). In such cases, the concept of connective flow was not helpful in explaining academics' practices.

This study introduces *the practice of prioritization* to remedy the limitations identified in the concept of the connective flow. The practice of prioritization refers to the management of connectivity based on an evaluation of work communications, where academics modify their response to connectivity based on the *status quo*. Many academics modify their response to communications based on the source of the message (for example, as shown on p. 127 where PB5 mentions her tendency to respond to family communications but postpone others). Therefore, while the connective flow suggests a material separation between work and personal communications (Kolb, Caza and Collins, 2012; Dery, Kolb and Maccormick, 2014), the practice of prioritization is broader in considering situations where work and personal communications are entangled within the same devices.

The findings also contribute to the conceptualization of the connective flow by emphasizing that academics' prioritization of communications outside working hours is not merely based on a classification of communication to either work or personal, but takes into account different situations within the work domain. This includes the source of the message or the nature of the communication. For example, academics may prioritize work communications based on the perceived power distance between them and those with whom they communicate (see, for example, the 'who' dimension on p. 109). Academics may also prioritize work communications outside working hours based on the content or their perception of the urgency of the task (see, for example, the 'what' dimension on p .108). This classification based on the situation will be further discussed in Section 10.3 of this chapter.

Another connectivity management practice identified in the literature is the practice of buffering availability, i.e. keeping an eye on the flow of communications while deciding when, how, and if to respond (Mazmanian, Orlikowski and Yates, 2013). This thesis revealed some situations where buffering availability was not applicable. For example, the practice of buffering availability was based on a study on company-issued BlackBerry devices, whose primary function has traditionally been email communication (Schlosser, 2002; Mazmanian, 2013). However, the findings of this thesis indicate that academics can also be connected to work via a variety of platforms, such as phone calls and Instant Messaging (IM). Many academics communicate on their personal devices via WhatsApp, which provides the sender with the readability status of the message. This can constrain academics' decisions regarding when to respond and creates pressure to respond to communications immediately after reading them (for example, refer to p. 156 where PB22 differentiates email connectivity from connectivity via other platforms).

This thesis introduces *the practice of distancing* to explain how academics manage their distance from work communications. The practice of distancing refers to varying exposure and/or engagement with existing connectivity. It takes materiality into account and offers a broader perspective to that suggested by the practice of buffering availability by acknowledging connectivity via multiple platforms. It also incorporates situations where mobile technologies are simultaneously used for work and personal communications. In such an arrangement, the 'flow' of work communications (Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014) is

entangled with personal communications and becomes difficult to identify (for example, as shown on p. 99 where PA13 expresses the difficulty of disconnecting from either work or social communications).

This study introduces the practice of distancing in two forms, placing communications in the background, and dimming some possibilities for connectivity. Placing work communications in the background is feasible when work communications are conducted by emails. It is also feasible when work and personal communications are conducted via separate devices (for example, as shown on p. 128 where PB4 distance herself from connectivity via emails but remains connective via phone calls and messages).

The second form of distancing is dimming connectivity, i.e. distancing oneself from certain possibilities for connections. Many academics limit work communications to specific applications, such as emails. This affords academics with communications via platforms that they perceive as appropriate or convenient (for example, as shown on p. 103, where PA11 justifies his communications via IM rather than phone calls). Many academics dim multiple one-to-one work communications by engaging in WhatsApp groups. They perceive the dimming of one-to-one conversations as affording communications using less time and effort (for example, as shown on p. 147 where PB17 describes the simplified communications afforded by grouping).

The main difference between the two forms of the practice distancing is academics' access to these communications. Placing connectivity in the background can be described as a short-term distance from connectivity. When placing connectivity in the background (such as by not monitoring the work email), communications may still exist. Academics, therefore, acknowledge the possibility for work communications in the background but temporarily distance themselves from these communications. Some academics utilize the silence mood afforded by mobile phones to place phone calls in the background and check them at a later time (for example, as shown on p. 126 where PB21 describes how the silent mode minimizes the disturbance on communications). Other academics may dim connectivity via phone calls and conduct work communications on other preferred platforms (for example, refer to PA11's quote on p. 106 where he justifies not responding to phone calls with his preference for other platforms of communication). Dimming connectivity represents distancing oneself from the possibility of receiving communications via a certain platform. The term dimming is used here to represent a

reduced possibility for communications to take place via a specific platform. Many studies attribute the management of connectivity to professionals' preference (see, for example, Dery, Kolb and Maccormick, 2014). However, the term 'dimming' is used to illustrate that connectivity can exist beyond an academic's preference.

The findings of this study disagree with studies characterizing academics as having a high level of autonomy (Kolsaker, 2008; Heijstra and Rafnsdottir, 2010). In many cases, connectivity is subject to aspects beyond an academic's control. It may therefore result in communications beyond academics' preferences. While academics may have preferences towards certain connectivity platforms, they may not necessarily be capable of the management of the actions of others. For example, some academics assign a student leader to dim communications with larger groups of students and act as a mediator for communications between the academic and the remaining students. Academics perceive this practice as effective for minimizing the intensity of connectivity with students and facilitating communications that take less time and effort. They may, however, be approached by students in one-to-one communications, and against the academic's intention (as shown in PA1's quote on p. 104). This finding is consistent with the study by Brown et al. (2011) who argue that academics' choices are filtered through their work ethic and values, complicating the process of boundary setting.

The above discussion illustrates the diversity of connectivity management practices. While the three practices have been discussed separately, it must be clarified that the practices of segmentation, prioritization, and distancing are, in many cases, used in conjunction to complement one another. The findings illustrate that academics may utilize one or more of these practices in pursuit of the management of connectivity. For example, the practice of distancing facilitates a temporary distance from connectivity, after which the academic will eventually reach out to missed communications. The response to these communications may then be facilitated by the practice of prioritization, through which the academic evaluates each communication, such as according to the initiator of the communication or the urgency of the requested task. The practice of segmentation can also come into play if the academic technologically separates work communications from personal ones to facilitate their management of connectivity. Academics' connectivity management practices are shaped by a variety of parameters, which will be discussed in the next section.

10.3 The Four Identified Parameters of Connectivity Management Practices

The second research question explores parameters shaping connectivity management practices. This thesis utilizes the term 'connectivity management' as a substitute for the notion of 'controlling connectivity' applied in previous literature (see, for example, Wajcman and Rose, 2011; Cavazotte, Heloisa Lemos and Villadsen, 2014; Cecez-Kecmanovic, Boell and Campbell, 2014). The term 'connectivity management' takes into account parameters constraining the control over connectivity. Specifically, this study identifies four parameters as key to shaping connectivity management practices: the organization, the individual, the technology, and situational/contingent parameters. These parameters represent both social aspects (such as organizational norms, expectations, and academics' perceptions) and material aspects (i.e. affordances of mobile devices and applications). The primacy of the social over the material is consistent with Leonardi's (2011) proposition in conceptualizing the interplay between the social and the material. The four parameters shape connectivity management practices collectively. This section, however, discusses them separately for demonstrative purposes.

The implication of *the organization* on academics' practices has been identified by many scholars (Emirbayer and Mische, 1998; Scott, 2008; Abdelnour, Hasselbladh and Kallinikos, 2017). However, studies on connectivity management do not provide sufficient understanding of such parameters. The role of the organization is predominantly attributed to the norms and expectations of availability in organizations (Towers *et al.*, 2006; Orlikowski, 2007; Wajcman and Rose, 2011; Mazmanian, Orlikowski and Yates, 2013). Mazmanian (2013) takes the literature a step further to discuss differences in communications expectations and practices for professionals at the same organization. Her findings emphasize the role of the occupation for variations in connectivity management practices among different professional groups. The current study is consistent with the theoretical argument regarding differences in professionals' expectations and practices within the same group (i.e. same organization). However, this thesis contributes to the literature on connectivity management by highlighting variations in practices among professionals within the same occupational group.

The findings confirm the role of norms and expectations for professionals' engagement in work connectivity outside working hours (for example, refer to PA10's quote on p. 100

whose practice of segmentation was triggered by organizational norms and expectations). The organizational parameter is also evident in two additional aspects; working hours' arrangements and, a consequence of the first, the intensity of connectivity. This study sheds light on the negative side of flexibility and confirms the discussion regarding the implications of flexibility on the blurring of work-life boundaries (see, for example, the last two paragraphs in Section 3.2.1). It also contributes to the literature by illustrating organizational norms and expectations as being influenced by the temporal and spatial flexibility granted to professionals. Academics who normally communicate and conduct most of their work within a set time frame on campus are not usually expected to check their emails after leaving work (see, for example, PB18's quote on p. 153 where she refers to her communications outside working hours as a personal habit). Other academics who benefit from flexible working hours are expected to communicate and accomplish their tasks. However, with the lack of defined temporal and spatial boundaries, academics are, in many cases, expected to engage in communications even when they are at home (see, for example, PA3's quote on p. 111 where she expresses her annoyance of such expectations).

This finding is consistent with the literature on the implication of flexibility on academics' work-life boundaries, such as the studies by O'Laughlin and Bischoff (2005) and Kinman and Jones (2008) who argue that that flexible work schedule of academics renders work to be often accomplished at home, in the evenings, or on weekends. The findings also support the findings of several studies which shed light on the implications of flexibility afforded by mobile technologies for work-life boundaries of academics and other professionals (see, for example, Lowry and Moskos, 2005; Mazmanian, Yates and Orlikowski, 2006; Middleton, 2007; Heijstra and Rafnsdottir, 2010; Dery, Kolb and Maccormick, 2014). This thesis extends the findings in previous literature by comparing academics practices in two different working hour arrangements.

Specifically, organizational norms of flexible working hours were found to be associated with expectations of engagement in communications outside work hours. With flexible working hours at Springfield, academics' physical availability is merely required for lecture times. This allows academics to conduct most other work activities at home, including communications with individuals from work. Managing connectivity was thus a daily routine. This flexibility led to a lack of defined temporal boundaries to the extent

that the term ‘outside working hours’ was confusing and lacking sense. Connectivity outside work hours was therefore viewed as part of academics’ responsibilities, and was managed accordingly. Most work communications were conducted on always-on Instant Messaging (IM) applications, such as WhatsApp. Academics’ narratives illustrate their attempts to reduce disruptive connectivity without compromising what is expected from them as academics. They engaged in connectivity to the level that adheres to the expectations of the collective group. On the contrary, with a traditional eight-hour workday, academics at Hudson conduct most of their communications at the institution during the working day, and, therefore, expectations of their availability outside working hours remain low. This fixed working hours arrangement provides common space and time during which academics can conduct work-related communication and minimizes the expectation for engagement in work communications outside the work domain. This also contributes to academics’ confidence in their management practices. Academics exercised less effort when managing work connectivity outside working hours. Remaining connective via emails on laptops, they are at ease knowing that leaving emails to the next working day does not compromise their professional responsibilities.

Academics’ connectivity management practices were also influenced by the intensity of connectivity. The findings indicate that connectivity can complement the lack of common time and space during working hours. Therefore, many academics perceived connectivity outside working hours as important for carrying out daily work activities. In such an arrangement when connectivity is the norm, connectivity management is viewed as a necessity. Many academics alter their communication practices in an attempt to alleviate the implications of connectivity on their personal lives (for example, as shown on p. 100 where PA10 refers to the utilization of a second mobile phone to maintain the privacy of her personal number). The findings also demonstrate that when connectivity outside working hours is infrequent, connectivity management becomes effortless (for example, as shown on p. 151 where PB23’s does not refrain himself from communications outside working hours due to the infrequency of such communications).

The variations in connectivity across contexts confirm the theoretical proposition by Kolb, Caza and Collins (2012) regarding the various ‘states of connectivity’, i.e. the amount of connections relevant to the job requirements. This thesis contributes with empirical evidence of the role of the intensity of connectivity within organizations for

shaping connectivity management practices. However, the term ‘states of connectivity’ refers to a certain amount of connectivity in a specific context, i.e. ‘how much’ connectivity is present (ibid., p. 268). This proposition was not helpful in understanding situations where the level of connectivity in a certain situation was perceived differently by academics. This thesis conceptualizes the level of connectivity as being subjective to the perception of those who enact it. It introduces and utilizes the term “intensity of connectivity” to substitute “state of connectivity” suggested by Kolb, Caza and Collins (2012). For example, many expatriates have fewer social responsibilities outside working hours compared to their colleagues. They are more likely to have time for engagement in work communications, and are therefore less bothered by these communications (as shown in the first quote on p. 129 where PB5, an expatriate, explains her connectivity outside working hours as a result of common organizational norms, but attributes her engagement to the lack of social responsibilities in her personal life).

The variation in views towards intensity of connectivity suggests individual differences among academics in the perception and management of connectivity. Most studies on connectivity management take a holistic view towards this topic and do not account for variations among professionals (as shown in Section 4.5 on p. 38). This research takes a different perspective by recognizing academics’ individual context in the exploration of connectivity management practices across a range of mobile technologies and applications. While organizational norms and expectations is a key player in these practices, *the individual parameter* emphasizes variations in connectivity management practices among academics within the same organization. This finding is consistent with the findings of the few studies that highlight individual differences in managing connectivity, including Mazmanian (2013), Symon and Pritchard (2015), and Russell and Woods (2020). This thesis also extends the work of Cecez-Kecmanovic, Boell and Campbell (2014), who explore how connectivity is experienced and enacted by professionals, and Matusik and Mickel (2011), who address variations in reactions to connectivity.

The findings regarding variations in perceptions and enactment of connectivity support the model of materiality of connectivity introduced by Cecez-Kecmanovic, Boell and Campbell (2014), which categorizes connectivity to different modes based on how it is experienced and enacted (refer to Section 4.3 on p. 32). However, instead of

conceptualizing connectivity as being important to professionals in four distinct ways, this current research argues that a single professional can experience connectivity as being both inevitable and controllable and, therefore, enact it as both enabler and disturbing. Many academics at Springfield described connectivity with colleagues as inevitable, and connectivity with students as controllable. In many cases this was due to the different level of superiority academics perceived when communicating with different groups (for example, as shown on p. 110, where PA1 discusses his practices to control communications from students, and the lack of resistance to communications from colleagues). An academic may also enact connectivity as both enabling and disturbing, such as according to the perceived urgency of the message, and the appropriateness of the timing. For example, academics who willingly distribute their personal number to enable accessibility outside working hours may be disturbed when they are contacted regarding non-urgent matters (see, for example, PB16's quote on p. 136 where she reports her willingness to receive communications outside working hours, and her comment on p. 125 where she experienced connectivity as disturbing).

This study also identifies a set of factors that influence the perception and management of connectivity. This, for example, includes variations in academics' preferences towards segmentation or integration of work-life domains. This finding confirms the literature on the management of work-life boundaries, which highlight different preferences regarding the integration or segmentation of work-life boundaries (see, for example, Prasopoulou, Pouloudi and Panteli, 2006; Dery, Kolb and Maccormick, 2014; Wright *et al.*, 2014). The findings extend the literature on connectivity management by illustrating variations in academics' connectivity management practices attributed to additional factors, such as academics' personal habits (for example, as shown on p. 152 where PA9 describes work connectivity as a habit running in her blood stream). Variations can also be attributed to academics' personal values and sense of loyalty towards the organization. In many cases, connectivity is perceived and utilized as an enforcer for academics' sense of productivity and job accomplishments (for example, as shown on p. 135 where PB7 justifies her connectivity by the love of, and passion for, her work).

Variations among academics do not only render differences in how connectivity is perceived, but also influence expectations of engagement in communications. This is consistent with the findings of Matusik and Mickel (2011) who highlight the role of

external expectations for variations in reactions to connectivity. Many academics reported the role of the individual context for their connectivity management practices. Single academics are perceived by their colleagues to have more time outside working hours compared to those with children; therefore, expectations of their engagement are escalated (for example, as shown in PA10's quote on p. 116 where she describes the pressure and expectations imposed on her due to her marital status).

Another parameter influencing connectivity management practices is *the technology* through which connectivity is enacted. This refers to the physical and digital affordances of mobile device and applications. Connectivity management literature has been dominated by a human-centric perspective. For example, Kolb (2008) refers to actor agency as an attribute of connectivity. Dery, Kolb and Maccormick (2014) follow a similar theoretical stance and address connectivity management as the product of actors' choice. This study follows the approach of the few studies on connectivity management that give an account to material agency through the paradigm of sociomateriality. This, for example, includes Symon and Pritchard (2015) and Wajcman and Rose (2011), who conceptualize professionals' practices as sociomaterial. However, Symon and Pritchard (2015) focus on connectivity management via smartphones in particular, and Wajcman and Rose (2011) address connectivity during working hours. The current study takes a different approach by addressing connectivity management practices on a wider range of mobile technologies afforded to academics outside working hours. The findings demonstrate the role of the technology and are consistent with the view of connectivity management practices as a result of the interplay between the social and the material. It highlights the role of technology as a key parameter for shaping connectivity management practices.

The findings highlight the role of the communication platform in influencing connectivity management practices. This can be illustrated by the variations in which the practice of segmentation is enacted. While academics at Springfield dominantly communicated via their mobile phones outside working hours, they developed the need to own two separate mobile devices to manage their time at home. Material segregation facilitates a separation between work communications and personal ones, facilitating their connectivity management practices (as shown in PA7's quote on p. 101 where material segregation afforded him the separation between work communications and personal ones, facilitating

temporary periods of disconnection from work). On the contrary, when most communications are conducted via emails, such as at Hudson, owning two mobile devices can be trivial. Academics viewed the segregation of email applications as good enough. Email affords synchronization on laptops. This supports academics connectivity management in regard to if, when, and where to log into the laptop and engage in email communications. Laptops can also simplify attaching, downloading, reading, or editing documents (for example, as shown on p. 127 where PB21 expresses his preference for email communications on laptops rather than on mobile phones).

The current research argues that the affordances of the platform dominantly used for communications (while adhering to organizational norms and expectations) can facilitate or constrain connectivity management practices. This can be further illustrated by the dominance of IM at Springfield. Communications via IM can surpass emails in terms of ease of use and prompt response (material agency), and it had therefore become the norm. IM allows effortless sharing of messages or pictures (material agency), making it an optimal means for communications on the go, when completing home chores or running some errands (human agency). Due to the back and forth conversations IM affords (material agency), academics use it to compensate for the lack of face-to-face discussions, either one-to-one, or by establishing groups (human agency). The IM application is designed to be installed on always-on mobile devices (material agency), which academics have ready to hand most of their day (human agency). This can lead to the acceleration of expectations of availability. It can also intensify connectivity by opening the door for additional platforms of communications, such as phone calls.

This finding confirms the notion of the autonomy paradox suggested by Mazmanian et al. (2013), which highlights the discrepancy between professionals' sense of autonomy and their actual practices. Their study indicates that the materiality of technology (such as portability, and 'always-on' status) renders professionals connected anywhere/anytime. Similarly, this current study reveals that while academics utilize technology to manage connectivity, their practices can also result in further communications, intensifying connectivity and complicating its management. For example, many academics report their management of connectivity by engaging in group conversations on IM applications. This is perceived as effective for alleviating the burden of multiple one-to-one conversations and communicating taking less time and effort.

However, this act was found to bring more communications to academics, intensifying their connectivity (for example, as shown on p. 103 where PA7's quote illustrates the capacity of groups to expose academics to unnecessary connectivity).

The findings illustrate that the practices identified in the previous section are contingent. So far, the contingency of connectivity management practices has been discussed in this section in relation to the influence of the organization, the individual context, and the technology; these collectively shape connectivity management practices. *Situational/contingent parameter* has been referred to by several studies (see, for example, Wajcman and Rose, 2011; Dery, Kolb and Maccormick, 2014); however, either implicitly (Dery, Kolb and Maccormick, 2014) or broadly (Prasopoulou, Pouloudi and Panteli, 2006; Wajcman and Rose, 2011). For example, Dery, Kolb and Maccormick (2014) refer to the management of the 'flow' of connectivity based on the situation; they classify connectivity as either for work or personal. Similarly, Prasopoulou, Pouloudi and Panteli (2006) and Wajcman and Rose (2011) focus on temporal and spatial boundaries, and approach communications as taking place in either work or non-work domains. This thesis confirms previous studies regarding the influence of the domain in which connectivity is conducted on how connectivity is managed. Many academics report differences in connectivity management across the two domains. For example, academics at Hudson are not expected to engage in work communications outside working hours, and they enact it accordingly (see, for example, PB4's quote on p. 123 where she expresses her disagreement with communications outside working hours and emphasizes the boundaries between work and life).

However, this current study argues that prior studies downplay the role of the situation. It brings it to the foreground as a key parameter shaping connectivity management practices. While the management of connectivity is influenced by the domain in which it is received, the findings extend the classification of the situation further by arguing that the situational parameter is more complex (for example, as shown on p. 138 where PB15 shares her preference for work communications).

The findings illustrate the role of connectivity in shifting boundaries between work and life. This shift results in an overlap between the two domains. The overlap of particular interest in this research is that of work domain into personal life. Many academics establish their own temporal boundaries that they accept as normal hours for work

communications. This, for example, involves communications on weekdays from the morning until nine or ten in the evening. Despite falling outside the actual working day (i.e. the time after which no administrative staff are present on campus), many academics perceive their engagement in work communications within this newly defined temporal boundary as normal and part of their daily routine (for example, as shown in PB7's quote on p. 130 where she expresses her willingness to engage in communications anytime during the work day, but experiences displeasure when communications take place at the weekend). Connectivity management practices can, therefore, vary based on the timing of the communications. The variation is in many cases influenced by the temporal boundaries established by academics, rather than the actual working hours.

The findings indicate that work communications during a non-work context can be classified further beyond temporal and spatial boundaries between the two domains. Connectivity is not only related to the domain in which it takes place, but also includes other elements such as (a) "how" academics are being contacted, (b) "what" the communications are about, and (c) "who" the communications are from. For example, many academics prioritize communication based on their perception regarding the urgency of the message (for example, as shown on p. 132 where PB8 prioritizes communications she perceives as urgent but distances herself from non-urgent messages). Many academics have preferences regarding the platform through which they are connected. They may be willing to receive communications via certain platforms but distance themselves from others (as shown on p. 107 where PA10 describes her practice of distancing herself from phone calls, rendering communications taking place on another preferable platform). Academics may also prioritize communications based on the source of the message and the perceived consequences of their practices (as shown on p. 110 where PA3 indicates her tendency to respond to communications if they are from the departmental head).

10.4 The Imbrications of the Social and the Material

The above discussion in Sections 10.2 and 10.3 demonstrates the different possibilities connectivity management practices can take, and the various parameters shaping these practices. This section relies on previous discussions to highlight novel contributions to the conceptualization of socio-materiality, specifically through the introduction of the 'layers' and 'foundation' of imbrications. It then looks more closely at the interplay

between the social and the material in shaping connectivity management practices. This section presents three example scenarios of connectivity management practices to demonstrate this interplay and illustrate the contributions.

10.4.1 The Layers of Imbrications

The framework of socio-materiality was fruitful for exploring practices as produced by the interplay between the social and the material. Leonardi (2011) refers to this interplay as the "interlocking" of the social and the material, and describes it as taking the form of a "chain of imbrications" (as shown in Section 5.3.3 of the theoretical framework chapter). Socio-materiality has been developed and predominantly used for studying practices at an organizational level. For example, Leonardi (2011) introduced and utilized socio-materiality to understand changes in technologies or routines within organizations. Stampe and Müller (2018) applied socio-materiality to explain drivers for organizational investments. The focus on organization can limit detailed information relevant to the individuals who enact these practices (Leonardi, 2011). This, for example, includes information regarding how practices are shaped by the individual context or the situation in which practices are enacted.

The findings show that the social and the material interlock in different forms, leading to various connectivity management practices that cannot be attributed to a specific form of interplay. For example, while emails can represent a constraint for some academics due to the hassle of logging in, other academics perceive the logging in feature as an advantage for managing when they become connected. The social and the material can also take different forms of interlocking for a single person. For example, an academic's connectivity management practices can vary based on the time of the day or the perceived urgency of communications. Therefore, a "chain of imbrication" (ibid.) does not capture the diversity of academics' practices.

The current thesis contributes to the literature through conceptualizing the interplay between the social and the material as 'layers' of imbrications. This metaphor can illustrate the various possibilities for social and material imbrications within an organization. It is used to demonstrate how the interplay between the social and the material can take multiple forms. Different layers represent different possibilities for connectivity management practices for professionals within an organization. They also

represent different possibilities for connectivity management practices for a single professional under different situations. For example, academics can experience different layers of imbrications based on their personal context. They can develop different perceptions of the usefulness of certain practices, such as the practice of segmentation. Some academics have one mobile identifier and only limited social communications, and therefore do not see the need for material segregation. An academic may also enact different connectivity management practices based on the source of the message (as shown on p. 110 where PA16 mentions his preference for phone calls for connectivity with faculty and colleagues, and emails for connectivity with students).

Multiple layers of imbrications can exist, representing multiple forms of interlocking that cannot be captured in a single chain of imbrications. What these layers have in common is the influence of both human and material agencies in shaping connectivity management practices. The term 'layers' is used to illustrate the cohesiveness of the layers of imbrications. This for example includes commonalities among the layers due to being in one organizational setting, and/or experienced by one academic. I summarize the rationale of this term in Table 10.1 below.

Table 10. 1 Summary of the Rationale of the Layers of Imbrications

Limitation of the framework of socio-materiality	Socio-materiality has been developed and predominantly used for studying practices at an organizational level (a chain of imbrications)
Finding from this research	The social and the material interlock in different forms within one context (such as in one organization, or for one professional under different situations)
Contributions of the 'layers' of imbrications	▪ Illustrate various possibilities for social and material imbrications. ▪ Illustrate the cohesiveness of the layers (commonalities due to being in one organization or experience by one professional)

10.4.2 The Foundation of Imbrications

The framework of socio-materiality suggests a perception-based nature of socio-material imbrications. It states that "perceptions of constraint lead people to change their technologies while perceptions of affordance lead people to change their routines" (Leonardi, 2011, p. 147). In other words, the perception of technological constraints produces a sequence of imbrication that changes technologies, while the perception of technological affordances produces a sequence of imbrication that changes work routines. However, this view was not always applicable in understanding connectivity management practices. Many academics who perceive a certain technology as affording eventually use another technology for communications. For example, while an academic may perceive emails as affording formal and documented communications, they might utilize other technologies to adhere to preference of students (for example, as shown on p. 120 where PB16's quote indicates that while email is the first preference, WhatsApp is used as per students' practices). Therefore, this study disagrees with the perception-based nature of imbrications and emphasise the various parameters shaping social and material imbrications (as discussed in Section 10.3 above). This finding extends the theorization of socio-material imbrications which tends to "push the political dimensions of these decisions to the background" (Leonardi, 2011, p. 156). This finding is also consistent with Zorina and Avison (2011) who emphasize the role of context and disagree with the perception-based nature of imbrications.

This thesis illustrates that the imbrications are shaped by the organization, the individual, the technology, and the situation, collectively. The four parameters represent the 'foundation' on which the layers of imbrications are formed. This emphasizes the interplay between social and material aspects in shaping connectivity management practices. Leonardi (2011, p. 50) suggests that the social and the material imbricate just like 'tiles' on a roof. This study extends this conceptualization by highlighting the 'foundation' on which these tiles interlock. Academics' practices are therefore enabled and constrained by this foundation. Despite the significance of all parameters in influencing connectivity management practices, the organizational parameter was found, in many cases, to take precedence. This is evident, for example, in how organizational norms and expectations (such as working hours' arrangements and intensity of connectivity) can shape how academics enact connectivity (for example, as shown on p.

168 of Section 10.3). I summarize the rationale of the foundation of imbrications in Table 10.2 below.

Table 10. 2 Summary of the Rationale of the Foundation of Imbrications

Limitation of the framework of socio-materiality	The perception-based nature of socio-material imbrications, i.e. "perceptions of constraint lead people to change their technologies while perceptions of affordance lead people to change their routines" (Leonardi, 2011, p. 147)
Finding from this research	The study disagrees with the perception-based nature of imbrications and emphasise the various parameters shaping social and material imbrications (such as a preference of emails that is constrained by organizational norms)
Contributions of the 'foundation' of imbrications	emphasizes the interplay between social and material aspects in shaping connectivity management practices (beyond specific focus on technological affordances)

10.4.3 Empirical Illustrations of Socio-material imbrications

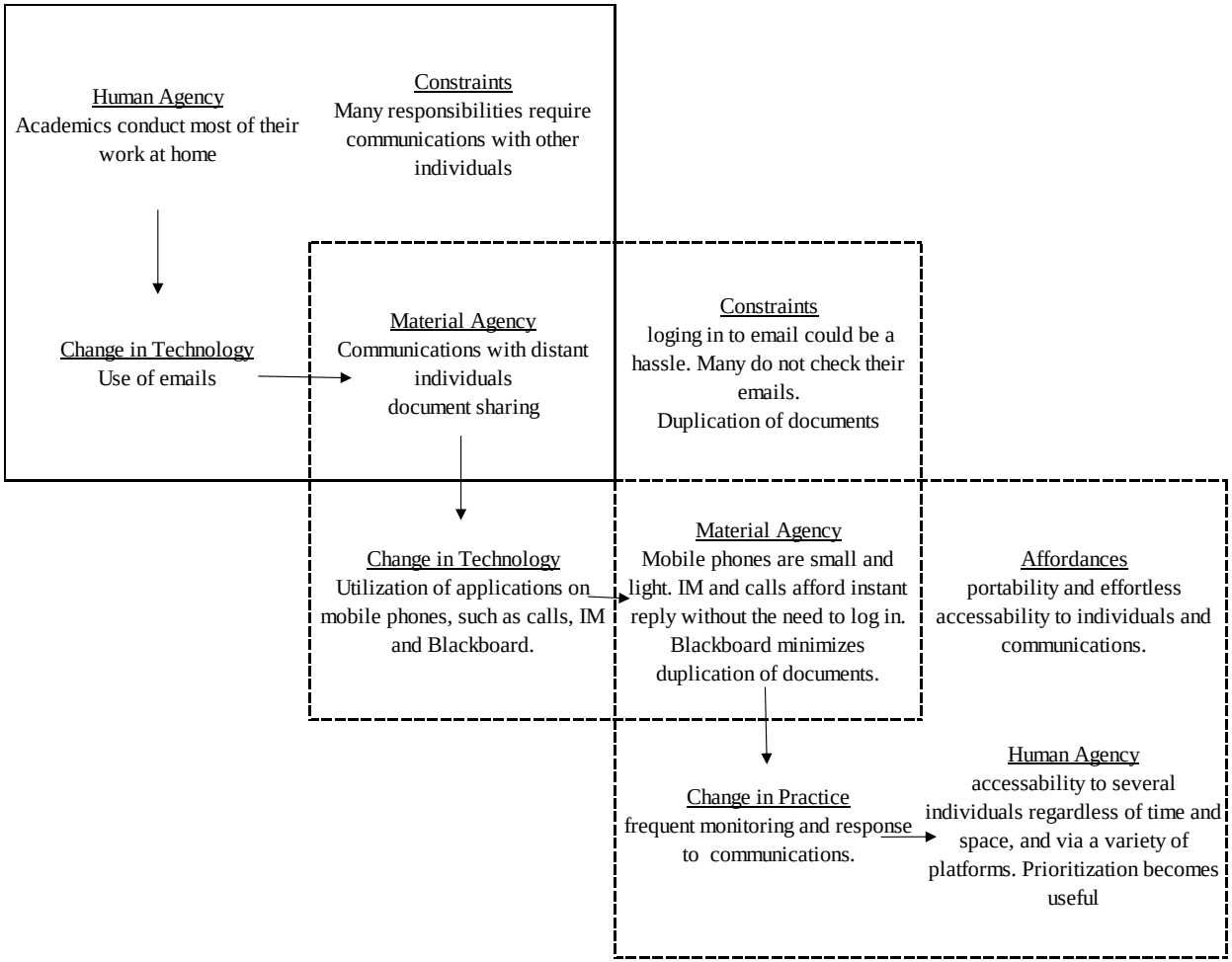
The interplay between the social and the material can theoretically result in endless scenarios. In what follows, this interplay will be further clarified together with an incorporation of the two concepts introduced in this study: the 'layers' and 'foundation' of the imbrication. Three scenarios will be presented to exemplify the interplay between human and material agencies. These scenarios are derived from the data of the first case only (i.e. Springfield) to illustrate various possibilities of imbrications at one organization. The three scenarios start in the same way, i.e. with an account to the common organizational context in which these practices are enacted. This is to emphasize the commonalities among the layers and to highlight the role of the four parameters in shaping connectivity management practices.

Due to the interplay between the social and the material, attributing a practice to either social or material aspects was challenging. The scenarios illustrate where human or material agency becomes dominant. The four parameters represent the foundation of the imbrications, and are referred to explicitly in the scenarios where it is most evident. Each scenario is illustrated by a graph. The graphs are inspired by Leonardi's (2011) illustration of how imbrications of human and material agencies produce changes in technologies or

routines. Solid borders represent the dominance of human agency, and dashed borders represent the dominance of material agency. The interplay between human and material agencies is represented through the imbrications, i.e. the interlocking of human and material agencies dictating connectivity management practices. In Leonardi's illustration, "perceptions of constraint lead people to change their technologies while perceptions of affordance lead people to change their routines" (ibid., p. 147). However, the graphs below reflect the findings of this study and illustrate how perceptions of constraints do not always lead to changes in technology.

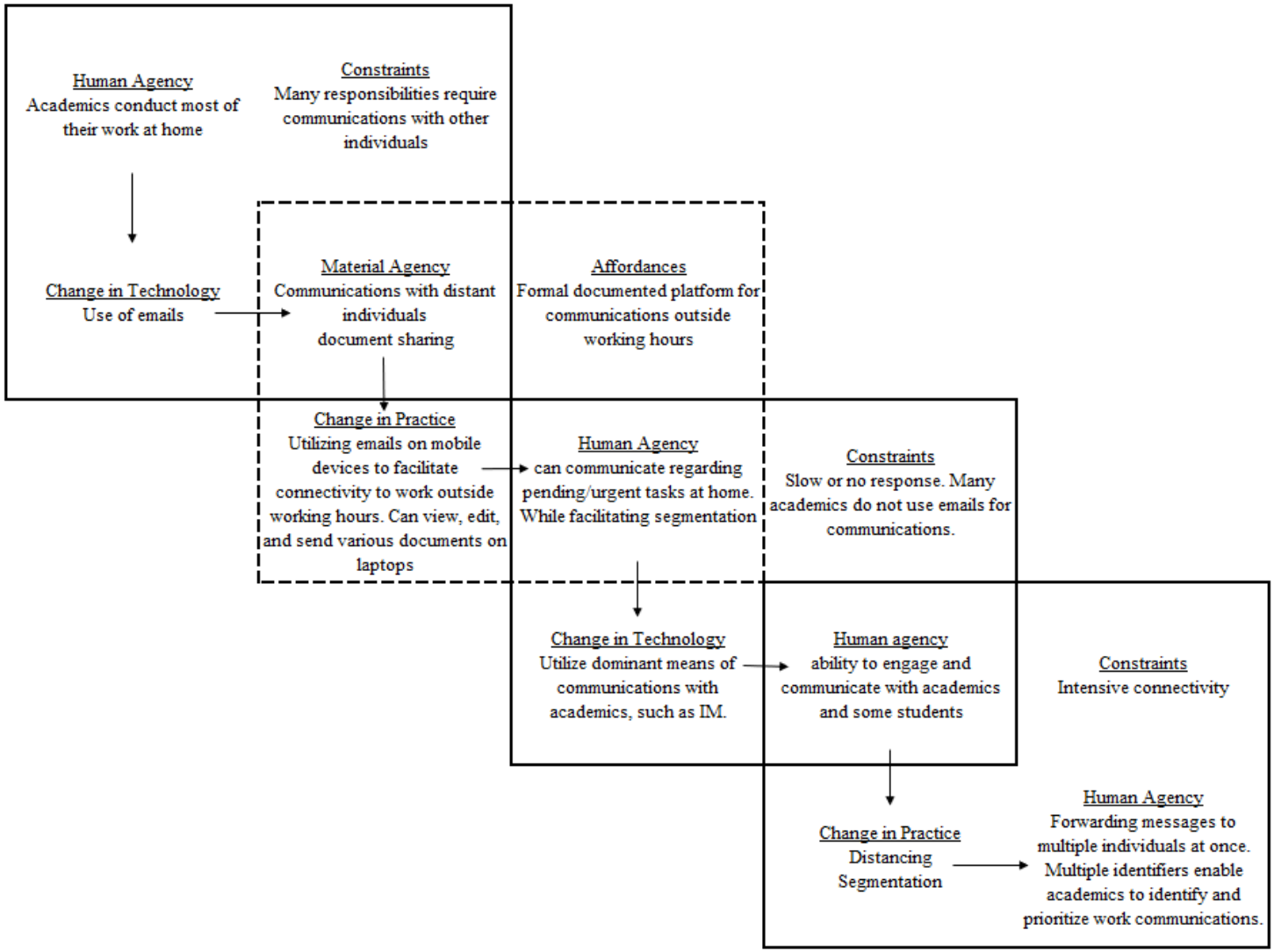
Scenario 1: As illustrated in Figure 10.1, due to the flexible working hours arrangement, many academics conduct most of their work at home (human agency, as influenced by parameters such as organizational norms, individual preference of segmentation/integration, and affordances of technology). Their work requires communications with several individuals, including students and staff. The university provides students and all members of staff with a unique email identifier. Emails facilitate communications with distant individuals, but could be problematic for several reasons. For example, emails do not allow updates to a document that has been sent and requires the creation of new versions (material agency). This may create duplicate documents, such as when a student submits several versions of their assignment by email. Emails also require users to intentionally log-in to the university email to view and reply to emails (material agency). Many academics and students do not usually log in to monitor email communications when at home, obstructing the communication process. Other communication platforms can overcome some constraints of email communications. For example, an academic utilizes Blackboard due to the affordance of document updates through the replacement of previously submitted versions (material agency). This can eliminate duplication of documents on the academic's device. The academic can access Blackboard from several devices, including their mobile phones. Mobile phones are small in size and light in weight, affording increased portability (material agency). Mobile phones afford connectivity via additional applications, such as IM and phone calls, which do not require logging in and afford effortless communications (material agency). The academic can frequently monitor communications on these platforms; they can easily access students and staff regardless of time and place. The practice of prioritization becomes useful for managing connectivity and evaluating the necessity for engagement (human agency, as influenced by the parameters such as affordances of the technology).

Figure 10.1: Socio-material Imbrications for Scenario 1



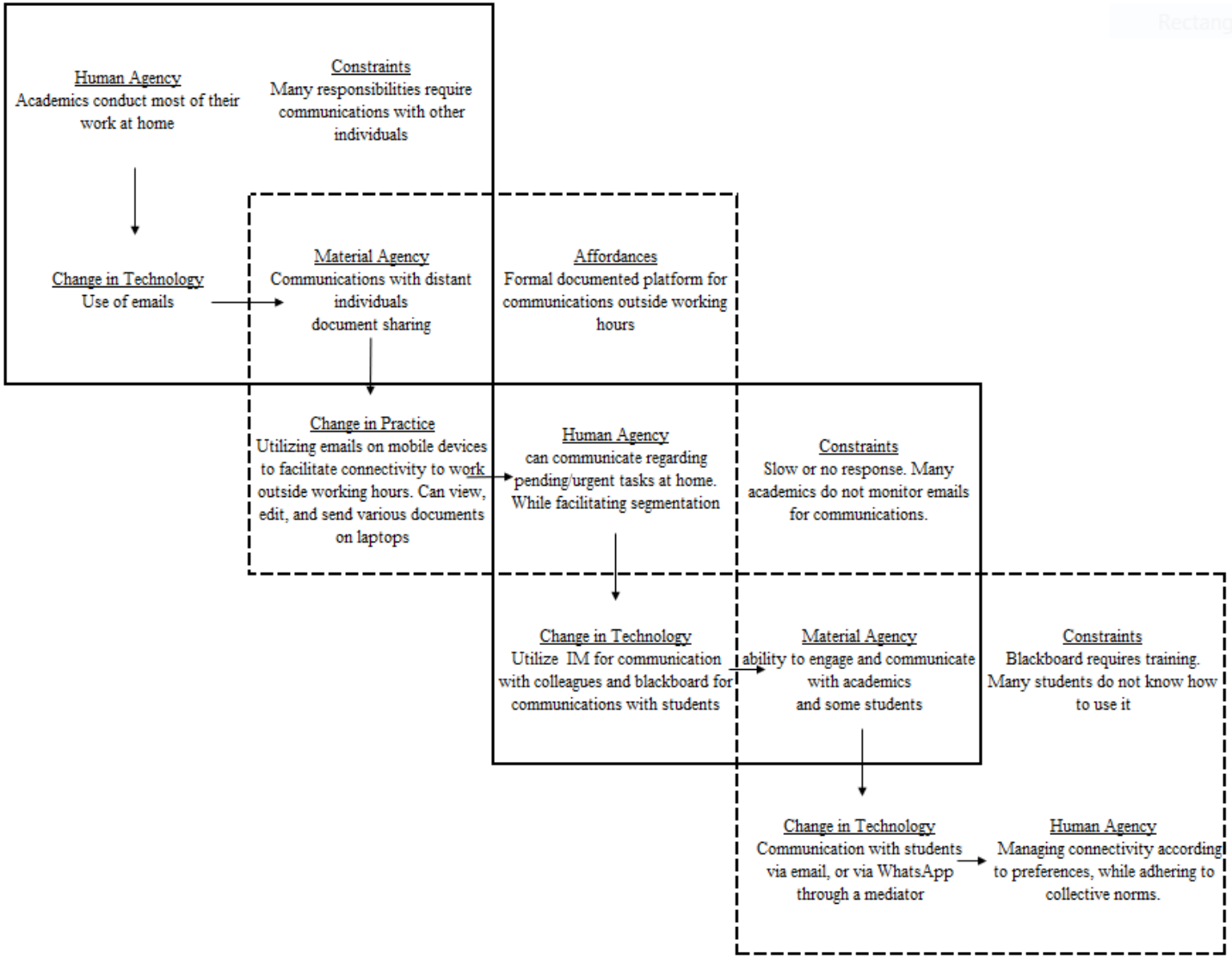
Scenario 2: As Figure 10.2 illustrates, due to the flexible working hour arrangements, many academics conduct most of their work at home (human agency, as influenced by parameters such as organizational norms, individual preference of segmentation/integration, and affordances of technology). Their work requires communications with several individuals, including students and staff. The university provides students and all members of staff with a unique email identifier. Emails facilitate communications with distant individuals and afford documentation of communications. This makes them an optimal platform for conducting formal work communications outside working hours (material agency). An academic synchronizes emails on a mobile phone or laptop to engage with work communications and complete pending tasks, or view, edit, and send documents (human agency, as influenced by the parameters such as affordances of the technology). Other academics may infrequently monitor their emails, leading to slow or no response outside working hours. Despite the preference for emails, an academic may utilize other communication channels to facilitate communications, such as IM (human agency, as influenced by the parameters such as organizational norms and affordances of technology). The academic can be accessed by staff and an enormous number of students, intensifying communications. The academic may attempt to overcome the intensity of work communications through distancing (such as by utilizing WhatsApp groups), or segmentation (such as by dedicating another mobile phone for work). Distancing facilitates the academic's management of connectivity by forwarding a message to a group of individuals at once, therefore saving time and effort. Segmentation enables the academic to identify and prioritize work communications.

Figure 10.2: Socio-material Imbrications for Scenario 2



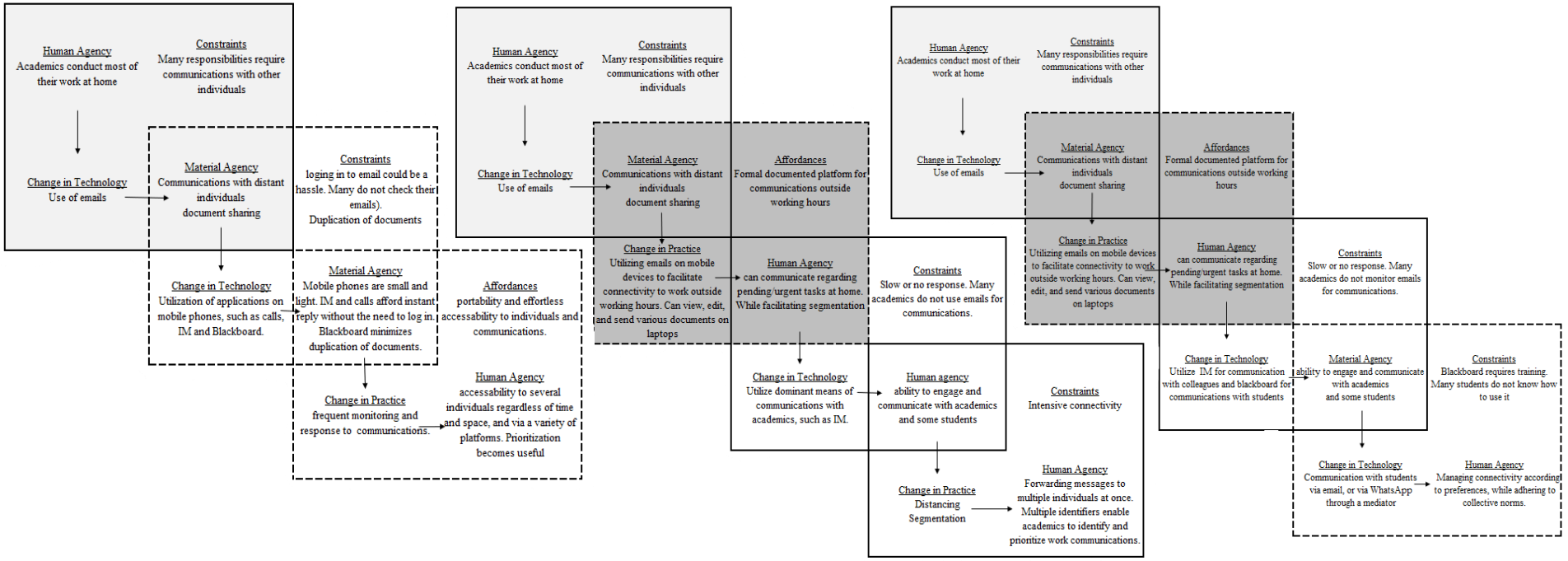
Scenario 3: As Figure 10.3 illustrates, due to flexible working hour arrangements, many academics conduct most of their work at home (human agency, as influenced by parameters such as organizational norms, individual preference of segmentation/integration, and affordances of technology). Their work requires communications with several individuals, including students and staff. The university provides students and all members of staff with a unique email identifier. Emails facilitate communications with distant individuals, and afford documentation of communications. This makes emails an optimal platform for conducting formal work communications outside working hours (material agency). Academics may synchronize emails on their mobile phones or laptops to engage with work communications and complete pending tasks, or to view, edit, and send documents (human agency, as influenced by the parameters such as affordances of the technology). Other academics may infrequently monitor their emails, leading to slow or no response outside working hours. Despite the preference for emails, academics may utilize other communication channels to facilitate communications, such as IM (human agency, as influenced by the parameters such as organizational norms). An academic utilizes IM for communications with colleagues, but prefers utilizing Blackboard for communications with students. The use of Blackboard is constrained due to the lack of knowledge and the training students require to utilize the system (material agency, as influenced by the parameters such as organizational norms and the training requirements of technology). The academic may continue using emails for communications with students. The academic may also utilize IM for communications with students but assign a mediator for these communications to dim connectivity with large groups. Although the academic acknowledges this may constrain sufficient communications with students, distancing enables the academic to manage connectivity with students and save time for family responsibilities (human agency, as influenced by the parameters such as the individual context).

Figure 10.3: Socio-material Imbrications for Scenario 3



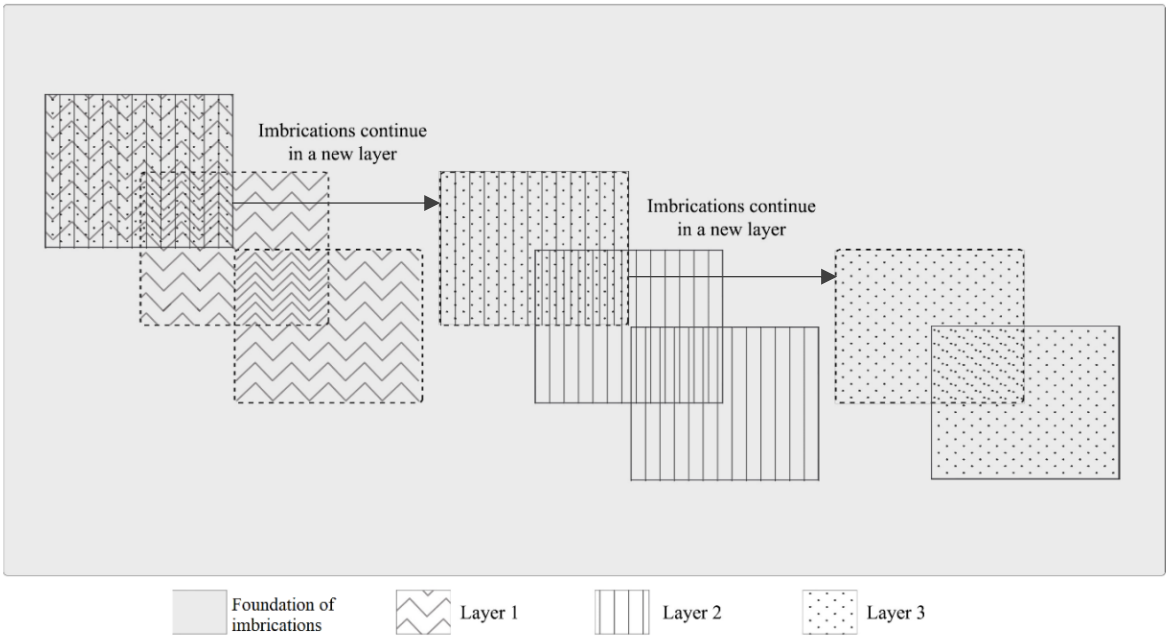
As the scenarios above illustrate, social and material imbrications can take a variety of possibilities, leading to different connectivity management practices. Many aspects of these imbrications are common across multiple scenarios (such as those related to organizational norms and policies, or dominance platforms of communication within the organization). Figure 10.4 combines the three figures of the scenarios and use shades of grey to highlight commonalities among them.

Figure 10.4: Commonalities among Scenarios



While the three scenarios are illustrated independently in the above graphs and discussion, they are cohesive. This cohesiveness is represented through the metaphor of layers of imbrications. Joining these scenarios together can therefore illustrate this relationship. Figure 10.5 provides an illustration of these imbrications while taking into account the extension of the conceptualization of socio-materiality, i.e. the metaphors of layers and foundation of imbrications.

Figure 10.5: A Synthesis of Socio-material Imbrications



Each scenario is illustrated by a layer of imbrication represented with a pattern. Zigzag represents Scenario 1 (i.e. Layer 1), vertical lines represent Scenario 2 (i.e. Layer 2), and dots represent Scenario 3 (i.e. Layer 3). Common social and material factors are illustrated by joint patterns. The continuation of the layer of imbrication is separated in the graph for demonstration purposes, with arrows indicating the continuation of the new layer. Similar to single chains of imbrications (Leonardi, 2011), a set of imbrications (referred to here as a layer) can exist and continue in either direction. The shaded area in the background represents the foundation on which imbrications are based. The organization, the individual, the technology, and the situation act as a foundation for the layers of imbrication and shape how they unfold.

10.5 Onward

This chapter presented a discussion of the research findings in relation to the research questions and existing literature. The first section answered the first research question and discussed the three emerged connectivity management practices (the practice of segmentation; the practice of prioritization; and the practice of distancing). The first section also introduced new key terms elicited in this thesis (such as the technological boundary as a new form of boundary between work and life domains), and highlighted the contributions of the first research question to the literature on connectivity management and the literature on work-life boundaries.

The second section discussed four key parameters shaping connectivity management practices in response to the thesis' second research question. The findings here identify the significance of the organizational, individual, technological, and situational parameters for shaping connectivity management practices, thus outlining the contributions of the second research question to the literature on connectivity management.

The third section shed light on the contributions to the conceptualization of socio-material imbrications. It focused on three scenarios of connectivity management to illustrate the role of the interplay between the social and the material. In doing so, this section introduced two key terms essential for further understanding of socio-material imbrications (including the 'layers' of imbrications and the 'foundation' of imbrications).

The next chapter is the final chapter of the thesis. It summarizes the research contributions and discusses the research limitations and implications for both research and practice.

Chapter 11: **Conclusions**

The aim of this thesis was to further the understanding of connectivity management practices of academics in two Saudi Academic institutions. It applied the framework of socio-materiality to address the following research questions: (a) how do academics manage work connectivity in the presence of mobile technologies, and (b) what parameters shape connectivity management practices. This concluding chapter summarizes the contributions of this thesis, identifies the limitations of this research, and closes with directions for future research, and implications for practice.

11.1 Research Contributions

This thesis identifies several novel contributions to knowledge. First, the study introduces an important shift in the construct and application of socio-material imbrications. The framework of socio-materiality introduced by Leonardi (2011) proposes that perceptions of constraint lead people to change their technologies, while perceptions of affordance lead people to change their work routines. In doing so, the framework fails to recognize that practices within organizations are enabled and constrained by many factors beyond perceptions of affordances or constraints. Also, this framework takes a holistic view of social and material imbrications within organizations, without providing sufficient account for individuals enacting practices within organizations. This study extends the conceptualization of socio-material imbrications by introducing two key terms: the 'layers' and 'foundation' of imbrications. These terms are essential for providing an understanding of the different possibilities of social and material imbrications, and the parameters grounding these imbrications. The two terms are especially useful for research interested in individuals' practices beyond a broad organizational level analysis.

Second, extant work-life boundaries are mainly classified into the following social forms: temporal, spatial, and psychological boundaries (Clark, 2000). These boundaries are referred to as 'social' (Clark, 2000; Robey and Cousins, 2015). Therefore, many studies on the boundaries between work and life place an emphasis on the role played by human agency in moulding work-life boundaries (Clark, 2000; Hislop and Axtell, 2011). This view, however, downplays the role of (mobile) technology for the management of work-life boundaries. This study extends the conceptualization of work-life boundaries by introducing a 'material' boundary that brings technology to the foreground, i.e. the

technological boundary. This boundary incorporates the role of material agency into the management of work-life boundaries and provides further understanding of the management of work-life boundaries.

Third, the term ‘states of connectivity’ is used in connectivity literature to refer to the level of connectivity in a specific context, i.e. ‘how much’ connectivity is present (Kolb, Caza and Collins, 2012, p. 268). This current study contributes to the literature on connectivity by providing empirical evidence of the role of individual differences for variations in perceptions towards levels of connectivity. It conceptualizes the level of connectivity as being subjective to the perception of those who enact it. This study introduces and utilizes the term “intensity of connectivity” to substitute “state of connectivity” suggested by Kolb, Caza and Collins (2012). In doing so, the research highlights that a certain level of connectivity does not only exist in a specific context, but is also subjective to the perceptions of individuals who experience it in different ways.

Fourth, previous research attributes variations in connectivity management to differences between types of occupation (Hislop and Axtell, 2011; Mazmanian, 2013). This current study offers empirical evidence that variations in connectivity management practices exist even within the same occupation. It then goes on to suggest a set of parameters that shape connectivity management practices, namely the organization, the individual, the technology, and the situation.

Fifth, much research uses the term “control” to study how professionals enact connectivity management practices (Middleton, 2007; Kolb, 2008; Mazmanian, Orlikowski and Yates, 2013; Dery, Kolb and Maccormick, 2014). By exploring the parameters affecting connectivity management practices, this current research utilizes the term “connectivity management” and proposes it as a substitute for the notion of control. In doing so, this research presents a step away from the human-centric conceptualization of connectivity management that highlights how the interplay between human and material agencies shape connectivity management practices.

Finally, literature conceptualizing connectivity management practices departs from the concept of duality (Kolb, 2008) towards the concepts of connective flow (Dery, Kolb and Maccormick, 2014) and buffered availability (Mazmanian, Orlikowski and Yates, 2013). This thesis contributes to connectivity management literature by identifying three

practices academics follow in their attempts to manage work connectivity outside normal working hours: the practice of segmentation, the practice of prioritization, and the practice of distancing. These practices are key to capturing the complexity of connectivity management practices. They illustrate the diversity of practices which previous conceptualizations of this notion fail to capture.

11.2 Limitations of the Research

This section discusses the limitations of this research. This thesis addresses connectivity management from one end of communications (i.e. academics) and does not provide a sufficient account of the multi-way nature of communications (such as how connectivity is managed within a network of communications). This research focuses on connectivity taking place in one domain, i.e. outside working hours where professionals are presumed to have more autonomy in regard to their connectivity practices (Dery, Kolb and Maccormick, 2014). Incorporating an exploration of connectivity management within the domain of work, or in both domains, could have provided a more holistic view of connectivity management practices transcending the two domains (work and life).

Another limitation of the research includes data being collected at one point in time. A longitudinal study may have offered a richer picture of issues surrounding connectivity management practices as technologies and their uses by participants change and evolve over time. This would be particularly interesting in terms of enabling an understanding of how socio-material imbrications evolved over time within a professional organization.

In regard to methodological limitations, the research took place at two academic institutions in Saudi Arabia, and the findings reflect the cultural norms and values of that setting — for instance the expectation of receiving communications via mobile devices may not be typical in western contexts. The study's participants came from heterogeneous cultural backgrounds, preventing a sufficient account of the role of cultural norms for connectivity management. Despite its different manifestations and facets, work connectivity is a complex issue that many professionals face across countries. Also, the majority of the study's participants were (unintentionally) female, which means that the findings did not provide an account for gender variations.

11.3 Directions for Future Research

Some of the limitations outlined above could be overcome with future research. For example, while this research presents connectivity management practices as being influenced by four key parameters, further exploration of those parameters can complement the findings of this thesis. This, for example, includes exploration of connectivity management practices with a focus on individual variations in terms of gender, social identities, or leadership traits. The literature would also benefit from an in-depth exploration of connectivity management practices in various professional and cultural settings. Future research can also explore connectivity management as part of a network to provide more understanding of the politics surrounding connectivity.

The literature could also benefit from a more holistic view of connectivity management practices transcending the two domains (work and life). This can extend this research's findings through an account of social connectivity during work hours, highlighting any variations in connectivity management practices. This can consequently provide more understanding of identity issues surrounding connectivity management.

The findings of this thesis give rise to other avenues of research. This research introduced the technological boundary as a facilitator for the management of connectivity, and a new form of boundary between work and life domains. Further research is needed for further exploration of this boundary. This, for example, includes its formation and permeability in addition to its implications for work-life balance.

This research has also introduced two new terms to the theorization of socio-material imbrications, i.e. the 'layer' and 'foundation' of imbrications. This extended conceptualization can be utilized by future research addressing socio-material imbrications within organizations. This is expected to provide an account of variations in professionals' practices within an organization. This can also provide an in-depth understanding of factors constraining professionals' autonomy.

11.4 Implications for Practice

This thesis provides information that can be of value to practitioners beyond the academic community, for example legal, engineering, and health professionals for whom maintaining work connectivity outside working hours may be necessary. This last section

shows how the findings presented in this thesis translate into actionable items in academia as well as in a variety of other sectors.

For academics, the disproportion between work responsibilities and time at work can escalate the need to be connected after hours. Work connectivity was found to be largely attributed to workload and the need for communications, for which time formally devoted to work may be insufficient. Academics may take unfinished work home which may trigger this need for connectivity. For example, while academics' responses to students' enquiries outside class time should normally take place during office hours, this may not always be possible due to student timetabling issues, thus engendering a need for communications through alternative technological means outside formal office hours.

HR departments and teaching faculty could introduce policies that outline the institution's formal expectations in terms of such issues; for example, by ensuring the feasibility for students to attend office hours when needed, or by introducing a rule whereby academics may be contacted by email but with no obligation for response outside the normal working hours. This may be a good way forward to ensure that academics do not feel urged to be constantly connected in order to respond to communications after hours.

Universities should take note of escalating academics' responsibilities and consider the implications for work-life boundaries. They should recognize the wide communication network in which academics are involved and seek to enforce an organizational culture that dedicates appropriate and sufficient time for accomplishing job responsibilities, while explicitly respecting academics' privacy after hours.

The findings of this thesis can be of value to practitioners beyond the academic sector. For example, the management of connectivity can be constrained by organizational expectations of availability and the lack of explicit policies regulating such communications. The findings highlight the role of flexible working hours on blurring the boundaries between work and life, extending communications throughout the day, and making it the norm. This is especially evidenced with a lack of common time and dissimilar commitments among teammates. Organizations should consider the nature of practitioners' responsibilities and revisit the policies accordingly to reflect the requirements of the job, including the coordination of teamwork activities. Organizations should also take note of ubiquitous connectivity and update policies to reflect such

communication practices. This for example include introducing explicit guidelines for any requirement for communications outside the working hours. Practitioners may also benefit from the provision of company-issued devices whenever such communications are required. This is expected to enable a segregation between work and personal communications, facilitating the management of work-life boundaries.

This thesis illustrates that in certain scenarios, connectivity can be beneficial. It also provides evidence of work connectivity stemming from multiple platforms, such as phone calls, emails, and Instant Messaging (IM). This research is especially timely with the recent international initiative enforcing work-life boundaries. For example, this includes the 'right to disconnect' law in France (Rubin, 2017), and the German law forbidding managers from contacting employees on holiday (Stuart, 2014). Policy makers should recognize the complexity of connectivity management and aim to support practitioners' right to disconnect. This thesis recommends amendments to current policies. It suggests that a complete ban of communications outside working hours might hinder the accomplishment of some work responsibilities. Therefore, policy makers should aim to regulate, rather than to ban, connectivity outside working hours. This can include limiting the channels through which practitioners may be connective to work. For instance, when work communications are needed, practitioners may benefit from conducting these communications via formal channels, such as via the work email rather than personal phone numbers. This can support connectivity management by facilitating connectivity when required, while allowing space for temporary periods of disconnection when desired.

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Appendices

Appendix A: Interview Protocol for Academics

Before the interview:

- Introduce myself as a researcher
- Emphasis anonymity
- Briefly explain purpose of research
- Acquire participant's consent for participation and recording.

Interview questions:

Introduction - Contextual Background:

- General information: (Positions:_____; years in academia:_____; Dependents:_____).
- What are your responsibilities?
- For how many hours are you required to work per week (as per your contract)?
- How many hours do you actually work in the university and outside the university?
- (If there is a difference), Why do you work more/less?
- Do you have a flexible work schedule in terms of where and when you work? Explain?
    - At what locations do you work?
    - At what times do you conduct work activities?

The use of mobile technology: *(Asking for specific examples throughout)*

- Tell me about your use of mobile devices to communicate with individuals outside working hours regarding any aspect of work?
    - What devices do you use?
    - Which of these devices, if any, are provided by the university?
    - How do you communicate? (emails/calls/IM...)
    - How long does the communication last on these devices?
    - Why do you use each of these devices over the other?
- Who do you communicate with?
- What are the communications about?

- Do you normally need to immediately perform any work following up these communications, e.g., write an email or document, or carry on with additional communications…? Examples?
- What times of the day (outside work) do you normally engage in work communications?
- How frequent are the communications?

Management of Connectivity

- To what extent do you feel you might be approached regarding aspects of work during undesired times/days? Any stories to share?
- If you are unhappy with the way you are being contacted for work aspects outside working hours, what can you do to avoid this?
    - At specific times/days when you don't want to be contacted? Any stories to share?
    - For the long-term? Any stories to share?
- How effective is the following in controlling work communications that take place outside working hours…
    - Switching off the devices to escape work communications? Why?
    - Choosing not to respond to work communications immediately? Why?
- Do you think the workplace facilitates academics' management of work-life boundaries ?
    - If yes, how?
    - If no, why?
    - Any stories to share?

Perception of connectivity: *(Asking for specific examples throughout)*

- How do you feel about current work communication outside working hours?
- Why do you stay in touch with work outside working hours?
    - Do you think work communications outside working hours are necessary for keeping up with job responsibilities?
    - Why or why not?
    - Any stories to share?

Implications of connectivity: *(Asking for specific examples throughout)*

- Tell me how work communications outside working hours impacts your personal life? Provide an example if possible.
    - Social life?
    - Family time?
    - Family responsibilities?

- Tell me how work communications outside working hours impacts your work? Provide an example if possible.
    - Productivity/research output…?
- Have you previously tried changing any aspect of current communication practices?
    - If yes, tell me how? What are the results and consequences?
    - If no, tell me why?

Other issues:

- Would you like to add any comments, examples, or clarification regarding any of the issues we discussed?

Ending the interview:

- Expressing appreciation
- Acquiring contact details and permission for future communications

*Questions were subject to addition, alteration, or omission as the interview progressed.

Appendix B: Interview Protocol for Human Resource Practitioners

Before the interview

- Introduce myself as a researcher
- Emphasize anonymity
- Briefly explain purpose of research
- Acquire participant's consent for participation and recording.

Interview questions:

- To start with, may I ask about your position in the university?
- What are your responsibilities?
- In the university, how many hours are academics expected to work?
  - How is this different from actual working hours?
- Tell me about current institutional policies towards promoting the work-life balance of the academics?
- How does the university provide awareness of the significance of a good work-life balance?
- What mobile devices are offered to academics?
  - How are the devices expected to be used?
  - When are the devices expected to be used?
- What, if any, are the policies regarding work conducted at home outside regular working hours?
  - Specifically, policies regulating work communication?
- Did any of the academics report issues about excessive connection outside working hours?
- How does the university keep track of work conducted outside working hours (e.g., reported by managers, reported by academics themselves?)
- Do you think current labour policies facilitate academics' management of work-life boundaries?
  - Why or why not?
  - Tell me about instances where it appeared to be helpful?
  - Tell me about instances where it was problematic; for example, instances of stress or burnout caused by excessive working?
- How does the university ensure that current work practices are consistent with the regulations?

Other issues:

- Would you like to add any comments, examples, or clarification regarding any of the issues we discussed?

Ending the interview:

- Expressing appreciation
- Acquiring contact details and permission for future communications

*Questions were subject to addition, alteration, or omission as the interview progressed.

Appendix C: Information Sheet*

UNIVERSITY OF SUSSEX

PARTICIPANT INFORMATION SHEET

STUDY TITLE
Working Anytime/Anywhere: An Exploration of Connectivity and Its Implications

INVITATION
You are being invited to take part in a research study conducted at the University of Sussex at Brighton, United Kingdom. This document provide information regarding the research and the reasons to why you are invited. It also outlines the purpose of the research and why it is being done.

WHAT IS THE PURPOSE OF THE STUDY?
The purpose of this study is to explore professionals' control over work communications taking place outside working hours. The study started in September, 2016 and it is expected to continue for approximately four years. The research focus on academic professionals and looks into how they perceive and manage work communications outside working hours. The study aims to further the understanding regarding the implications of work connectivity and the way in which professionals shape the boundaries between work and life domains.

WHY HAVE I BEEN INVITED TO PARTICIPATE?
The study will be accomplished through the participation of HR practitioners, as well as professionals holding various positions at academic institutes. You are invited to this study because your contribution is deemed to be of value.

DO I HAVE TO TAKE PART?
While participation in the study is voluntary, your participation is highly appreciated. Please note that withdrawing from the study is entirely up to you. You are free to do this for any reason and at any time before the beginning of the data analysis on the 28th of March, 2018.

WHAT WILL HAPPEN TO ME IF I TAKE PART?
You can contribute to this study through participating in a short interview. Interviews will only take 40-60 minutes and will involve questions about your experience with work communications outside working hours.

WHAT ARE THE POSSIBLE BENEFITS OF TAKING PART?
Participation in the study will enable an understanding of the perceptions and implications of work communications outside working hours. The ultimate goal of this study is facilitate individuals' work-life balance through providing information to initiate policies that regulate such communications.

WILL MY INFORMATION IN THIS STUDY BE KEPT CONFIDENTIAL?
This study is ethically reviewed by the research governance procedure at The University of Sussex. All information during the interviews will be kept confidential. Unless you chose to disclose your identity, it will always remain anonymous.

WHAT SHOULD I DO IF I WANT TO TAKE PART?
If you agree to participate in the study, just reply to the email that was sent to you. You may also select the time and place where you would like the interview to be conducted.

WHAT WILL HAPPEN TO THE RESULTS OF THE RESEARCH STUDY?
The results of the research will be included in the dissertation for the Doctors of philosophy degree and might also be published in academic journals. If you wish obtain a copy of the final research, the findings can be forwarded to you upon your request.

WHO IS ORGANISING AND FUNDING THE RESEARCH?
This research is funded by the Saudi Arabian Cultural Bureau. It is organized by The University of Sussex, where I am conducting this study as a researcher in the School of Business, Management and Economics.

WHO HAS APPROVED THIS STUDY?
that the research is to be approved by the Social Sciences & Arts Research Ethics Committee at the University of Sussex.

CONTACT FOR FURTHER INFORMATION
In case you have any questions regarding this research or your participation, please do not hesitate to contact me directly. You can also contact Dr. Petros Chamakiotis, Dr. Dimitra Petrakaki, or Prof Sue Newell. Please find the contact details as below.

Njod Aljabr N.Al-Jabr@sussex.ac.uk
Dr.Petros Chamakiotis P.Chamakiotis@sussex.ac.uk
Dr. Dimitra Petrakaki D.Petrakaki@sussex.ac.uk
Prof Sue Newell Sue.Newell@sussex.ac.uk

THANK YOU FOR YOUR TIME AND PARTICIPATION.

DATE
28th Dec 2017

University of Sussex has insurance in place to cover its legal liabilities in respect of this study.

* The title of thesis has been amended after data collection and based on the data analysis.

Appendix D: Consent Form*

UNIVERSITY OF SUSSEX

CONSENT FORM FOR PROJECT PARTICIPANTS

PROJECT TITLE: Working Anytime/Anywhere: An Exploration of Connectivity and Its Implications

Project Approval Reference: ER/NA375/1

I agree to take part in the above University of Sussex research project. I have had the project explained to me and I have read and understood the Information Sheet, which I may keep for records. I understand that agreeing to take part means that I am willing to:

- Be interviewed by the researcher
- Allow the interview to be audio taped
- Provide additional information after the interview if needed

I understand that any information I provide is confidential, and that no information that I disclose will lead to the identification of any individual in the reports on the project, either by the researcher or by any other party.
I understand that information provided can be used in further research projects while maintaining anonymization.
I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at anytime before the start of the data analysis on 28th of March, 2018.
I consent to the processing of the information I provide for the purposes of this research study. I understand that such information will be treated as strictly confidential and handled in accordance with the Data Protection Act 1998.

Name: [redacted]

Signature [redacted]

Date: 15-03-2018

Working Anytime/Anywhere: An Exploration of Connectivity and Its Implications

* The title of thesis has been amended after data collection and based on the data analysis.

Appendix E: List of Participants

Participants from Springfield University

Participant	Position	Nationality	Gender	Age Group	Number of Dependents	Years in Academia	Years in Academic institution	College	Department
PA1	Lecturer	Saudi	Male	25-35	None	2 years	2 years	Business Administration	Business Administration
PA2	Professor	Syrian	Female	35-45	Single mom- 1 child	13 years	6 years	College of agricultural and food sciences	Agricultural Business and Consumer Sciences
PA3	Lecturer	Egyptian	Female	35-45	Married- 5 children	13 years	6 years	Applied studies and Community service	Computer science
PA4	Lecturer	Saudi	Female	25-35	Married- 1 child	4 years	5 months	College of Arts	Arabic Language studies
PA5	Department head	Sudanese	Female	35-45	None (grown up children)	35 years	8 years	Applied studies and Community service	Computer science
PA6	Teacher assistant*	Saudi	Female	25-35	Married- 1 child	6 years	6 years	Business Administration	Management Information Systems

PA7	Assistant Professor	Egyptian	Male	Above 45	Married with children	25 year	10 years	College of agricultural and food sciences	Agricultural Business and Consumer Sciences
PA8	Assistant Professor	Egyptian	Female	35-45	None	15 years	7 years	College of agricultural and food sciences	Agricultural Business and Consumer Sciences
PA9	Lecturer	Egyptian	Female	25-35	Married- 2 children	5 years	2 years	College of agricultural and food sciences	Department of Food Science and Nutrition
PA10	Teacher assistant*	Saudi	Female	25-35	Single	4 years	2 year	College of Arts	Arabic Language studies
PA11	Assistant professor	Egyptian	Male	Above 45	Married with children	8 years	3 years	Business Administration	Management Information Systems
PA12	Assistant Professor	Sudanese	Male	Above 45	Married- 4 children	6 years	5 years	Business Administration	Business Administration
PA13	Assistant Professor	Egyptian	Male	Above 45	Married with children	15 years	2 years	Business Administration	Business Administration
PA14	assistant professor	Sudanese	Male	Above 45	Married with children	9 years	5 years	Business Administration	Business Administration
PA15	Associate Professor	Algerian	Male	Above 45	Married- 2 children	13	7	Business Administration	Business Administration

PA16	Lecturer	Saudi	Male	25-35	Married with kids	7	7	Business Administration	Business Administration
PA17	HR practitioner	Saudi	Male	35-45	-	-	4	Deanship of Faculty Affairs	Academics Administrative and financial Affairs

*Academics have earned a Masters' Degree but were not promoted to lecturers. This is to motivate them to pursue higher degrees.

Participants from Hudson College

Participant	Position	Nationality	Gender	Age Group	Number of Dependents	Years in Academia	Years in Academic institution	College	Department
PB1	Lecturer	Zimbabwe	Female	Above 45	None (children are adults)	31 years	11 years	Business Administration	Business Administration
PB2	Lecturer	India	Female	Above 45	Married- with a teenager	15 years	9 years	Business Administration	Business Administration
PB3	Department head	India	Female	Above 45	Married- No children	18 years	7 years	Business Administration	Business Administration
PB4	Lecturer	Saudi	Female	25-35	Married with children	6 years	3 years	General Studies	Arabic Language studies
PB5	Lecturer	Filipino	Female	35-45	None	20 years	8 years	Computer Science	Computer science
PB6	Assistant Professor	India	Female	Above 45	None	16 years	8 Years	Business Administration	Business Administration
PB7	Assistant Professor	India	Female	Above 45	None	12 years	6 years	Business Administration	Business Administration
PB8	Assistant professor	Indonesian	Male	35-45	Married with children	15 years	8 years	Mechanical engineering	Mechanical engineering

PB9	Teacher assistant	Saudi	Female	25-35	Married with children	3 years	3 years	Interior Design	Interior Design
PB10	Lecturer	Saudi	Female	25-35	Married- 3 children	4 years	4 years	Computer science	Computer science
PB11	assistant professor	India	Female	Above 45	None	19 years	3 months	General Studies	Physics
PB12	Lecturer	Saudi	Female	25-35	Single, living with her family	1 year	1 year	Business Administration	Management Information Systems
PB13	Lecturer	India	Female	Above 45	Married- 3 children	18 years	11 years	Computer science	Computer science
PB14	Assistant Professor	Egyptian	Female	Above 45	Married- 3 children	17 years	7 years	Interior design	Interior Design
PB15	Lecturer	Indian	Female	Above 45	Married with children	20 years	10 yeas	Business Administration	Accounting
PB16	Lecturer	Pakistani	Female	35-45	Family and one son	11 Years	3 years	Interior Design	Interior Design
PB17	Lecturer	Filipino	Female	35-45	Single Mom with a teenager	26	5	Interior Design	Interior Design
PB18	Department head	Indian	Female	Above 45	Married with children	4 years in position	-	General studies	Chemistry

PB19	Lecturer	Saudi	Female	25-35	Married- No children	4	4	Computer Science	Computer Science
PB20	Department head	Indian	Female	35-45	Married with children	14	11	Computer Science	Computer Science
PB21	Department head	Sudanese	Male	35-45	Married- 1 child	15	9	Interior Design	Interior design
PB22	Assistant Professor	Filipino	Male	35-45	None	20	3	Business Administration	Business Administration
PB23	Lecturer	international	Male	35-45	None	25	10	Business Administration	Business Administration
PB24	HR practitioner	Saudi	Female	25-35	None	-	-	-	Employee Affairs