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An Attention-based Model of Multiple Team Membership

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ABSTRACT OF THE DISSERTATION

An Attention-Based Model of Multiple Team Membership

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Many knowledge workers are members of multiple concurrent teams. This arrangement of multiple team membership (MTM) increases demands for people's attention, but an understanding of how individuals allocate their attention to multiple teams and what the consequences are of attention allocation to different teams is lacking. In this dissertation, I start by reviewing the attention literature (Chapter 2) and examine MTM as a context in which individuals allocate their attention to multiple teams. I conceptualize attention in MTM that is distinctive from attention as previously studied in laboratories or attention as a mechanism of organizational decision making (Chapter 3). Based on the conceptual foundation, I conducted two empirical studies that explain antecedents and consequences of day-to-day focus on team projects (Chapter 4) and employee performance outcome of stable membership over a year (Chapter 5). I found that salience of the project and perceived general importance of the project to one's own goal at work predict one's focus on projects on a daily level. I also found that having stable membership with one's primary team predicts better performance after six months.

This dissertation provides a theoretical foundation and empirical support for studying attention in the context of MTM. It also contributes to teams literature by shedding light on members' perspective as they navigate their work in multiple teams.

CHAPTER 1. INTRODUCTION

In 1971, during a discussion on the advance of an information-rich world due to computerization, Herbert Simon emphasized that attention had become scarce, as there was a large amount of information that "consumes" attention (p. 40). The discussant summarized Simon's talk as being about an attention economy, where being able to efficiently process information defines business success (Davenport & Beck, 2001; González & Mark, 2004; Simon, 1971). After a half century, the amount of information that people have to deal with in organizations is increasingly overwhelming. Inspired by pioneering scholars including Simon, behavioral theorists have been studying issues surrounding the changing context for attention in organizations. Most of this work, however, has examined how organizations focus attention and store and retrieve information to make decisions (e.g., Durand, 2003; Hung, 2005; Ocasio, 1997). Relatively less research has been focused on the attention of individuals within organizations, although what individuals attend to determine what is actually getting done within the organization.

In organizations, employees' attention constantly jumps across various kinds of information. Focused attention continues to be essential for performing complex tasks, because attention is a critical source of information processing (Kahneman, 1973). One of the prominent objects of attention in today's organizations is team projects. Teams are a major source of work-related information and they often deal with complex problems that no one individual can easily

solve alone (Kozlowski & Bell, 2013; Marks, Mathieu, & Zaccaro, 2001; Mohrman, Cohen, & Morhman, 1995; Rapp & Mathieu, 2019; Wuchty, Jones, & Uzzi, 2007). Thus, it takes a great deal of mental energy from the members to make a concerted effort as a team. Assuming that members have good intentions and abilities to work properly, understanding the extent to which they pay attention to their team projects can provide a path to better understand individuals' experiences of working in teams and their teams' performance.

Making matters more complicated, however, is that many knowledge workers are involved in multiple teams at the same time (O'Leary, Mortensen, & Woolley, 2011). In this multiple team membership (MTM) context, the question of whether or not people pay attention to their team does not show the full picture. Instead, the question becomes how members divide their attention across teams. What influences the distribution of attention by individuals across multiple teams? How do the teams they pay attention to influence individuals' work experiences and performance?

In this dissertation, I investigate the attention allocation of people who are members of multiple teams. Because there is not much literature on attention in MTM, the purpose of Chapters 2 and 3 is to explore relevant research and concepts that could inform a conceptual understanding of attention in MTM. In Chapter 2, I start by reviewing previous literature on attention from psychology, organizational theory, and informatics. In doing so, I will focus on several takeaways that can be used in building a conceptual framework and empirical investigation of attention in MTM. In Chapter 3, I discuss attention in the context of MTM. I draw from previous literatures that studied attention-related constructs and propose conceptual foundations of attention in MTM. I also examine potential relationships with other constructs and attention allocation in MTM.

In Chapters 4 and 5, I present two empirical studies that investigate the role of focused attention in an MTM context. In Chapter 4, I present an examination of focused attention by looking into performance episodes and their duration. I test how the role of schema and the salience of projects can function as antecedents to explain focused attention. I also test whether focusing attention on important projects can potentially mitigate negative influences of MTM on individuals (e.g., job strain) and lead to higher satisfaction. In Chapter 5, I present a study where I investigate employees' focus by looking at their pattern of attention over time. This study examines archival data from a multinational professional service firm where team boundaries are dynamic such that individuals work on multiple teams at a given time point and their membership changes over time. Specifically, I will test whether stable attention to a primary team could predict higher individual performance rating. In Chapter 6, I end with a general discussion of the findings and future directions.

CHAPTER 2. REVIEW OF THE LITERATURE ON ATTENTION

To gain insight into attention in MTM, I explored several related areas of research that have studied attention, in addition to a very small collection of studies from the MTM literature. I start by examining the literature in psychology that provides general principles of human attention. While there is an extensive literature of attention in psychology, I review them here briefly as much to gauge the relevance and irrelevance of the literature to the direction of this dissertation. Next, I review the literature on attention of firms and individuals in organizational context to see how attention research has been conducted in organizational settings. Although the study of organizational attention is based on its analogy with human attention, it is worth reviewing as it shows deliberations for various aspects of organization (e.g., multiple people working together) that are relevant to attentional process in natural setting. Lastly, I add a brief review of the attention literature from the field of informatics, which provides empirical observations of individuals' attention allocation among information workers. All in all, this chapter provides a general overview of previous literature on attention. More literature relevant to each of Chapters 3, 4, and 5 is introduced in respective chapters.

2.1. Attention Research in Psychology

Within psychology, attention is commonly defined as "the selective processing of one aspect while ignoring other irrelevant aspects" (Dijksterhuis & Aarts, 2010, p. 470). This definition implies two important principles of attention: selectivity and capacity limitation

(Pashler, 1998). First, attention is selective. At any given moment, people can only attend to a subset of the stimuli that exist in their environments. A part of the reason why attention is selective comes from the second principle, that people have limited attentional capacity. Since attention is a finite resource, we cannot attend to everything in our environment at a given moment.

2.1.1. Methodological Implications

Along with the progress in conceptual understanding of attention, contemporary attention research has taken an information-processing approach where attention is assumed to be best understood by observing "fine-grained features of human behavior in laboratory situations" (Pashler, 1998). Because of this assumption, at the individual level, attention has largely been examined and observed in a laboratory setting where researchers can focus on particular stimuli and outcomes with high degrees of control (Kahneman, 1973). In this research tradition, researchers track, for example, eye movements or thought processes of participants in a lab, or they prime certain thoughts, emotions, and memories to manipulate participants' attention to certain stimuli (Csikszentmihalyi, 2014; Fiske & Taylor, 2013). Studies using these methods have revealed processes of attention in detail. For example, the famous filter theory, or early-selection model, of attention in cognitive psychology is rooted in a large body of laboratory studies (Broadbent, 1958). Some researchers who support this model have shown that when they let participants hear two different messages simultaneously, they can only hear and remember one message and will not even recognize the other message at all (Broadbent, 1958), meaning that the other message did not even reach the attentional process because it was filtered out early on.

While this stream of research has significantly improved our understanding of human attention at the cognitive level, some scholars have criticized the tradition for its disconnection from the natural setting, in which human beings interact with their environment as a "whole system" (Csikszentmihalyi, 2014, p. 6). More specifically, these scholars criticized lab studies for observing attention in a controlled setting, while a natural setting inherently contains many uncontrollable variables. This argument resonates with gestalt psychologists who find value in a phenomenological approach to the human mind that encompasses various psychological forces that operate on a person at a given moment or a context (Csikszentmihalyi, 2014; Fiske & Taylor, 2013).

In response to the criticism, some psychologists have provided methodological remedies, such as using experience sampling to collect real-time data on what people are paying attention to and what they are experiencing, feeling, or thinking at a given moment (Delle Fave & Massimini, 2004; Oishi, Diener, Napa Scollon, & Biswas-Diener, 2004). These methods, however, are not as widely used as experimental methods and are mostly found in research on certain topic areas, such as positive organizational scholarship (POS).

In summary, research on attention in psychology provides a general understanding of human attention. While only briefly summarized here, there is an extensive literature of empirical findings based on experimental methods in the field of psychology understandably because attention is the basis of any human cognition and behaviors (James, 1890). However, much less is known about attention in natural settings. Thus, in the following sections, I review studies on attention in other fields to build an attention-based model of MTM.

2.2. Attention Research in Organizational Theory

Using the metaphorical function of organizations as human brains (Morgan, 1986), most of the organizational studies of attention have been conducted at the organizational level. The organization-level attention literature advanced with the progress of the behavioral theory of the firm (March & Simon, 1958). Despite the differences in levels of analysis, the macro-level model is worth a closer look, as it can potentially inform how attention can be applied to other levels of analysis.

2.2.1. Attention in Context

Building on the basic ideas of attention from micro-level studies, Ocasio (1997) defined attention as "the noticing, encoding, interpreting, and focusing of time and effort by organizational decision-makers on both (a) issues: the available repertoire of categories for making sense of the environment and (b) answers: the available repertoire of action alternatives" (p. 189). This attention-based view (ABV) of the firm played a pivotal role in positioning the concept of attention in the context of organizations by considering their unique contextual factors. Specifically, Ocasio (1997) introduced three principles of attention in organizations: (1) the principle of focus of attention, (2) the principle of situated attention, and (3) the principle of structural distribution of attention.

The principle of focused attention indicates that attention is selective and what firms (or decision makers in the firms) do depends on what they pay attention to. This largely resembles the notion of selectivity in psychology (e.g., Driver, 2001 for a review) and serves as common ground between micro- and macro-level theories of attention. The assumption is that, like humans, firms selectively attend to a limited number of things at a time and their focus of attention influences their action. The principle of situated attention suggests that firms' attention

allocation is influenced by the situation they are in. Like the first principle, this principle also assumes that firms' attention is influenced by the context in which they find themselves, similar to how human attention works. Lastly, the third principle indicates that decision makers' attention is distributed throughout the firm by means of roles, structure, and norms. This last principle is unique to this firm-level theory, as firms are a complex structure whose attention allocation is influenced by various factors including people and the system, unlike individuals, who are primarily responsible for their own attention allocation and resulting behaviors.

In summary, building on theories of human attention, the ABV is a theory of attention that accounts for the unique characteristics of firms and provides an example of how the concept of attention can be applied to a different entity (i.e., organization) than individual people. This theory also explicitly acknowledges the complexity that underlies firms' attention due to interactions between the environment, issues, and decision makers, which is less of a concern for the micro literature, especially in the experimental paradigm of attention research.

2.2.2. Methodological Implications

An interesting finding from the empirical studies on attention in organizations is that researchers have taken creative approaches to measuring a firm's attention. The concept of organizational attention is rather abstract as it is derived from individual attention via a metaphorical analogy. Thus, firms' attention is often measured by the attention of managers, TMT, or CEO (e.g., Barreto & Patient, 2013; Maula, Keil, & Zahra, 2013; Nadkarni & Barr, 2008) and by examining qualitative data such as interviews (e.g., Hoffman & Ocasio, 2001). Content analysis of archival data such as letters, reports, or emails (e.g., D'Aveni & MacMilan, 1990) is also used to examine which issues or answers firms attend to.

While these approaches may not be directly applied to measuring attention in the context of MTM, they do suggest potential approaches for studying individual attention in MTM. The methods used in attention studies in laboratories (e.g., eye movement tracking, think-aloud technique) are not applicable to studying individual attention in organizational settings. But approaches like interviews or content analyses, which have been used in macro-level attention research, can be applicable.

In sum, there is great potential for conducting attention research of individuals in team context and developing this further to answer as yet unanswered questions. This requires a theoretical discussion of the unique characteristics that need to be considered in the study of attention at the meso level. This level of analysis lies between the micro and the macro and is influenced by the context of team – and more specifically, by MTM (Pillai & Meindl, 1998). Moreover, it would be beneficial to vary the measurement of attention depending on the empirical context to capture the dimension of attention that fits the context. Before moving onto theorizing attention in MTM, I review several studies from Informatics that concern attention of information workers.

2.3. Attention Research in Informatics

There has been a large stream of research on multitasking, interruptions, and task switching in the informatics literature (e.g., Czerwinski, Horvitz, & Wilhite, 2004). The sub-field of computer-supported cooperative work (CSCW), in particular, has investigated computer-mediated collaborations in the workplace. Recently, CSCW researchers have provided detailed descriptions of attention allocation when individuals work in multiple collaborations, based on both quantitative and qualitative studies. For example, Altschuller and Benbunan-Fich (2017) provided a conceptual discussion of this topic by interweaving the literature of MTM and

multitasking based on focus group interviews. The authors proposed that individuals juggle activities within and across individual, project, and group levels, and this juggling is influenced by both situational (e.g., a deadline) and personal (e.g., multitasking skill) factors.

González and Mark (2005) conducted an ethnographic study to examine multiple collaborations from the attentional perspective. The authors showed that workers switch attention across their collaborative contexts many times throughout the day, constantly update their overview of each project, and strategize how to make transitions between contexts. An interesting concept used in the study is the *working sphere* (González & Mark, 2004) as "a set of interrelated events, which share a common motive (or goal), involves the communication or interaction with a particular constellation of people, uses unique resources and has its own individual time framework" (González & Mark, 2004, p. 117). This concept of the working sphere essentially describes the "practical unit of work" (p. 116) that is constructed based on how individuals perceive their activities to be interrelated. The concept of the working sphere is useful in exploring attention allocation in MTM, as by its very nature, MTM tends to involve "interaction with a particular constellation of people." In such contexts, how individuals perceive different working spheres is very important.

Another interesting concept that is studied in the informatics literature is self-interruption (Dabbish, Mark, & González, 2011; Murray & Kahn, 2014). Self-interruptions occur when individuals remember to do something and initiate an interruption themselves (Czerwinski et al., 2004; Chong & Siino, 2006). This concept implies that "individuals are equally, if not more (than external interruptions), responsible for the direction of their own attention" (Dabbish et al., 2011, p. 1). This idea can be potentially meaningful in understanding attention allocation in MTM. In an MTM setting, individuals develop their own schema about the teams that they are a

part of. In other words, what they know and how they perceive their teams is likely to strongly influence their attention allocation. Thus, individuals play proactive roles in their attention allocation rather than passively responding to stimuli in the environment.

2.3.1. Methodological Implications

Attention studies in informatics have employed many kinds of data gathering methodologies, including interviews, observations, diaries, experience sampling, focus groups, computer logging, and biosensor data, to measure attention and related variables (Dabbish et al., 2011; González & Mark, 2004; Mark, Iqbal, Czerwinski, & Johns, 2014; Mark, Iqbal, Czerwinski, Johns, & Sano, 2016). The methodologies allowed them to capture more detailed and real-time activities than regular one-time surveys, increasing the fit between the method and the fleeting nature of attention. Researchers were also able to study attention from various perspectives by employing different methodologies. For example, Mark and colleagues (2014) used both computer logging and experience sampling to investigate both the actual events and people's perceptions of them. Similarly, the use of multiple methodologies would benefit attention research in management.

In sum, attention research in informatics provides useful empirical data in the form of detailed descriptions of the phenomenon of attention allocation in the workplace. The methods used for attention research also have implications for attention research in MTM.

2.4. Summary

The psychology literature on attention provides insights into the nature of human attention based on a large stream of experimental studies. It provides detailed descriptions of how attention functions under visual and auditory stimuli and, in turn, influences performance of different tasks. The literature on attention in organizations, on the other hand, is dominated by

macro-level research that has adopted the analogy of a human brain to explain firms' behaviors. Based on the behavioral theory of the firm, the ABV of the firm provided a foundation for studying processes within firms. Finally, some meso-level studies in informatics provide useful exemplars for future studies. All these literatures offer useful and interesting ideas for building an attention-based model of multiple collaboration.

Despite the useful insights, the applicability of these literatures to explaining attention in MTM is limited. While attention research in psychology gives us fundamental information about human attention, it is built on the experimental tradition, providing limited information about how attention works in natural settings with multiple competing issues demanding attention. In natural environments, stimuli are highly complex and underdefined and people develop their own perspectives and meanings regarding objects in the environment. Thus, theoretical and empirical models from psychology need to be adapted for studying attention in a complicated and less predictable environment.

The organizational-level literature complements the psychology literature by showing how attention to objects in natural settings can be theoretically defined and empirically studied. However, macro-level studies assume the firm as the unit of analysis, which introduces a lot more variation than is required for studying individuals. For example, the third principle of the ABV of the firm, systematic distribution of attention within the firm, is not directly applicable to individuals who themselves are the primary participant with regards to their own attention and behaviors. Some meso-level studies of attention inform the current dissertation, but much more research on the topic remains to be done.

Lastly, while the research from informatics provided a very detailed description of how individuals manage multiple collaborations and work spheres from an attentional perspective,

many unanswered questions remain, including the question of why attention patterns appear as they do. Specifically, building on the findings from the informatics literature, we could investigate the theoretical reasoning and cognitive, affective, motivational, and behavioral implications of managing multiple collaborations. For example, why do people switch their attention across many work spheres or collaborations throughout the day? Does having a strong preference or clear schema about the projects influence switch of attention? How do people's relationships with fellow team members in each collaboration influence their perception of projects? What happens when people focus and spend time on the projects that they find interesting and meaningful as opposed to ones that they perceive as a waste of time? Answering these questions will contribute to the management of MTM by both individual workers and the managers. Thus, I explore the initial answers to these questions in this dissertation.

Based on my review of the literature on attention, I conclude that a conceptualization of attention specifically designed for the MTM context is not readily available. While there are some descriptive findings of attention in collaborative settings, there is little theoretical discussion around why attention functions as observed. More importantly, I emphasize again that the team literature has been mostly silent about attention of members in teams. Unlike multitasking, MTM poses a unique challenge as a team is a complex entity that is comprised of various tasks and relationships with members. This is an important gap, especially in the increasing trend of MTM where individual workers are responsible for managing demands from multiple teams (Pluut, Flestea, & Curşeu, 2014). In the next chapter, I discuss attention, specifically in the context of MTM.

CHAPTER 3. ATTENTION IN MULTIPLE TEAM MEMBERSHIP (MTM)

Many knowledge workers are members of multiple concurrent teams. This arrangement of teams is called MTM. Having to juggle multiple teams poses many challenges to individuals, including division of attention. The increased demand for an individual's attention from multiple teams has been acknowledged in previous studies of MTM (O'Leary et al., 2011; Zika-Viktorsson, Sundström, & Engwall, 2006). Although research on MTM is emerging fast, only a few studies have empirically explored the topic of attention and there has been no explicit conceptualization of attention in MTM. Consequently, consensus about what attention in MTM is and how the phenomenon of attention allocation manifests is lacking.

In this chapter, I propose an attentional perspective on MTM. I first explain the two important assumptions that this perspective is based on, namely a focus on members and the idea of resourcing (Feldman, 2004). To understand what attention is in MTM, I use laboratory studies on attention as a comparison. Compared to attention that can be tracked in laboratories, attention in MTM can be characterized by a higher complexity of stimuli, a weaker connection between attention and performance, and a stronger presence of schemas about stimuli (i.e., teams). I suggest four ways in which attention manifests in organizations (i.e., performance episode, performance over time, team membership, and membership over time) and explain their relationship to each other.

This chapter also provides a general foundation for the next two chapters where I provide further conceptual development and plans for two empirical studies. Specifically, the first empirical study uses performance episodes (i.e., working on a project) as manifestations of attention allocation, whereas the second empirical study uses a pattern of team membership as a manifestation of attention allocation. Through the two studies, I examine what factors influence attention allocation to a project and what outcomes can be expected as a result of focused attention allocation.

3.1. Conceptual Foundations of Attention in MTM

In adopting the attentional perspective, there are two conceptual foundations that I build my argument on. One is that individuals make important contributions to team functioning. While this may sound obvious, the teams literature has largely been focused on teams as entities in themselves rather than composed of the individuals within them (Rapp & Mathieu, 2019). In contrast, the emphasis of attention in MTM starts from the assumption that it is important to focus on individuals and see how they function in the context of teams. This perspective is particularly relevant in discussing MTM. In traditional team-based organizations, only teams can serve as a grouping unit of multiple individuals and an individual is a member of a single team (e.g., Members A, B, and C in Team 1). But in MTM, individuals can theoretically serve as a "grouping unit" of teams (e.g., A is a member of Teams 1, 2, and 3). Therefore, as much it used to be important to know how different members (e.g., Members A, B, and C) are managed in a team (e.g., Team 1), the importance now lies in knowing how different teams (e.g., Teams 1, 2, and 3) are managed by individuals (e.g., Member A). Thus, when we put individuals in the center, their attention allocation becomes a fundamental mechanism that warrants further exploration.

My second conceptual assumption involves the idea of *resourcing* as opposed to *resource* in explaining the value of members in team functioning (Feldman, 2004). It is a common understanding that the value of resources comes from qualities inherent to the resource. For example, employees are valuable resources because they have certain expertise. According to resourcing theory, on the other hand, the value of a resource comes from how the resource is used to fulfill a purpose (Feldman & Worline, 2011). In other words, people as experts are valuable only when they actually use their expertise to perform. Extending this argument, I explain the mechanism of resourcing of team members with unique expertise and skills. For any human performance to occur, one has to first attend to a stimulus that is related to the performance. Presumably, if one does not perceive any stimulus in the environment, they would not process any information about the stimulus nor perform for it. In other words, attention allocation is the first step in information processing, which is the basis of any performance (Davenport & Beck, 2001; Kahneman, 1973). Thus, I suggest that the resourcing of members occurs through the allocation of attention. In the following sections, I elaborate each assumption in detail.

3.1.1. MTM as an Individual-level Phenomenon

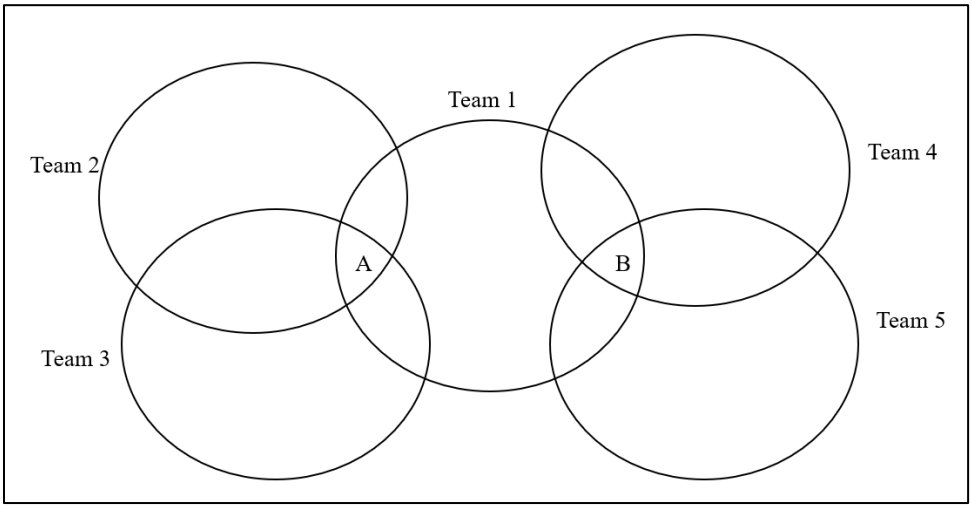
Multiple team membership is a multi-level phenomenon, and it involves both individuals and teams, since individuals work in multiple teams. As mentioned earlier, despite the multi-level nature of many team-related phenomena, most research on those phenomena focuses on team-level processes and outcomes. Similarly, much MTM research has taken the approach of focusing on teams and examined how the presence of MTM influences team outcomes or sometimes organizations (Crawford, Reeves, Stewart, & Astrove, 2019; Cummings & Haas, 2012).

There are several studies, however, that have regarded MTM as an individual-level phenomenon. In the earlier example of Rapp and Matheiu (2019), the authors looked at members' identification with multiple teams and its influence on individual-level performance and satisfaction. Pluut and colleagues (2014) explored whether MTM is perceived as demands or resources by employees. O'Leary and colleagues (2011) examined MTM in relation to individuals' productivity and learning. As evidenced in previous research, MTM is a context that can be explored by investigating individual-level phenomena.

This approach, centered around individuals, provides a different view that remains obscured when MTM is only considered as a collective-level phenomenon. In Figure 3.1 below, Person A and Person B are both in Team 1. If MTM is viewed at the team level, the observation will be focused on what A and B bring to Team 1, such as the percentage of time they spend on Team 1. But if MTM is viewed from an individual's perspective, it is possible to investigate what A experiences as she is working on or juggling demands from Team 1, 2, and 3. From this perspective, person A and B are both in Team 1, but they also deal with other demands or resources by being part of Teams 2 and 3 or 4 and 5, respectively. This provides a very different view on – and tells a very different story about – their work in an MTM setting.

Figure 3.1.

Hypothetical MTM Context for Persons A and B



In summary, MTM encompasses both individual- and group-level phenomena. At the team level, MTM implies overlap between multiple teams through shared members (Cummings & Haas, 2012; Mortensen & Haas, 2018). At the individual level, MTM implies the potential of project overload, increased demand, or divided attention (Pluut et al., 2014; Zika-Viktorsson et al., 2006). I argue that some aspects of MTM are better understood as individual-level phenomena. The attentional perspective focuses on questions such as how attention is divided into multiple teams and how individuals process the information from those teams. For these reasons, the conception of attention developed in this dissertation is primarily centered around individuals, how they process information from the environment, and what their experiences in relation to attention allocation are like.

3.1.2. From Resource to Resourcing

In developing a theory of attention in MTM, I highlight the notion of resourcing (Feldman & Worline, 2011). Resources are important in operating and managing an

organization. Resources are generally understood as "tangible or intangible assets that can be possessed or owned" (Feldman & Worline, 2011, p. 2) in many organizational theories, such as resource dependence theories (Pfeffer & Salancik, 1978). In this framework, the value of resources comes from the qualities that are inherent in the resources. This widely accepted assumption has been challenged by Feldman (2014), who approached resources from the practice theory perspective and argued that the value of resources comes instead from how they are used in practice (Feldman & Worline, 2011). Because people in organizations use resources to perform certain activities that they wish to pursue, "a resource is defined in relation to what it is connected to (people, ideas, materials) in practice" (Feldman & Worline, 2016, p. 311) and it is "anything that allows an actor to enact schema" (Feldman & Worline, 2011, p. 2). This definition highlights that resources are what lead people to a particular action. In other words, a resource is valuable only when it leads to the enactment of schema and eventually to an action that can accomplish a purpose.

This idea of resourcing is useful in understanding resources in MTM, especially resources that team members themselves contribute. When a team is formed, individuals are staffed as a resource for the team. From the resourcing perspective, knowing the members of a team only provides information about the situation thus far. This does not give a complete view of how resourceful the team is. To complete the view from the resourcing perspective, the extent to which the resource is used in practice needs to be considered. When the individuals only work for one team, it is more probable that the individuals (and the qualities that they bring, such as knowledge and expertise) are dedicated to that team. When the individuals work with multiple concurrent teams, however, it is highly unlikely that the resources they possess are fully or

uniformly distributed across these teams. Therefore, staffing to form a team is not enough to ensure the contributions of the members in MTM.

While the resourcing idea may seem overly sophisticated, it consolidates important insights about resources:

> First is the central insight of resource dependence: that what an organization can do depends on the use it makes of resources in the form of external dependencies (Pfeffer & Salancik, 1978). Second is the insight from the resource-based view of the firm: that resources come not only from the external environment, but are also and significantly generated internally (Barney, 1991, 2001; Eisenhardt & Martin, 2000; Teece et al., 1997). Third is the insight that the utility of resources depends on the configuration of the field, which comes from institutional theory (Leblebici et al., 1991). (Feldman & Worline, 2016, p. 311)

Likewise, adopting the idea of resourcing to team literature can potentially advance theorizing of membership and teams by presenting these insights in a process- and practice-oriented term which is demanded in studying the dynamics of teams including MTM.

According to Feldman (2004), the resourcing process consists of three elements: resource, schema, and action. As mentioned earlier, resource refers to what enacts the schema (Feldman & Worline, 2011). Schema refers to "subjective theories derived from one's experiences about how the world operates (Markus & Zajonc, 1985) that guide perception, memory, and inference" (Harris, 1994, p. 310). The relationship between the elements is cyclical, such that resource allows schema to be enacted and action is taken to enact schema. Action then feeds back to influence resources.

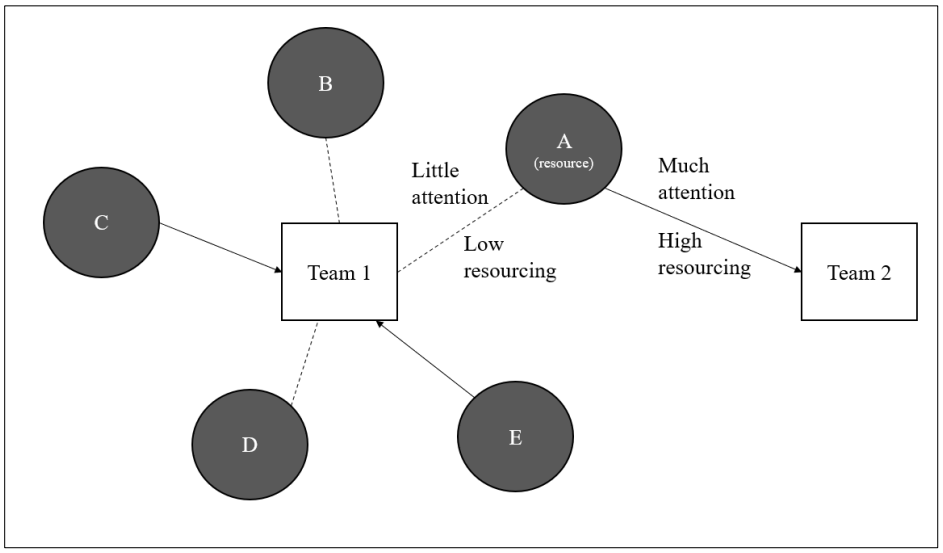
This cyclical relationship can be applied to MTM. According to the psychology literature, people's goals enact a certain kind of schema. For example, when a researcher has the goal to obtain tenure at a university, this goal influences a schema such that certain research projects are perceived as more important than others (e.g., the projects that are likely to be "counted" in the

tenure evaluation). Then, the schema about which project is more important influences her actions. She would exert more effort in performing those projects than other projects, which in turn influences her goal. For example, if her performance in those important projects is successful (or less so), she will strengthen her dedication to her goal (or alter the goal).

In this cyclical process, attention is the mechanism by which goals influence a person's performance in various projects. The researcher's desire to achieve her goal would be channeled only into certain projects over others, in accordance with the enacted schema. In other words, attention is involved in the process of *resourcing of resources*. Figure 3.2 provides an illustrative example. In this figure, the resources that person A brings into Team 1 are not fully resourced even though A is a member of Team 1, because her attention is mostly devoted to Team 2. This role of attention would not be readily visible when a resource is simply considered as an asset that is inherent in a team. Thus, resourcing theory not only increases the visibility of the role of attention but also provides a more adequate framework that depicts the use of members within MTM. In other words, in MTM, it is not accurate to say that the members belong to one team, so the extent to which people actually pay attention to a project becomes more relevant. In this vein, resourcing theory provides a more accurate representation of how members are utilized once individuals form a team.

Figure 3.2.

Illustration of Attention Allocation by Member A who is in both Team 1 and 2



Based on resourcing theory, I emphasize the importance of attention allocation to projects as a means to achieve resourcing in MTM. In this perspective, the properties that individuals bring into the team, such as expertise and knowledge, are only useful when they are resourced for a project through attention allocation.

3.2. From Laboratories to MTM

To accurately explain attention in MTM, it is necessary to develop a model that is specifically designed for this purpose. To do so, I first identify the unique characteristics of the multiple collaborations context that may influence the theoretical framework of attention to explain why directly applying the research findings from cognitive psychology is insufficient. Then, I develop a framework that integrates various concepts that can better explain attention in MTM.

3.2.1. The Unique Characteristics of MTM as a Context for Attention

There are several aspects of MTM that make it a unique setting for attention in comparison to the laboratories where attention has often been studied in the past. To begin with, team projects are different from the "stimuli" studied in laboratories in that a team project can consist of many stimuli. A stimulus in a laboratory would be a certain color, a word, or a shape, whereas a team project consists of hard-to-define problems that people work on, multiple people who are involved, and the space where people work together, to name a few. A fine-grained view may reveal an almost infinite number of details, from the unique color of one team member's shirt, to a word that someone wrote in an email, to a shape on a PowerPoint slide at a meeting. While each of these elements may be meaningful to psychological attention studies, they are not as meaningful for understanding workers' behaviors in organizations. Because a project is a higher-level object that encompasses many stimuli, attention may switch across stimuli but still fall within the umbrella of a project.

Relatedly, the connection between attention allocation and performance results is more distant than established in the laboratory because performance result is measured differently in the latter. In terms of outcomes of attention, cognitive psychologists measure performance by counting the number of times a subject correctly reports that he saw an object that appeared on the screen, for example. Here, paying attention to a stimulus is very closely related to performance (i.e., reporting that he saw the object). In contrast, paying attention to a team project is not as closely tied to the performance outcome, because attention to a team can mean attention to many different things within the umbrella of this team. Even if the stimuli that a person paid attention to can be identified, that would be part of a very complex process of collaboration such that its impact on overall performance may be negligible. A team project as an object of attention thus introduces complications for evaluating performance results.

Lastly, people develop their schema about projects as they work in collaborations. As members gain experiences with their team projects, they create impressions about and develop a varying degree of interest in their teams along the way – they create schemas. This is different from stimuli that people would encounter in laboratories where stimuli are introduced by the researcher and are unfamiliar to the subjects. Taken together, the role of schema in dividing attention to multiple teams is significant for understanding attention allocation.

In conclusion, attention in MTM is characterized by a complexity of stimuli, a weak connection between attention and performance, and the strong presence of schema about collaborations.

3.3. Manifestations of Attention in MTM

Given the unique characteristics of MTM, attention can manifest through different behaviors and cognitive experiences. While attention manifests as eye movement, for example, in laboratories, attention can manifest in different ways in MTM as the context is different. More specifically, while in psychology attention is often studied at the micro, cognitive level, spanning only several milliseconds, to measure meaningful attention in MTM, a more macro-level, larger-scale conceptualization is required.

In examining how attention manifests in MTM, it is fruitful to draw from constructs that have been studied previously, even if there was no explicit acknowledgment of their relation to attention. Building upon previous research reduces the risk of reinventing the wheel and allows me to incorporate appropriate related concepts in explaining the manifestations of attention in MTM. In this section, I propose four categories of constructs, drawing on extant concepts, that illuminate manifestations of attention in MTM. I start with the two broad categories of *performance on project* and *membership in project*. Then I divide each type of attention into two

sub-categories depending on the timeframe (i.e., performance episode vs. performance over time and membership vs. membership over time). Where applicable, I connect constructs from previous research to each category. To support my argument that these are manifestations of attention, I use the typology of manifestations of attention from LaBerge (1995) and explain how the four categories map onto the typology.

According to LaBerge (1995), attention manifests itself in three ways: selection, preparation, and maintenance. Selection relates to the fact that one of the important roles of attention is to select on a particular object or action to focus on or execute. For example, we know that laundry is receiving a person's attention based on his selection of the task. Preparation means that people expect certain stimuli to occur and thus react to them more quickly. In the same laundry example, when the person intends to do laundry tomorrow, he may start to gather up the things that he means to wash, and these preparations show that attention is allocated to laundry. Lastly, maintenance is sustaining attention to an object for an extended period of time. In the same example, the person would take some time doing laundry, going through the steps to complete the laundry. Sustained attention is also key to the performance of complex tasks. This typology of manifestations of attention helps in categorizing phenomenologically distinctive forms of attention. I use this literature to compare how these four constructs can be considered as manifestations of attention while accounting for the contextual uniqueness of MTM. The four categories of manifestations of attention are presented in Table 3.1 below. Further discussion of each of the categories follows the table.

Table 3.1.

Four Constructs as Manifestation of Attention Mapped with LaBerge's Typology of Three Manifestations of Attention

Category	Description	Previous research	LaBerge's typology
Performance episode	Working on a team project at a given time point Attention allocation is inferred based on work being done for the project	Task completion (Claessens, Van Eerde, Rutte, & Roe, 2010)	Selective attention
Performance over time	Working on a project over time Attention allocation is inferred based on time being spent on the project(s)	Time spent (González & Mark , 2004)	Selective attention; maintenance of attention
Team Membership	Being a member of a team leads the person to expect future demands from this team When a person becomes a member of a team, he engages in preparatory attention toward the project	e.g., # of teams to imply division of attention; Crawford et al. (2019) and many MTM papers	Preparatory attention
Membership over time	Least considered in previous research but particularly relevant when teams are fluid When a person works in different sets of multiple teams over time, their pattern of attention changes	N/A	Preparatory attention; maintenance of attention

3.3.1. Performance Episode

Whether or not a task from a project is completed can help to understand whether a project received attention. Some similar concepts have been tested in previous research. For example, Haas, Criscuolo, and George (2015) studied attention allocation in an online forum at a company. In the study, they measured attention by examining whether an expert responded to a problem posted on the forum. In other words, the task of writing a response to a problem was used as an indicator of attention.

In the time management literature, task completion is defined as "the degree to which the work goals that are set at the start of the day, derived from more general tasks, are in fact completed in the course of the day" (Claessens et al., p. 276). From an attentional perspective, attention is what processes information. This means that when a task is completed, the information regarding the project is processed which starts with paying attention to the project. In this sense, task completion can also be a selective manifestation of attention in LaBerge's (1995) typology, as it is implied that the completed tasks were selected over other tasks.

3.3.2. Performance Over Time

In the studies of attention in the informatics literature, working on a task itself has been considered as allocation of attention. For instance, González and Mark (2005) observed information workers as they work. The authors recorded whenever the informant took an action (e.g., sending an email to X) and tracked the duration of and switches between actions for several days. In this context, spending time on a project was considered as a manifestation of attention.

Time spent has often been used as a proxy for or equivalent of attention. For example, Cummings and Haas (2012) used the percentage of members' time spent on a team as a proxy for attention in their attention-based view of team design. This is a reasonable approach because

attention is selective and can only be allocated to one thing at a time (Fiske & Taylor, 2013; Kahneman, 1973). Thus, a pattern of time spent on an object can approximate the pattern of attention allocated to the object. Also, both time and attention are finite; however, compared to attention, time is easier to measure. In relation to LaBerge's typology, the time aspect of attention relates to the maintenance manifestation of attention (LaBerge, 1995).

3.3.3. Team Membership

Earlier in this chapter, I argued that membership itself does not guarantee resourcing of people unless the people actively choose to pay attention to the project. From a phenomenological perspective, however, membership can be a manifestation of attention because people feel differently about the teams that they are members of than those they are not members of. Indeed, MTM scholars have often mentioned how being in multiple teams can stretch people's attention (Crawford et al., 2019; O'Leary et al., 2011; Pluut et al., 2014; Rapp & Mathieu, 2019). An implicit assumption in this remark is that having membership in multiple teams can influence attention in MTM, regardless of actual performance in them.

Note that membership is a different type of attention than performance episode, because membership itself does not guarantee that a person is working on the team and paying attention to it at a particular moment. However, membership is still relevant to attention, since individual members will have expectations about potential demands from the project. Indeed, people's teams serve as their most proximal and salient work context and influence their behaviors (Rapp & Mathieu, 2019). Therefore, membership has the potential to be enacted as performance episode, which draws members' attention as they remain ready to perform. Thus, membership within a team can be a manifestation of attention allocation. In LaBerge's (1995) typology, this falls under the preparatory manifestation of attention.

3.3.4. Membership over Time

This category can be explained by the concept of team tenure. Team tenure is defined as "the length of time an individual has been with [a] team" (Schippers, Den Hartog, Koopman, & Wienk, 2003, p. 783), and it is different from team longevity, which is the length of time a team has existed. Duration of membership in the context of MTM can be considered as a form of attention because it means that a team has been on members' mind for a particular period of time *despite* the presence of other projects. This resonates with the core principles of attention discussed in Chapter 2, which show that attention is selective and a finite resource. In MTM, duration of membership means that one has participated in a project when they could participate in other tasks or projects instead.

In MTM, membership over time can also reveal another dimension that cannot be accounted for by team tenure. As illustrated in Table 3.2, if Person A was in Team 1, 2, and 3 for three months (Period 1) and then in Team 1, 4, and 5 the next three months (Period 2), she has six months of team tenure with Team 1 and three months with the other teams. However, because she works in different sets of multiple teams across the two time periods, it is also possible to see a pattern of membership over time. For example, she has a different pattern of membership from Person B who worked in Team 1, 2, 3 in Period 1 and Team 4, 5, 6 in Period 2. Person A has a longer tenure with one of her teams over the two periods, which Person B does not have. This variable will be revisited in Chapter 5.

Table 3.2.

Hypothetical MTM of Two People Over Time

	Person 1		**Person 2**	
	Period 1	Period 2	Period 1	Period 2
Team 1	●	●	●	
Team 2	●		●	
Team 3	●		●	
Team 4		●		●
Team 5		●		●
Team 6				●

Note. ● = membership

In summary, I propose that attention in MTM can be seen in four different forms depending on the types of attention and timeframe. Unlike the highly restricted form of attention measured in laboratories, the context of MTM allows for more diverse manifestations of attention. In this dissertation, Chapter 4 is based on attention as performance episode and performance over time and Chapter 5 focuses on attention as membership over time.

3.4. Summary

In sum, attention is an important resource in MTM, but there is little theoretical understanding of how attention manifests and functions in MTM. While attention at the individual level is important in MTM, individual attention as studied in psychology is not applicable to MTM because of its fine-grained nature. Instead, I propose four categories of attention in MTM which can manifest as performance episode, performance over time, membership, and membership over time. Some of the concepts have been previously studied but were not framed as a manifestation of attention. This chapter has provided a theoretical foundation for studying attention in MTM which is used in the next two chapters.

CHAPTER 4. FOCUSED ATTENTION IN MTM: A DIARY STUDY

Being a member of multiple concurrent teams often leads one to divide attention across teams. Each team has its own sets of timelines, norms, and members that constantly demand attention. To deliver quality performance, however, attention needs to be focused on a project long enough to process information from it (Davenport & Beck, 2001; Kahneman, 1973). The macro-level organizational attention literature uses the term "stable attention," which is a similar concept to focused attention. Stable attention is defined as "sustained attention to issues" and it allows "a deep but relatively narrow awareness of what goes on in a specific context" (Rerup, 2009, p. 878). Stable attention is needed particularly when issues in the environment are complex and require time and energy to process. This applies well to individuals in a context of multiple team membership (MTM), as team projects tend to deal with complex issues and problems that demand cognitive processing from each member (Cross, Ehrlich, Dawson, & Helferich, 2008; Cummings & Haas, 2012; Marks et al., 2001). A dilemma is that attention is inevitably divided in MTM but, because the work of teams can be complex, focus is still needed. Then, what are the factors that influence focused attention in MTM?

As reviewed in the previous chapter, there are several studies in organizational research that explore factors that influence the attention of individuals in organizations and in the MTM context. While some studies have explored predictors of attention like individual characteristics (e.g., tenure, rank, education), the theoretical explanation for why those factors might matter is

limited. For example, other contextual factors, such as relationships with fellow team members or an event that occurred on a particular day, might influence attention allocation. To better understand the phenomenon of attention allocation in MTM, it is useful to first broadly explore which features matter to individuals in allocating their attention in MTM before testing the effect of specific variables.

In this chapter, I investigate the attention allocation of people who are members of multiple teams. Specifically, I draw on the dual-process model from psychology that includes stimulus-driven (bottom-up) and goal-driven (top-down) attentional processes as antecedents of attention allocation. Using data collected from a diary study of 48 knowledge workers, I examine how a project becomes salient at a given moment and the extent to which individuals perceive the project as important in achieving their own goals at work as two antecedents of their focused attention. Additionally, I examine if focusing on more personally important projects influences individuals' work experiences, specifically job strain and job satisfaction in their MTM context.

4.1. Conceptualization of Focused Attention

In building an attentional model, I conceptualize focused attention in the context of MTM as being characterized by (1) a higher sense of focus, (2) a lower sense of distractions, and (3) a longer duration of attention. A higher sense of focus relates to the selective aspect of attention, which is the process of weighing one stimulus over others (Kahneman, 1973). A lower sense of distractions refers to the ease with which focus on a project can be distracted by demands from other projects. Duration is closely related to stable or sustained attention (Rerup, 2009). In other words, attention needs to be devoted to an object over enough time to process information related to it and to detect any cues and changes that may emerge.

Cognitive psychologists have discussed the notion of sustained attention or "vigilance," since the 1960s (Frankmann & Adams,1962). In the realm of work, sustained attention refers to a readiness and ability to detect unusual stimuli in the environment (Sarter, Givens, & Bruno, 2001). Researchers have been particularly interested in exploring why people fail to sustain attention (i.e., "vigilance decrement"; Thomson, Besner, & Smilek, 2015), which sometimes leads to errors in detecting significant events (e.g., British naval radar operators did not catch important radar signals as time lapsed; Mackworth, 1948). In MTM, stable attention is expected to enable individuals to process information related to a project and to detect any cues and changes to it. Thus, stable attention is an important aspect of focused attention in MTM. In the next section, I develop hypotheses around these ideas and explain how focused attention can be predicted and what consequences are expected from focus on important projects.

4.2. Hypotheses

4.2.1. Antecedents of Focused Attention

For a systematic framework to approach antecedents of attention, I draw on the concept of attentional control in the psychology literature. According to psychologists, there are two major ways through which attention is controlled (Corbetta & Shulman, 2002; Fiske & Taylor, 2013; Kanfer & Ackerman, 1989; Yantis, 1998). One through stimulus-driven or bottom-up control, where attention is controlled by salient characteristics of the stimuli. This stimulus-driven control is closely related to the concept of attention capture, where attention is automatically directed to salient stimuli (Jonides & Yantis, 1988; Yantis, 1993). For example, if a person is wearing a yellow shirt while everyone else is wearing black shirts, that person would draw an observer's attention because of the salience of yellow in the context. The other form of attentional control comes from a goal- or schema-driven or top-down control, where attention is

controlled by the goals, schemas, and intentions of the person. For example, if someone is looking for a friend who is wearing a red shirt, they would pay more attention to the color red on the street, even if there are other colors that are also salient. There are other typologies for this dual attentional control: passive and active modes of attention (Yantis, 1998, p. 223), reflexive and voluntary attention (Pashler, Johnston, & Ruthruff, 2001), and exogenous and endogenous attention control (Posner, 1980). The core idea that cuts through all these terminologies is that there is a dual process in attentional control driven by either stimulus in the environment or the perceivers themselves.

While the dual-process of attentional control is generally accepted, recent studies have shown that the two processes of attentional control can interact (Pashler et al., 2001). Normally, when people's attention is concentrated on one stimulus, other salient stimuli do not draw their attention (Yantis & Jonides, 1990). However, some psychologists have found evidence that if a distractor has the same property as the target, the distractor can succeed in drawing the person's attention (Folk, Remington, & Johnston, 1992). For instance, if a target initially captures attention through its salient color (e.g., a subject noticed a red dot on a white screen), a distractor that also introduces a salient color can capture the person's attention (e.g., a green dot in the same shape is introduced). Other stimuli that are salient for their shape (e.g., a red square is introduced), for instance, would not capture the attention as much (Gibson & Kelsey, 1998). This is because people's schema is activated by a certain property of the target (e.g., color), decreasing their ability to detect other stimuli (e.g., shape) in the environment. These findings show that schema-driven control can influence stimulus-driven attention.

This interaction between the two processes of attentional control is interesting from the perspective of attention in MTM. Compared to subjects in a laboratory, people in real life have

developed many interests and schemas about the stimuli around them. For instance, writing an email to a person in the same organization where the sender works is different from writing an email to a hypothetical person in a scenario provided in a lab. The former takes more or less attention depending on how the sender perceives the recipient based on their previous interactions, whereas the latter does not require this consideration. Because schemas about one's environment are relatively strong, it is more likely that one's goal-driven control influences stimuli-driven attention. LaBerge (1995) also mentioned that what holds attention is "a combination of changes in the stimulus itself and voluntary control that is sustained by a person's interest in the stimulus" (p. 37). In other words, the combination of stimulus-driven and goal-driven controls of attention predict focus and sustainment of attention (Corbetta & Shulman 2002; Kahneman, 1973). Applying this idea to MTM, I suggest that the salience of a project and its importance for one's goal separately and together influence individuals' focused attention.

First, the characteristics of a project can influence attention through the stimulus-driven process of attention control. Projects constantly give individuals new stimuli that draw their attention. For example, when people are focused on a project meeting for an hour, it means that they attend to arguments from team members, unexpected turns in the discussion, and emotional expressions of members, all of which provide them with stimuli that draw their attention to the project (Dane, 2013). In team projects, constant changes in stimuli are likely to be a common feature. As team projects involve multiple people and many interdependent elements, projects can advance and change regardless of a focal person's effort. For example, researchers may work on writing a draft of a co-authored paper and, a few days later, receive an email with edits on and questions about the document even though they have not paid any attention to that project since they sent it to their collaborators. In this sense, stimuli within each project can constantly change

but attention on the overall project remains. Here I hypothesize that the level of salience perceived by a person influences that person's level of focus on the project.

H1. Perceived salience of a project on a given day will be positively related to the level of focus on the project for the day.

Besides the stimulus-driven process, a goal- or schema-driven process can also influence one's attention. Schemas are defined as "a cognitive structure that represents knowledge about a concept or type of stimulus, including its attributes and the relations among those attributes" (Fiske & Taylor, 2013, p. 98). In MTM, individuals' goals can activate certain schemas about their projects, which can then influence how they evaluate each project. For example, if a person's goal is to get a promotion, the projects that will be counted in the promotion evaluation will become more important than other projects, where they are a team member simply to help. If another person's goal is to learn new skills, projects that challenge them to learn new skills may be considered more important than projects that only require them to repeat what they already know. Once individuals develop their schema of a project as something important for their goal achievement, they will pay more attention to it (Higgins & Bargh, 1987; Mack & Rock, 1998). In sum, I expect that the importance of a project, evaluated based on its relevance to one's goal, will have a positive relationship with the focus on that project.

H2. The perceived importance of a project in relation to one's primary goal(s) will be positively related to the level of focus on the project for the day.

In addition to the expected main effects of salience and importance for goals, salience and importance also interact. As multiple projects that are salient in the environment compete for one's attention, the role of one's own schema about the projects, reflecting own goals and

interest, can play a significant role in drawing their attention to the project. This implies how the two variables are empirically distinguished by their timeframes. Goal importance is expected to be consistent over a longer period than salience, because salience is about how changes in a project at a given point in time capture one's attention.

I suggest that importance can amplify the effect of salience. Even when a project is important to a person, he may not think of that project all the time because there may be other salient projects. But when projects are equally salient, focus on the important project would be stronger than in a case where a focal project is less important and only salient.

> *H3. The positive relationship between perceived salience of a project and focus on the project will be moderated by the perceived importance of the project at the day-to-day level, such that the relationship is stronger when the level of importance is high and is weaker when the level of importance is low.*

4.2.2. Consequences of Focused Attention on Important Projects

In previous research, MTM has been connected to higher perceived work demand and, thus, higher job strain (Pluut et al., 2014). I propose that this negative influence of MTM could be compensated for by individuals spending more time on important projects (i.e., important to them, as opposed to salience on a given day) because of the higher stimulus-response compatibility. Stimulus-response compatibility refers to the extent to which the response assigned to a stimulus is aligned with the way people would naturally act (Fitts & Deininger, 1954; Smith & Kosslyn, 2006, p. 290). When performing a task with high stimulus-response compatibility, people react faster, because less executive attention is required (Kornblum & Ju-Whei Lee, 1995). Similarly, when someone considers a project important, it is natural for that person to spend more time on that project than on others, which itself increases stimulus-

response compatibility. Because more time spent on important projects increases stimulus-response compatibility, people experience less stress from the dissonance between what they care about and what they have to work on (Fitts & Deininger, 1954; Smith & Kosslyn, 2006). In this research, I compare the relationship between the number of projects that people work on each day and the level of job strain.

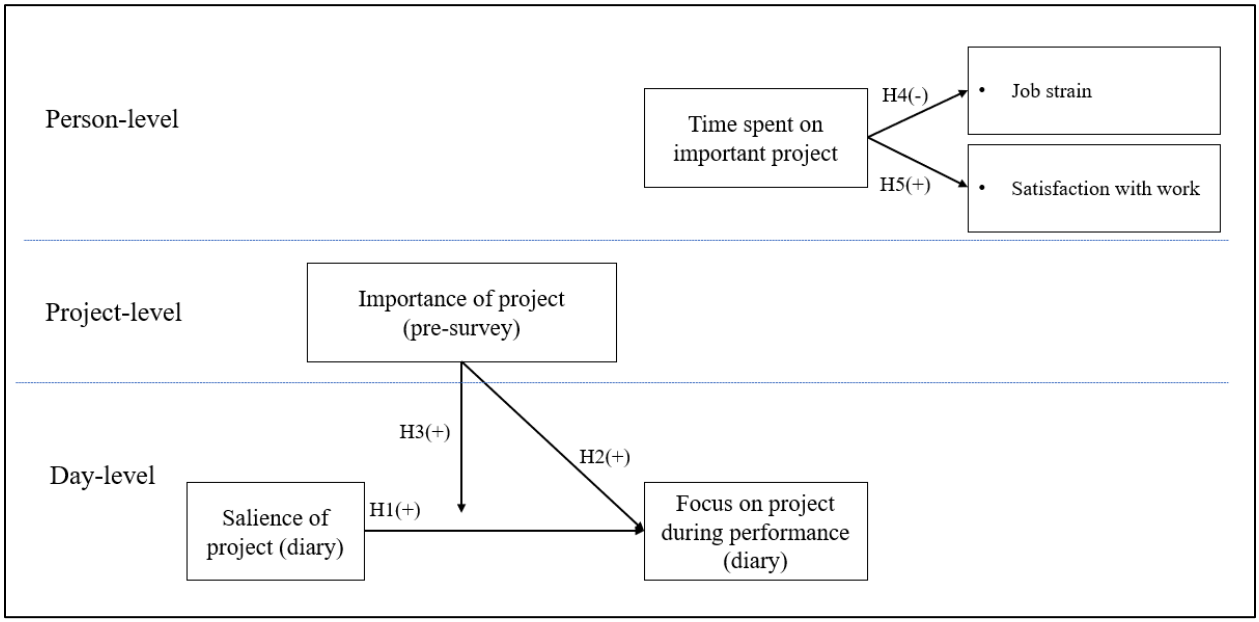
H4. The proportion of time spent on important projects will be negatively related to job strain over the study period.

Furthermore, I propose that spending more time on important projects will not only mitigate the negative influence of MTM but could in fact lead to positive outcomes. Specifically, I expect a positive relationship between the time spent on important projects and overall satisfaction with work. When focusing on important projects, individuals feel that they devote their mental energy meaningfully, instead of wasting it by working on projects that they do not consider valuable. Thus, individuals who spend more time on important projects likely feel more satisfied with their work. H1 to H5 are summarized in Figure 4.1.

H5. The proportion of time spent on important projects will be positively related to satisfaction with work over the study period.

Figure 4.1.

Hypothesized Model of Diary Study



4.2.3. Supplementary Qualitative Analysis

The details of how a project becomes salient were examined as a supplementary analysis. There can be many reasons why a project becomes salient. While the level of salience can be manipulated in laboratories, how salience varies in the real world depends on individuals' perceptions. Since salience cannot be manipulated, I observe and measure it instead and analyze the qualitative data. The result will be discussed as part of the discussion (Section 4.5).

4.3. Method

To test the hypotheses, I have conducted a diary study to partly account for the fleeting nature of attention. It is only partly, because the fleeting nature of attention cannot be completely controlled for in a natural setting (i.e., non-laboratory setting). Compared to other experience sampling methods that remind participants to take a survey multiple times a day, a diary study

only asks participants to fill out a short survey at the end of each day, making it less intrusive. While attention is captured in retrospect with a diary study, completing a short survey at the end of each day allows participants to use their relatively fresh memory about their work and attention (Mehl & Conner, 2012; Sonnentag, 2001). It also allows them to include records of all the projects they worked on during the day by taking time to reflect after they finish working for the day.

4.3.1. Sample

I collected data from full-time employed MBA students who are knowledge workers and members of multiple teams. I first contacted the instructors of MBA courses for permission to recruit participants at the beginning of one of their class sessions. I pitched my study to the students for around three to four minutes and explained the eligibility for participation. I then circulated the sign-up sheet where those who were interested in participating could write their name and contact information. Each participant was compensated with a $30 gift card.

As only members of more than one team were eligible to participate, about 20-30% of students per class signed up and some of them turned out to be ineligible despite their interest. After excluding the ones who did not respond to initial contact from my end, 57 participants took part in the pre-survey. Due to the nature of a longitudinal study, 48 participants completed all the surveys (i.e., the pre-survey, at least seven diaries, the post-survey). According to previous research, the smallest acceptable number of grouping units (individuals, in this case) is 30, and 50 is frequently found in organizational studies (Kreft & De Leeuw, 1998; Maas & Hox, 2005).

In the final sample, there were 15 (31%) females and 33 (69%) males. Their average age was 30.5 (*SD* = 3.8), and the average tenure in their organization was 4.6 years (*SD* = 3.6). On average, they were members of 3.6 teams (*SD* = 1.7), ranging from 2 to 10 teams. The 48

individuals worked on 149 projects over the study period and submitted 744 responses regarding their day-level tasks.

4.3.2. Procedure

Pre-survey. In a pre-survey, I first asked the participants to list the projects they were currently involved in. Participants were allowed to include up to one of their school teams. I allowed this because participants need to manage their attention among teams including their school project. Also, given that they are in an MBA program, their goals at work are often intertwined with the reason why they attend the program. After listing the projects, participants were asked to provide more detailed information about their current projects, including (1) what the project was about, (2) their role, and (3) the importance of each project for their own goals. Participants were then asked to (4) list the other members in each team, indicate (5) how close they were to each member, and (6) how frequently they interacted with them. This served as baseline data and provided information about the general perception that people had about their projects.

Diary. The participants responded to an online survey at the end of each workday for two weeks (10 workdays) since a two-week period has been shown to represent a generalizable sample of individuals' lives in previous studies (Barnes, Lucianetti, Bhave, & Christian, 2015, p. 1425; Reis & Wheeler, 1991).

At the beginning of the daily diary reporting, participants were asked to select the projects they worked on during that day. For the selected projects, they were asked (1) why they worked on it, (2) how much they felt like they needed to work on it right before they started working, (3) what specific activity they did for the project, (4) how long they worked on it, (5) how focused they felt, and (6) how much distraction they experienced while working on the

project. Lastly, they were asked (7) to rate their overall positive and negative affect for the day, their overall satisfaction with their work, and the extent to which the day was typical. There was also a textbox at the end of the survey where they could leave a comment about the day (e.g., what was unusual, what dominated their thoughts).

Post-survey. At the end of two weeks, participants were asked to fill out a post-survey that asked about their projects. This survey included questions about (1) perceived progress on each project, (2) satisfaction with their work on each project, (3) recovery experience (i.e., experiences that restore energy after stressful work situations, Sonnentag & Fritz, 2007), (4) stress in the past two weeks, and (5) the average hours of work.

4.3.3. Measures

In this section, I present the measures used in the analysis. Not all variables included in the surveys were used in the analysis. The exact questions and items used in the surveys are presented in Appendix.

Measures in pre-survey. Participants were asked to provide a list of all the team projects that they were members of. For each project that they provided, they answered a set of questions about the project. In the end, some baseline information was collected. The measures were relatively short with several 1-item measures to prevent exhaustion, because the set of questions was repeated several times, once for each project in both pre-survey and diary.

Importance of projects in terms of goals. To measure the importance of each project concerning one's goals, I first asked participants to write down their work-related goals. Then I asked them "How important is each project in accomplishing this goal?". Participants were given a 5-point Likert scale that ranged from "Not at all" (1) to "A great deal" (5).

Centrality and relevance of role. Participants answered two questions about their role in each project: "How central is your role in this project?" and "How much is your expertise for this project relevant to your participation?". Participants were given a 5-point Likert scale that ranged from "Not at all" (1) to "A great deal" (5).

Close relationship with team members. As a measure of their relationship with other team members, I asked participants to respond to two questions: "How close are you with this person?" and "How frequently do you interact with this person?". Participants were given a 5-point Likert scale that ranged from "Not at all" (1) to "A great deal" (5).

Measures in diary.

Salience. The salience of the projects was measured by two questions. First, participants were asked to explain why they started work on that particular project on that day. Then, they answered the question "Before you actually started working on the project, how much did you feel that you had to work on it today?". Participants were given a 5-point Likert scale that ranged from "Not at all" (1) to "A great deal" (5).

Focus. I asked participants to rate how much attention they paid to the project to measure their level of focus. For each project they worked on a given day, the question asked, "While working on this project today, how focused were you?" Participants were given a 5-point Likert scale that ranged from "Not at all" (1) to "A great deal" (5).

Duration. To measure the time participants spent on each project, they were asked to "Please specify when you worked on this project today (Examples: 8 - 9 am, 3 pm - 5:50 pm)." I calculated the duration based on the time data respondents provided.

Distraction. Distraction was measured by asking, "How much did you feel unnecessarily distracted while working on the project today?". Participants were given a 5-point Likert scale ranging from "Not at all" (1) to "A great deal" (5).

Measures in post-survey.

Job strain. To measure job strain, I used the measure adopted by Pluut and colleagues (2014), which contains six items that represent the anxiety-contentment axis of the Affective Well-being Scale to measure job-related strain (Warr, 1990). Participants rated six adjectives (i.e., tense, uneasy, worried, calm, contented, relaxed) based on their experience in the previous two weeks using a 5-point Likert scale ranging from Never (1) to Every day (5). The Cronbach's alpha was .85.

Satisfaction with work. Judge, Scott, and Ilies (2006) modified Brayfield and Rothe's (1951) job satisfaction scale and created a day-level job satisfaction scale. I modified this scale to ask participants about the level of job satisfaction over the study period. Although the original job satisfaction scale was developed to measure job satisfaction as a trait-like variable, its use for daily measure (Judge et al., 2006) implies that the scale would work for a two-week period. Sample items include "In the past two weeks, I felt enthusiastic about my work." Participants were given a 5-point Likert scale that ranged from "Strongly disagree" (1) to "Strongly agree" (5). The Cronbach's alpha was .78.

Control variables. Age was controlled as the level of focus can change with age. Gender was also controlled as men and women tend to have different patterns of attention (Bayliss, Di Pellegrino, & Tipper, 2005). For example, when attention shifts, cues can influence it (e.g., another person who is looking at the target direction). While people generally respond more quickly and accurately to targets with cues than targets with no cues, this effect is larger for

women. (Bayliss et al., 2005). Since the MTM context involves working on multiple tasks and shifts between them, gender can be a relevant variable.

To eliminate alternative explanations, I added several other control variables. First, I included the extent to which a participant's role in a team was central. One may pay more attention to a project because their role is important in the team. Another control variable is the relevance of the participant's work for a team to their own expertise. One may focus on a project because the project involves tasks that are highly relevant to their expertise. Lastly, I included two density measures of each participant's ego network in each team. I calculated their density for each team by asking them to rate (1) the extent to which they felt close to each member in the team and (2) how frequently they interacted with each member. These questions are relevant to this research as participants may focus on a project because they have a close relationship or frequent interactions with team members working on that project.

4.3.4. Analysis

Due to the difference in the data structure for the first part of the model (H1-3) and the second part of the model (H4-5), the two parts were tested separately. In the first part of the proposed model, the data has three levels: day-level tasks for each project (Level 1) are nested in projects (Level 2), and projects are nested in individuals (Level 3). The salience of a project and focus on the project are day-level variables, and the importance of projects is at a project level. According to the calculation of intraclass correlation (Koo & Li, 2016), the proportion of variance between individuals is 12%, between projects is 13%, and between days or tasks is 74%. This suggests that there is enough variability at each level to warrant a multilevel analysis. This part of the model was analyzed using Linear Mixed Models function in IBM SPSS Statistics 26. The predictor variables were grand-mean centered. For the second part of the model, all the

variables were measured for each individual, and this model was tested using a multiple regression model.

4.4. Results

Table 4.1 shows the mean, standard deviation, and correlations among the key variables in the model.

Table 4.1.

Mean, Standard Deviation, and Correlations Among Variables in Diary Study

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Survey																		
1 Importance	3.76	1.25	1	.26**	.45**	.14**	.07*	.12**	.00	.22	.01	.06	.31**	-.04	.13**	.23**	.21	.01
2 Central role	4.20	0.86	.26**	1	.34**	.11**	.01	.13**	.01	.25	.34*	.29*	.09*	.10*	.24**	.07	-.11	.25
3 Relevance	3.92	1.10	.45**	.34**	1	.20**	.05	.04	.08	.14	.04	.06	.18**	.03	.20**	.19**	.14	.08
4 Density - Closeness	3.07	0.83	.14**	.11**	.20**	1	.17**	.04	.13	.37*	.07	-.14	.06	-.04	.01	.06	.14	.10
5 Density - Frequency	3.83	0.69	.07*	.01	.05	.17**	1	.12**	.07	.21	-.01	-.21	.12*	-.03	.19**	.14**	.00	.22
6 Hours worked per week	6.30	1.05	.12**	.13**	.04	.04	.12**	1	-.01	.10	.01	.27	.01	-.01	.06	-.01	.03	.13
7 Tenure	4.61	3.59	.02	.01	.08	.13	.07	-.01	1	.11	.53**	-.21	-.43*	.24	.15	-.12	.09	.02
8 Number of teams	3.60	1.70	.22	.25	.14	.37*	.21	.10	.11	1	.06	-.05	-.16	.42*	.05	-.18	.22	.23
9 Age	30.50	3.84	.01	.34*	.04	.07	-.01	.01	.53**	.06	1	.09	-.10	.13	-.02	.03	.02	.14
10 Gender	1.69	0.47	.06	.29*	.06	-.14	-.21	.27	-.21	-.05	.09	1	.25	.06	-.04	.10	-.35*	.12
Diary																		
11 Focus	3.65	1.00	.31**	.09*	.18**	.06	.12*	0.01	-.43*	-.16	-.10	.25	1	-.31**	.14**	.41**	-.09	-.08
12 Distraction	2.44	1.02	-.04	.10*	.03	-.04	-.03	-.01	.24	.42*	.13	.06	-.31**	1	.13**	.00	-.19	.25
13 Duration	3.33	2.47	.13**	.24**	.20**	.01	.19**	.06	.15	.05	-.02	-.04	.14**	.13**	1	.33**	.10	-.03
14 Salience	3.42	1.24	.23**	.07	.19**	.06	.14**	-.01	-.12	-.18	.03	.10	.41**	.00	.33**	1	-18	.18
Post-Survey																		
15 Work satisfaction	3.42	0.80	.21	-.11	.14	.14	.00	.03	.09	.22	.02	-.35*	-.09	-.19	.10	-.18	1	-.39**
16 Job strain	2.84	0.76	.01	.25	.08	.10	.22	.13	.02	.23	.14	.12	-.08	.25	-.03	.18	-.39**	1

Note. $**p < .01$, $*p < .05$. Based on 48 individuals, 149 projects, and 744 day-level tasks. For gender, 0 = Female, 1 = Male. For all other measures, higher numbers indicate a higher degree of the variable. Above and below the diagonal are identical.

The first two hypotheses were related to the association of salience and importance with participants' focus on their projects. More specifically, the first hypothesis considers how much the bottom-up effect, or the extent to which a project was perceived as something that needs to be worked on immediately, was associated with participants' focus on their work on that project. The result provided evidence to support this hypothesis ($B = .33$, $p < .001$). The second hypothesis considers how much the top-down effect, or how much participants perceived a project as important for achieving their personal goals at work, was associated with their focus on a project. The result also supports this hypothesis ($B = .19$, $p < .001$). According to the correlations, salience was more strongly correlated than importance with focus (.41 for salience > .31 for importance). This is also reflected in the *t* statistics of the two variables in the final model (9.83 for salience > 4.07 for importance).

The third hypothesis was proposed to test the interaction between salience and importance. Since some recent literature in psychology has suggested the possibility of interaction between the bottom-up and top-down effects on attention allocation (Pashler et al., 2001), I proposed this hypothesis to test this interaction in the MTM setting. However, the result (Table 4.2) does not support this hypothesis ($B = -.01$, $p = .80$).

Table 4.2.

Estimates of Fixed Effects with Focus as the Outcome

	Model 1					Model 2					Model 3				
	Estimate	Std. Error	df	t	Sig.	Estimate	Std. Error	df	t	Sig.	Estimate	Std. Error	df	t	Sig.
Intercept	3.83	.71	45.60	5.43	.00	3.17	.53	52.04	5.96	.00	3.17	.53	52.20	5.97	.00
Age	.00	.02	49.70	.10	.92	.02	.02	58.06	1.36	.18	.02	.02	58.27	1.36	.18
Gender	-.15	.17	39.45	-.87	.39	-.13	.13	40.92	-1.04	.30	-.13	.13	41.07	-1.04	.31
Central role	.19	.07	371.90	2.54	.01	.08	.07	261.61	1.19	.23	.08	.07	267.23	1.21	.23
Relevance	.01	.06	235.40	.17	.87	.00	.05	202.14	-.07	.94	.00	.05	202.86	-.08	.94
Density – closeness	-.03	.07	331.79	-.41	.68	-.05	.06	232.52	-.79	.43	-.05	.06	236.56	-.78	.44
Density – frequency	.20	.08	297.01	2.50	.01	.08	.07	214.97	1.24	.22	.09	.07	212.62	1.26	.21
Salience						.33	.03	458.30	10.00	.00	.33	.03	459.61	9.83	.00
Importance						.19	.05	209.51	4.11	.00	.19	.05	213.19	4.07	.00
Salience * Importance											-.01	.03	468.84	-.26	.80

Note. Salience and importance were grand-mean centered. Listwise deletion was used to account for missing data.

In addition to the direct measure of focus, a lower level of distraction and longer duration were part of the operationalization of focused attention. Thus, I tested H1 and H2 again with the two variables as outcomes. As shown in Table 4.3, the salience of the project (B = -.05, p = .14) and the importance (B = .00, p = .98) were not significant when Distraction was tested as an outcome. Lastly, when tested with the duration as an outcome of the model (Table 4.4), salience was a significant predictor (B = .52, p < .001), while importance was not (B = .04, p = .72). The interaction of the two predictors (H3) was not tested for these two outcomes, because not all the main effects were significant.

Table 4.3.

Estimates of Fixed Effects with Distraction as the Outcome in Diary Study

	Estimate	Std. Error	df	t	Sig.
Intercept	-.01	.81	48.09	-.01	.99
Age	-.02	.02	50.98	-.77	.45
Gender	.32	.20	41.52	1.64	.11
Central role	.06	.08	403.32	.83	.41
Relevance	.01	.06	323.14	.13	.89
Density – closeness	.07	.08	407.43	.88	.38
Density – frequency	-.11	.08	362.09	-1.35	.18
Salience	-.05	.04	487.99	-1.47	.14
Importance	.00	.06	317.64	.02	.98

Note. Salience and importance were grand-mean centered. Listwise deletion was used to account for missing data.

Table 4.4.

Estimates of Fixed Effects with Duration as the Outcome in Diary Study

	Estimate	Std. Error	df	t	Sig.
Intercept	-.11	2.02	49.26	-.05	.96
Age	-.03	.06	51.23	-.44	.66
Gender	.54	.49	43.00	1.09	.28
Central role	.62	.17	436.61	3.63	.00
Relevance	.01	.14	355.24	.08	.93
Density – closeness	-.30	.17	448.63	-1.81	.07
Density – frequency	.70	.18	414.04	3.88	.00
Salience	.52	.08	478.64	6.63	.00
Importance	.04	.12	358.09	.35	.72

Note. Salience and importance were grand-mean centered. Listwise deletion was used to account for missing data.

The last two hypotheses (H4 and H5) cover the outcomes of spending more time on projects that are important to achieving one's goals. Although focusing on a certain project over a period of two weeks may not be impactful enough to drive one's performance outcomes, focusing more on the projects that one cares about may impact wellbeing and job satisfaction. As shown in Table 4.5, unlike what was hypothesized, spending time on important projects during the study period was not a significant predictor of job strain (B = -.06, p = .60) or satisfaction with work (B = .09, p = .44). To incorporate the effect of focus, I also ran the same analysis with the multiplied product of the importance of the project, the level of focus, and the duration of work (Table 4.6). The results were consistent with the original analysis (B = .01, p = .74 for job strain and B = .02, p = .30 for satisfaction). Therefore, the results imply that working on important projects was not enough to explain participants' perception of job strain and satisfaction during the period.

Table 4.5.

Results of H4-H5 with Duration Weighted by Importance as the Predictor in Diary Study

	Outcome: Job strain				**Outcome: Satisfaction with work**			
	B	Std. Error	t	Sig	B	Std. Error	t	Sig
(Constant)	2.05	2.05	2.54	.02	3.41	.81	4.22	.00
Hours worked per week	.06	.06	.57	.57	.07	.10	.68	.50
Gender	.19	.19	.75	.46	-.63	.25	-2.51	.02
Tenure	0	0	-.09	.93	.01	.04	.19	.85
Number of Teams	.1	.1	1.5	.14	.08	.07	1.20	.24
Duration weighted by importance	-.06	-.06	-.53	.60	.09	.12	.78	.44

Note. $N = 48$.

Table 4.6.

Results of H4-H5 with Duration Weighted by Importance and Focus as the Predictor in Diary Study

	Outcome: Job strain				**Outcome: Satisfaction with work**			
	B	Std. Error	t	Sig	B	Std. Error	t	Sig
(Constant)	1.76	.76	2.32	.03	3.43	.75	4.56	.00
Hours worked per week	.05	.10	.50	.62	.07	.10	.73	.47
Gender	.18	.25	.71	.48	-.63	.25	-2.52	.02
Tenure	.00	.04	.01	.99	.01	.04	.16	.88
Number of Teams	.09	.07	1.39	.17	.07	.07	1.02	.32
Duration weighted by importance and focus	.01	.02	.34	.74	.02	.02	1.05	.30

Note. $N = 48$

4.5. Discussion

The results show that the perceived salience and general importance of the project in achieving one's goal were positively related to their focus on the project (H1 and H2 supported). These significant results support the dual-process model of attention that has often been tested in laboratory settings. In terms of effect size, the salience of the task at the moment was a stronger predictor of focus than the general level of the importance of each project to individuals' goal. This may indicate a stronger correlation between variables that were measured at closer time points (salience and focus were measured in the diary survey, but importance was measured at the beginning of the survey period).

Another possibility for the results is that salience has a more complex meaning than importance, as measured here. As discussed earlier, salience was measured, rather than manipulated, in this diary study (unlike many psychology studies of attention conducted in laboratories). Participants provided a numeric rating of salience, but the reasons for their rating varied by situation. According to the supplementary analysis, sometimes salience was allocated on the basis of an email or request from other team members, while at other times, it was allocated on the basis of meeting schedules. Salience can also be allocated on the basis of routines, such as working on a monthly report. As there are many different reasons why a particular task or project may stand out, the concept of salience demands further investigation in natural settings. This would be best done using a qualitative approach, as salience itself is a novel concept in natural settings and future research can explore more data from various organizational settings to refine it.

The results also indicate that the relationship between the salience of a project and focus on that project is not moderated by the general importance of the project (H3 not supported). This result is not too surprising because the interaction between the two processes is a newly

emerging proposition in attention studies in psychology, and it has not received as much support as the dual-process model. In fact, the supporting evidence to date (e.g., Folk et al., 1992) is restricted to instances where salient objects (that influence one's focus through the bottom-up process) are introduced after one's attention is already directed to an important object (top-down), which could not be guaranteed in the current study. Moreover, the lack of support for the interaction provides valuable evidence that the two independent processes (i.e., top-down and bottom-up) exist in the natural setting as they do in laboratories. Future research could specifically manipulate contexts in which a salient task is introduced while someone is already working on an important project, although this will require more control over the environment. Or, this might be best done once there is more evidence of the effect from laboratory studies.

Lastly, the amount of time spent weighed by the importance and focus on the project was not a significant predictor of team members' sense of job strain and work satisfaction at the end of the survey period (H4 and H5). These hypotheses were formulated based on the assumption that spending time and effort on important projects would be rewarding to individuals. However, it is possible that employees feel a sense of achievement and meaning in finishing the challenging tasks, as opposed to working on tasks that are intrinsically rewarding. Moreover, employees seek concrete outputs to demonstrate their performance in organizations. They may find it rewarding to get any work done, regardless of how important they find each project for achieving their goals. Lastly, it is still possible that the two-week time frame was not long enough to capture the opportunities to work on important projects or for people to develop meaning and sense of reward from their teams. Future research can explore this possibility by including measures of sense of achievement and compare its effect with that of the general perceived importance of projects, or extending the study period.

Furthermore, several other variables can influence this model. For example, the extent to which team members' projects are considered valuable by their companies may influence how much they care about or focus on these projects. Because the attention of an organization or a CEO influences their employees' attention (Ocasio, 1997), it might be difficult for employees to separate their interests from the company's. Future research can explore this possibility by measuring the importance of a project from the organization's perspective (e.g., rated by the CEO or managers). Another variable to consider is individuals' control over their calendars. Different organizations or positions have different ways of managing their work schedules and this can be related to organizational tenure. When individuals have more control over their calendar, they may have a higher focus on projects in general, because they manage their calendar to optimize their focus.

4.5.1. Implications

In the knowledge industry, corporate profit is largely dependent on individuals' attention, since this is a critical resource in processing information and creating knowledge. Despite the advance of the "attention economy" (Davenport & Beck, 2001), little is known about individuals' attention in organizational settings. Attention is a finite resource, and the successful management of individuals' attention is becoming more important for organizational productivity and effectiveness. Especially in an MTM setting, attention needs to be divided over multiple teams. Each team has their own sets of knowledge, norms, and relationships, imposing high demand on individuals' attention. According to surveys, MTM is widely used in the knowledge industry, and 65-90% of knowledge workers work with more than one concurrent team (Martin & Bal, 2006). Therefore, the current study of attention in MTM will help understand an important aspect of individuals' attention in organizations.

This attention-based model of MTM also introduces a new perspective to our understanding of human resources in organizations. Because many workers are members of multiple teams, staffing people with the necessary expertise can no longer guarantee those members' full attention to a focal team. Therefore, a more fine-grained unit of cognitive resources is needed to explain how employees' attentional resource is used in teams. According to the resourcing theory (Feldman, 2004), the value of a resource comes from the use of this resource instead of the inherent qualities of the resource itself. Likewise, this attention-based model of MTM provides a means to explain the *resourcing* of human resources in team-based organization.

CHAPTER 5. MEMBERSHIP OVER TIME AND INDIVIDIUAL PERFORMANCE: AN ARCHIVAL STUDY

In many project-based firms, it is common for people to work on multiple teams and change their teams frequently over time. This arrangement can be described using the concepts of MTM and fluid teams (Mortensen & Haas, 2018). Team fluidity refers to "the extent to which the individuals working on a team change over time as people join or leave the team in response to the evolving demands of its work and environment" (Mortensen & Haas, 2018, p. 344). Previous research has expressed concerns about the potential negative effects of working with multiple concurrent teams on individuals' performance for two reasons. First, when members work for multiple teams, their productivity increases to a certain extent but decreases as the number of teams increases due to scattered attention (Chan, 2014). Second, as the number of teams increases, members also suffer from a lack of cognitive resources left for learning because of the increased variety of information coming from different teams (O'Leary et al., 2011). Adding team fluidity to MTM will only increase the level of demand on cognitive resources and in turn on individual performance. Many organizations start this joint arrangement of MTM and team fluidity to maximize the talent that they already have, but ironically, they potentially risk their top talent suffering from under-performance. To avoid falling into this trap, it is critical to better understand how this negative effect can be mitigated.

As alluded in the previous literature of MTM that explained the mechanism of the negative influence of MTM on performance using attentional terms (i.e., scattered attention, shortness of attention, and cognitive resources left for learning new information), team membership and attention are closely related. As discussed in Chapter 3 of this dissertation, when people join a team, they allocate attention (i.e., resourcing) or stay vigilant about future allocation of attention. Thus, in this chapter, I view team membership as one of the manifestations of attention at a larger scale (Gibson, Ostrom, & Ahn, 2000) that allows for understanding the implication of attention at a larger scale. Just as looking into daily change of weather (smaller scale) does not allow one to see the change in climate (larger scale) that occurs over years (Bansal, Kim, & Wood, 2018), examining attention at a daily level in a diary study, as I did in Chapter 4, is not suitable for seeing the larger-scale implications of attention, such as yearly performance ratings. Therefore, the current chapter provides a larger-scale view of attention and performance implication of membership.

In this chapter, I examine how maintaining stable team membership by devoting the most time to one's primary team over time predicts individuals' performance, even in the context of MTM and fluid teams. In addition, I propose recovery as a moderator that amplifies the effect of stable team membership on individual performance because one's attentional resource is bounded by their overall level of energy which is restored from recovery (Bennett, Bakker, & Field, 2018). To investigate this possibility, I use archival data from a large professional services firm where individual employees work on multiple teams at any given point in time (i.e., MTM) and also change their teams over time (i.e., team fluidity). The data contains each individual employee's membership information over three periods (each period being two months long) and their overall individual performance rating from their manager at the end of the year. This study

contributes to the literature on dynamic teams by incorporating an attentional mechanism to explain the effect of dynamic teams on individual performance. Given that attention allocation is critical in enabling any performance (Kahneman, 1973), I argue that it is a useful but understudied approach to bring attentional perspective into explaining performance. In doing so, I connect the concept of attention and team membership, which provides a novel approach to studying attention in MTM context (Gibson et al., 2000).

5.1. Theoretical Background

Multiple team membership alone tends to have mixed implications for individuals. In terms of performance, especially, some researchers speculate that working on multiple teams could have a curvilinear relationship with individuals' productivity and learning (Chan, 2014; O'Leary et al., 2011). Working on more than one team, in a small to moderate number of teams, may be conducive to productivity and learning. However, working on too many teams can be harmful, because attention is fragmented, which can hinder a person from devoting enough time and energy to any one project. A person may also have less time and attention available for processing new information that needs to be learned, because they are subject to demands from many teams (Chan, 2014; O'Leary et al., 2011).

Another phenomenon that is prevalent in team-based organizations is team fluidity. Fluid teams are widely used in many organizations (Arrow & McGrath, 1995), partly due to the flexibility it provides to utilize different people's expertise as task demands change (Edmondson, 2012; Valentine & Edmondson, 2015). Research on team fluidity is either focused largely on newcomer socialization (Bedwell, 2019) or on member turnover as a dependent variable (Dineen & Noe, 2003). Some studies have examined the effect of membership change on team performance. According to the review by Dineen and Noe (2003), while some researchers have

found evidence for decreased performance due to lost talent and knowledge with members' turnover (Goodman & Leyden, 1991), others have found evidence for improved performance due to the broader knowledge base as new members join (Kane, Argote, & Levine, 2005).

Relatively little research has directly examined the influence of team fluidity on individual performance rating. It can be speculated, however, that having to frequently adapt to new teams over time can be challenging for individuals' attention. This is because attention cannot be sustained long enough to get familiar with each team, demanding individuals attention to be allocated to multiple new stimuli in a relatively short period of time. Thus, the mechanisms of scattered attention and shortage of attention available to learn new information apply to fluid team arrangements as it is the case for a high-MTM context.

The literature on fluid teams has a long history, starting with the early research into open and closed teams in relation to team outcomes (McGrath & Altman, 1966; Ziller, 1965). Open teams are defined as "an interacting set of persons in a continuous state of membership flux" (Ziller, 1965, p. 165), while in closed teams, "the elemental composition remains constant" (p. 165). As summarized by Ahmed, Poole, and Pilny (2019), closed teams are often found to be better for higher team performance, because the extent to which a set of members stays together over time (stability) and the number of tasks a team performs together (persistence) have a positive relationship with team performance, mainly through ample opportunities for learning. Similarly, Maloney, Shah, Zellmer-Bruhn, and Jones (2019) found in their social network study of teams that members develop ties in their team experiences and maintain those relationships over time and benefit from them.

However, the benefit of stability and persistence is not as evident as it may seem. For example, Ramachandran, Tereyagoglu, & Unal (2017) found that product development teams

can benefit from added fluidity in creative roles as opposed to coordination roles, such as directors and managers. While this study was at the team level, there is a clear implication that changes and diverse experiences can be helpful in executing creative tasks. Viewing the matter at the individual level, Akşin, Deo, Jónasson and Ramdas (2021) examined prior partner exposure and team familiarity of ambulance transport agents. Prior partner exposure measured how individual agents acquired know-how from other experienced agents. Team familiarity measured familiarity with team members. The researchers found that prior partner exposure is key to increased performance for less standardized work, as the exposure to prior partners broadens the knowledge of team members. On the other hand, team familiarity is related to higher performance for more standardized work, as team familiarity enhances team members' coordination.

In summary, previous literature has revealed the complexity of the relationship between membership stability or persistence and team and individual performance. An observable trend, however, is that little research was done to examine the association between membership and individual performance. Moreover, research has explored either MTM or team fluidity as a source of dynamic team arrangements, neglecting the co-presence of MTM and team fluidity in many team-based organizations. When teams are overlapping (i.e., MTM) and fluid, individual members bring their experiences, history, and acquired knowledge with them as they move through different teams, just like teams develop their history, identity, and shared knowledge throughout their shared events (Trainer, Jones, Pendergraft, Maupin, & Carter, 2020). Thus, individuals' change or lack of change in membership in multiple teams can influence their experiences and the breadth and depth of information that they are exposed to, which, in turn,

can influence their overall performance one way or the other. The question then becomes: How does this mixed pattern of membership influence their performance?

I approach this conundrum from the perspective of attention. To be specific, I argue that maintaining stable team membership by devoting the most time to a primary team over time can allow individuals to achieve higher performance. Even when one gains rich experiences by being exposed to many teams over time, their performance over a certain time period (e.g., a year) may not benefit from those experiences, because the individuals may not have enough attention to process the experiences and information that they were exposed to. In other words, even if one gains a lot of experience and information, but their attention is scattered and they need to catch up with too many changes of membership, they would not have the attention left to retrieve relevant information and execute the tasks at hand. Before moving onto the empirical test for this possibility, I discuss theoretical foundations for studying membership to understand attention allocation in the following sections.

5.1.2. Scale of Attention

A limitation of the diary study in Chapter 4 was that I could not predict long-term performance outcomes from the information on attention change on a daily basis in only a two week period (Gibson et al., 2000). In the current chapter, therefore, I explore a different manifestation of attention in terms of scale. Scale is "the spatial, temporal, quantitative, or analytical dimensions used to measure and study any phenomenon" (Gibson et al., 2000). There are two kinds of scales that are often used in describing phenomena in social science: grain and extent. Grain is "the precision used in measurement" (Gibson et al., 2000, p. 219). For example, daily fluctuations of weather reflect a fine-grained resolution, whereas global climate change shows a coarse-grained resolution. As another example, daily fluctuation of stock price reflects a

fine-grained resolution, whereas a financial crisis shows a coarse-grained resolution. Extent is defined as "the magnitude of a dimension used in measuring a phenomenon" (Gibson et al., 2000, p. 219). For example, the differences between measuring for a day (narrower), a week, a year (broader), and so on.

Another example comes from an article on organizational attention. Bansal and colleagues (2018) used the concepts of grain and extent in explaining why organizations miss some issues in the environment. They argued that organizations miss the issues that do not fit their attentional structure. For example, when an organization is focused on issues at a specific time and place (e.g., day-to-day performance within the organization), they tend to miss larger, environmental issues (e.g., financial crises).

In studying a larger scale, coarse-grain phenomenon, a longitudinal perspective is valuable. In the context of studying attention, a longitudinal perspective can be applied to study individuals who are members of multiple teams and also constantly change their teams over time. In this context, an individual juggles multiple teams at any given time point and also needs to become accustomed to different teams over time. It would be misleading to only look at the intensity and duration of individuals' attention on projects at one time point, because they might be working on a completely different set of teams at another time point. This can alter the pattern of attention allocation and one's experiences in MTM.

5.1.2. Defining Stable Membership Over Time

Defining the stability of team membership in such context is not straightforward. As discussed in Chapter 3, stable membership in MTM is different from long team tenure. Stable membership is a manifestation of focus because of the context in which it is observed, MTM. In other words, stable or focused membership in MTM involves not only the consistent

involvement with one group but also the reduced attention to other teams at the same time (selectivity of attention). Likewise, working with a team for a long period of time increases the richness of work experience with the team, which, in turn, increases knowledge and skills related to the team (Stoker, 2008; Tesluk & Jacobs, 1998). However, when a person spends most time on a project for a long period of time in an MTM context, it means that the person paid attention to the focal team for a long period of time *despite* the presence of other projects. This selective allocation of one's finite cognitive energy explains how stable membership in MTM cannot simply be explained with the concept of team tenure, but rather can function as a manifestation of attention allocation. In other words, it is not just about the time one spends on a given team, but rather one's focus on a primary team given the presence of other teams.

As an illustration (Table 5.1), assume two people worked on Teams 1, 2, and 3 for three periods (I, II, and III). Although both of them are in Team 1, 2, and 3 for the three periods, their stability of focus is different. Person A's focus stays the same, such that her primary team is Team 1 throughout. Person B's focus, in contrast, changes such that his primary team is Team 1 in Period I but then it becomes Team 2 in Period II and then Team 3 in Period III. As is discussed in more detail in the method section, I measure the extent to which one's hours are devoted primarily to the same team over time as a measure of stable membership and thus focused attention.

Table 5.1.

Hypothetical MTM in Two Cases: Person A and B

	Person A			Person B		
	Period I	Period II	Period III	Period I	Period II	Period III
Team 1	60%	70%	60%	70%	10%	20%
Team 2	20%	10%	10%	10%	80%	10%
Team 3	20%	20%	30%	20%	10%	70%

Note. Primary team for each period highlighted.

In this case, Person A has high focus, as they consistently devote most of their time to the same team over multiple periods. On the other hand, the primary team that Person B devotes most of their time to changes, which is a sign of low focus. While this example only presents two rather extreme cases, many members would lie somewhere between those two extremes. The operationalization of the degree of focus is explained in the Method section. I end this section by noting that this operationalization of focus uses a larger timescale than the one used in Chapter 4, such that focus is measured based on an observation over several months instead of over ten days.

5.1.3. The Role of Recovery

Recovery refers to "the process that reverses the negative consequences of job demands and allows an individual's functional system to return to the baseline level of functioning" (Binnewies, Sonnentag, & Mojza, 2010, p. 420; Meijman & Mulder, 1998). Recovery is related to employees' wellbeing, as it is crucial not only in decreasing the level of strain and fatigue but also in increasing the level of vitality, energy, and positive affect (Craig & Cooper, 1992; Shirom, Toker, Berliner, Shapira, & Melamed, 2008; Sonnentag & Niessen, 2008). Additionally,

recovery was found to be related to higher job performance (Carmeli, Ben-Hador, Waldman, & Rupp, 2009; Totterdell, Spelten, Smith, Barton, & Folkard, 1995) and proactive behaviors (Sonnentag, 2003). Previous research suggests that recovery plays a "crucial intervening role in the relationship between stressful work characteristics on the one hand, and health, well-being and performance capability on the other hand" (Sonnentag & Geurts, 2009, p. 2; Bennett et al., 2017).

While there are various recovery activities that individuals may engage in, such as exercising or watching a movie, researchers have emphasized the *experience* of recovery as the attribute that underlies those activities (Sonnentag & Fritz, 2007). According to Sonnentag and Fritz (2007), four of the major recovery experiences often studied in the literature are psychological detachment, relaxation, mastery, and control. Psychological detachment has to do with the mental distance from work while not at work. Relaxation is a state in which one maintains a low activation level. Mastery allows individuals to face challenges that lead to learning. Lastly, control is the sense individuals have when they can freely manage their non-work time (Bennett et al., 2017).

The mechanism through which recovery experiences relate to wellbeing and performance is often explained using Meijman and Mulder's (1998) effort-recovery model. Bennett and colleagues (2017) nicely summarize the model as follows:

> Individuals mobilize psychological resources such as energy to engage in a work-related process, this resource mobilization leads to both task performance and resource depletion, and recovery occurs when the work-related processes end. If recovery does not happen, individuals incur negative effects such as impaired well-being. (p. 264)

In other words, recovery experiences allow people to restore energy when they are not actively facing work demands. If this recovery does not happen and the imbalance of energy persists, people suffer from impaired wellbeing and performance. As Beal, Weiss, Barros, and

MacDermid (2005) mentioned, restoring and preserving resources or energy during the non-work time is critical in successfully achieving tasks when the workday starts (Binnewies et al., 2010).

Given the high demand that MTM and fluid teams pose on individual team members, this affects their overall level of energy. In this vein, I argue that recovery is an important construct as an indicator of one's overall capacity to meet the demands from multiple teams. Even though stable membership is supposed to mitigate the negative effect of MTM and fluid teams, it is bounded by the limitation of the net amount of cognitive resource and energy that a person possesses.

5.2. Hypotheses

Having some stability in team membership can help individuals overcome the two liabilities of MTM that lead to lower productivity and learning, scattered attention and lack of attention left for learning. As discussed in Chapter 4, focused attention is critical in performing complex tasks (James, 1890; Kahneman, 1973) and most team projects are complex with various components, including taskwork, teamwork, and interpersonal relationship maintenance. If team membership is a larger-scale manifestation of attention, stable membership is comparable to stable, or focused, attention. While focused attention on a daily basis may not predict one's performance at the end of the year, stable membership over several months can make a more accurate prediction.

Furthermore, having stability in membership can allow people to leverage what they already know about their project, as opposed to fluid membership in which people have to constantly become accustomed to new teams and learn new information, get to know new people, and learn new norms. Researchers have theorized that MTM can hinder people from learning new information for their projects because they suffer from a lack of cognitive capacity

after exhausting it for multiple teams (O'Leary et al., 2011). When people have stable membership with their primary team, however, they will be able to free up some resources for other projects as they have less new information to learn for the primary team.

As higher productivity and learning are two important factors in enhancing individual performance (Walumbwa, Cropanzano, & Hartnell, 2009), I hypothesize that having stable membership on a particular team predicts higher overall individual performance ratings in an MTM context.

Hypothesis 1: Stable membership on a primary team will predict a higher individual performance rating.

5.2.1. The Moderating Effect of Recovery

Being involved in multiple teams poses a high demand on members (Pluut et al., 2005). Moreover, in highly fluid project-based organizations, members constantly join and leave different teams. The cognitive effort required to learn about new tasks, how to work with new team members, and how to complement knowledge among members who have not worked together as a team before causes stress (Lewis, Belliveau, Herndon, & Keller, 2007). Previous research on stress has shown the curvilinear (i.e., inverted-U; Schuler, 1980) or negative linear relationship (Jamal, 1984) between stress and performance, indicating that excessive stress is detrimental to individual performance. While stable membership with a primary team is expected to decrease the negative effect of multiple teams through increased attentional focus and opportunities for learning, excessive level of stress can still be detrimental to performance.

As discussed, recovery is crucial for mitigating the negative effect of work demands on performance (Bennett et al., 2017). When team members have the chance to recharge their energy in between their work sessions, after each day of work or on weekends, they will take

more advantage of stable membership than if they do not get this chance to recover. Although cognitive energy is a renewable resource, it is also limited and can only be allocated to so many stimuli in the environment at a given moment. Restoration of energy is thus essential to maximize the positive effect of focused attention coming from stable membership. Therefore, I hypothesize the moderating effect of recovery on the relationship between stable membership and individual performance.

Hypothesis 2: The relationship between stable team membership and individual performance rating is moderated by recovery, such that the relationship is stronger when recovery is high.

5.3. Method

5.3.1. Data and Participants

I gained access to a secondary dataset that was collected from a large professional services firm. The dataset includes 1,425 respondents in 322 teams from multiple offices in the US. Due to the missing performance data for some individuals, after listwise deletion, 668 respondents were included in the sample. The company has a project-based structure, and each employee tends to work on multiple teams at the same time. Many of them also change team membership constantly (i.e., high team fluidity). The teams are built around the clients they work for. The dataset includes team membership data for three time periods, with each period spanning two months. The data for each two-month period contains the primary, secondary, and tertiary teams of each individual. The order is determined based on the number of hours individuals spend on each team in a given period. Thus, this data shows both multiple team membership in each period and changes of membership over time.

5.3.2. Measures

Focused attention based on membership on primary team. As described above, the membership dataset shows the membership patterns (i.e., primary-secondary-tertiary) over the course of three 2-month periods. This means that there can be up to three primary teams over the three periods, and it is not always clear which team is the true primary team for each individual. To remedy this issue, I selected the *supra-primary team* for each individual and coded the stability of membership. Below I explain the process.

The supra-primary team was coded based on the extent to which a team is recorded as a primary team for each individual over the course of three periods (T1, T2, and T3). It is easiest to discern a team as a supra-primary team when people worked for this team as their primary team in all three time periods (i.e., team X appears as primary team in T1, T2, and T3). It is still easy to discern one's primary team when people worked for a team as their primary team in two out of the three time periods (e.g., team X appears as primary team in T1 and T2 but not in T3). In these cases, the team that appears most frequently as primary team is considered their supra-primary team. To measure their focused attention, I counted the number of times the supra-primary team appeared in the three periods (e.g., 3 times and 2 times, respectively, for the two examples above).

It becomes trickier when there are three different teams that appear as primary team in three periods. For example, people may have team A as primary team at T1, team B as primary at T2, and team C as primary team at T3. In this case, it is difficult to discern their supra-primary team. To resolve this issue, I created five categories, summarized in Table 5.2 and described below.

Table 5.2.

Coding Scheme for the Supra-Primary Team Variable

Preference	Category	Description
High	1	A team that appears once as primary and twice as secondary in an employee's teams list
	2	A team that appears once as primary, once as secondary, and once as tertiary in an employee's teams list
	3	A team that appears once as primary and once as secondary in an employee's teams list
	4	A team that appears once as primary and once as tertiary in an employee's teams list
Low	5	All different primary teams with no information of relative standing

Generally, even when three different teams appear as primary in the three periods, a team that appears more frequently (including as non-primary) was considered as to have more stability than a team that appears less frequently. For example, a team that appears three times (Category 1 and 2) is considered as more stable than a team that appears only twice in total (Category 3 and 4). When there are two teams that appear equally frequently, I gave more weight to teams that appear as a primary team, followed by those as a secondary team, then followed by those a tertiary team. For example, for two teams that both appear three times, the one that appears as primary in T1 and secondary in T2 and T3 (Category 1) would be considered to be more stable over the one that appears as primary in T1, secondary in T2, and tertiary in T3 (Category 2) because the former appeared as primary/secondary/*secondary* while the latter appeared as primary/secondary/*tertiary* in the three periods.

Regardless of which team was selected as their supra-primary team, Categories 1 through 4 were all assigned "1" in their focused attention variable, because their supra-primary team appeared only once as primary team. However, this complicated process of coding is still necessary to improve the accuracy in determining the supra-primary team.

Category 5 includes cases where there is no indication of which team would be the supra-primary team. For example, if a person was only in team X in T1, only in team Y in T2, and only in team Z in T3, there was no other data to determine which one should be that person's supra-primary team. Such case was coded as missing in focused attention variable.

Individual performance rating. In this company, individual performance is rated once a year by the managers. Individual performance was rated six months after the third wave of team membership data was collected. The rating scheme includes five tiers from 1 to 5 where Tier 1 indicates the best performance and Tier 5 indicates the worst performance. This variable was reverse-coded such that a higher number indicates higher performance.

Recovery. Recovery was measured at each time the membership data was recorded using a four-item scale that pertains to four major dimensions of recovery, namely, psychological detachment, relaxation, mastery, and control. The items include: Outside of work, (1) I forget about work (unless there is an ongoing client emergency), (2) I use my time to relax, (3) I seek out intellectual challenges, and (4) I decide my own schedule. The Cronbach's alpha for the scale ranged from .73 to .78 for the study period.

Control variables. I controlled for gender, rank, individual performance rating from the previous year, and the average number of teams in testing both hypotheses. Gender can be a source of bias in performance rating and rank tends to correlate with performance as high performers are often promoted. The performance rating in the previous year is likely to be

correlated with the rating in the current year. Since the predictor variables are from the year when the data was collected, I controlled previous year's rating to isolate that particular year of interest. Lastly, it is possible that high performers are working for more teams due to their excellence or individuals' performance is compromised due to the distractions from a large number of teams. The average number of teams was a separate variable in the dataset that counts the number of all teams an individual was a member of, beyond the three teams reported as employees' primary, secondary, and tertiary teams in each period. The dataset only had the number of teams as a standardized Z-score for each period. I averaged those Z-scores across the three periods to include in the hypothesized model.

5.3.3. Analysis

I tested the hypotheses by running multiple regression in SPSS. The main equation consisted of the extent to which a person devotes the most time to a primary team over the three time periods as the predictor of individual performance rating. I then included the average level of recovery over the six-month period and its interaction with the stable membership variable.

5.4. Results

The Table 5.3 shows the descriptive statistics, including mean, standard deviation, and correlations between variables.

Table 5.3.

Mean, Standard Deviation, and Correlations among Variables in Archival Study

	M	SD	1	2	3	4	5	6	7
1 Stable membership (focused attention)	2.25	.70	1	-.02	.12**	.10**	-.02	.05	-.23**
2 Average recovery	4.65	1.07	-.02	1	.02	-.02	.11**	-.12**	-.02
3 Performance	4.08	.82	.12**	.02	1	.50**	-.01	.18**	.04
4 Performance – previous year	4.02	.80	.10**	-.02	.50**	1	.01	.32**	.03
5 Gender	1.55	.50	-.02	.11**	-.01	.01	1	.13**	-.04
6 Rank	2.20	1.07	.05	-.12**	.18**	.32**	.13**	1	.16**
7 Standardized number of teams – average across three periods	-.05	.99	-.23**	-.02	.04	.03	-.04	.16**	1

Note. **$p < .01$. $N = 694$. Above and below the diagonal are identical.

To test the first hypothesis that having stable membership in a primary team will predict a higher individual performance rating, I ran a regression with the coded primary membership variable as a predictor of the dependent variable of year-end performance data. The result (Table 5.4) provides support for Hypothesis 1 ($B = .10$, $p = .01$). The result remained significant when gender, rank, individual performance rating from the previous year, and the average number of teams were controlled.

Table 5.4.

Result of Regression Models for Archival Study (DV = Individual performance)

	Model 1				Model 2				Model 3			
	B	Std. Error	t	Sig	B	Std. Error	t	Sig	B	Std. Error	t	Sig
Constant	2.14	.17	12.99	.00	2.18	.17	13.21	.00	2.19	.17	13.23	.00
Performance – previous year	.49	.04	13.45	.00	.48	.04	13.17	.00	.48	.04	13.16	.00
Gender	-.05	.06	-.84	.40	-.05	.06	-.83	.41	-.05	.06	-.86	.39
Rank	.02	.03	.54	.59	.02	.03	.53	.59	.01	.03	.46	.65
Standardized number of teams – average of 3 periods	.02	.03	.53	.60	.04	.03	1.11	.27	.04	.03	1.20	.23
Stable membership					.10	.04	2.41	.02	.10	.04	2.48	.01
Recovery					.03	.03	1.01	.31	.02	.03	.93	.36
Stable membership x Recovery									.03	.04	.82	.41

Note. *N* = 668. Stable membership, recovery, and the interaction were centralized due to the high multicollinearity.

The second hypothesis suggests that the relationship between stable membership and individual performance rating is moderated by the level of recovery. The result indicates that the main effect of recovery (B = .02, p = .36) and the interaction between stable membership and recovery (B = .03, p = .41) are not significant. Thus, the second hypothesis is not supported. The effect of stable membership, however, remained significant (B = .10, p = .01) when gender, rank, individual performance rating from the previous year, and the average number of teams were controlled.

5.5. Discussion

The purpose of this study was to examine the effect of stable team membership in predicting individual performance and the amplifying role of recovery as a moderator. I tested the hypotheses using an archival dataset from a large professional service firm. I found that stable team membership predicts individual performance after six months.

An important assumption that I introduce in this study is the parallel between the stability of membership and focused attention. Based on the concept of scale (Gibson et al., 2000), I presume that stable membership is a larger-scale manifestation of focused attention. Just like focused attention is key to the performance of complex tasks (Kahneman, 1973), stable membership predicts enhanced performance, even in an environment where MTM and team fluidity are prevalent. This is a useful finding that opens up the possibility of adopting an attentional perspective for studying performance in dynamic team settings. In addition to the fact that there is an overwhelming amount of information consuming workers' attention in their workplace (Simon, 1971), another characteristic of today's organizations is that a lot of complex and dynamic information comes from teams and projects. Many knowledge workers are dealing with multiple teams which they join and leave constantly, which places a heavy burden on their

cognitive resources. Better understanding of attention in relation to important work outcomes is thus a desideratum. This study adopts an attentional perspective on studying performance outcomes, going beyond the experiential outcomes that were tested in Chapter 4 of this dissertation.

Surprisingly, the main effect and moderating effect of recovery were not found, despite what the results from prior literature indicated. One reason for this insignificant main effect of recovery can be the six-month time lag between when the recovery data was collected and when the performance data was collected. Recovery is highly variable across days, hours, and even minutes. Indeed, although the relationship between recovery and performance has been replicated in previous studies, they often used diary studies or an experience sampling method and investigated the immediate effect of recovery (e.g., Sonnentag, 2001). As I had to make a larger-scale proxy of attention to test the performance implications of focused attention, it might have been more appropriate to test the hypothesis with a larger-scale measure of recovery, such as individuals' general level of energy. Due to the limitation of archival data, however, the only variable available to use was recovery data for each data collection time point. Future research can replicate this study with a general measure of energy.

Lastly, the measurement of stable membership warrants further investigation. Stable membership as measured in this study was a good proxy, but there are several other considerations to be taken into account. For example, in this dataset, I did not include the nuance distinguished by the categories depicted in Table 5.2, because the sample size in each category was too small. As a result, the independent variable of the test model ended up looking like a variable that counts the number of times one's supra-primary team appeared as primary team across the three periods. If those categories had been incorporated into the analysis, the

independent variable could have been a more refined continuous variable of weighted stability. As another example, the duration of working for one's supra-primary team in comparison to other teams may influence the level of stability felt about the project and one's overall experiences in juggling team demands. Another element could be the level of repetitiveness or familiarity one feels regarding their primary team. When a primary team is quite dynamic and constantly feeds in new information and members, the level of stability would be not as high as when one is familiar with how things are done in their primary team. Therefore, the stability of membership as a larger-scale proxy of focused attention can be further refined. Future research can test this possibility by using additional measurements of stable membership, such as the level of familiarity with projects or the variability of projects.

Relatedly, this study tested a simple model regarding the effect of stable membership and the moderating effect of recovery in predicting individual performance. Although there were several control variables included in testing the model, there can still be other variables that might influence the sense of stability and one's performance that were not considered in the model. For example, identification with the primary team may influence the way individuals perceive their primary team and how much the primary team demand individuals' cognitive energy. If they do not have a strong identification with the primary team, it may require extra energy for them to engage in and perform for the primary team.

Additionally, there can be individual traits that can influence the model of stable membership. For example, people tend to have different levels of ability to deal with and preference to work on multiple tasks at the same time (polychronicity; Sanderson, Bruk-Lee, Viswesvaran, Gutierrez, & Kantrowitz, 2013). Although, as discussed in Chapter 3, working on multiple tasks (i.e., multitasking) is not the same as engaging in multiple teams because teams

are a dynamic set of various tasks and members, future research can investigate the effect of individual traits like polychronicity in MTM and fluid team context to see if their effect extends to the membership level.

CHAPTER 6. SUMMARY AND CONCLUSION

The purpose of this dissertation is to understand individuals' attention allocation when they are members of multiple concurrent teams. I started by reviewing the related literature (Chapter 2). While there is an extensive literature of attention in psychology and relevant studies in organizational attention and informatics literature, little research has been done in direct relation to the topic of attention in MTM.

To bridge the gap between the previous literature and my dissertation, I developed several theoretical assumptions for attention in MTM (Chapter 3). These assumptions are critical, because attention has long been seen as a very micro phenomenon that can best be observed in laboratories. While that remains true in my own conceptualization, I also account for attention as individuals navigate their daily work in teams and organizations, which warrants further study outside laboratories. Additionally, as evident from the ABV of the firm (Ocasio, 1997), an attentional perspective is useful in explaining behaviors of a collection of individuals, as well as individuals themselves. Then I adopt a resource-based view for understanding teams and explained how members – as a key resource – need to be enacted and resourced through attention to contribute to their team(s). In other words, team members' talent and skills do not contribute to their teams automatically; rather, they need to be devoted to a team, which occurs when the team enters the team member's attention at a given moment.

I conducted two empirical studies that focus on the two ways attention manifests in MTM: performance episodes and membership. Because stable or focused attention is needed for quality performance on complex tasks like many team-related tasks, both studies pertained to focused attention. Taken together, the two studies provide empirical findings for understanding focused attention and its relation to different variables possible antecedents (Chapter 4) and a consequence (Chapter 5) of focused attention in MTM context. The diary study (Chapter 4) provides support for the bottom-up and top-down processes that influence one's attention. Adopted from the well-established dual-process model of attention in the psychology literature, the two processes explain focused attention to a given project in an MTM context. More specifically, participants focused more on projects that are salient on a given day and those that they find generally important to their own goals at work. The results show that the two processes, however, do not interact and focusing on projects that are important for achieving their goals did not influence team members' perception of job strain and job satisfaction over the study period. Since it is difficult to expect significant consequences of daily attentional changes, I also tested the performance outcome of focused attention at a larger scale, namely stable membership. This archival study (Chapter 5), using data from a project-based firm, revealed the effect of having stable membership with one's primary team on higher overall individual performance. This significant result was not moderated by the overall level of recovery experience during the study period.

In the current chapter, I discuss the theoretical contributions of this dissertation to the literature of teams and attention and its practical contributions. Then, I provide the limitations and future directions of this research.

6.1. Theoretical Contributions

6.1.1. **Introducing Attention to the Teams Literature**

An attentional lens allows for the conceptualization and study of teams from members' perspective. Thus far, team research has studied the dynamics of teams and consequences of teamwork as the major unit of analysis. The teams literature has been prolific in uncovering team-level variables that explain teams' behaviors and outcomes in the past few decades. One of the biggest challenges that team research is currently facing is, however, that the team as a unit of analysis is not as stable and solid as it used to be. The literature has been relatively quiet about the bigger picture of how teams mesh with the overall structure of organizations and members who comprise them, potentially due to the strong assumption of the boundedness of teams (Alderfer, 1976). Due to the increase of team fluidity, overlap, and dispersion, team boundaries are growing weaker (Mortensen & Haas, 2018), posing challenges to the extant approaches to team research. For example, team composition is challenging both to measure and to use for predicting team outcomes, because who comprises the team is either unclear or subject to change (Mortensen, 2014). Even when individual members' perspective is used to measure team variables (e.g., team psychological safety; Edmondson, 1999), the implicit assumption is that those who report on their team's level of safety are exclusive and full-time members of the team. While this could be the case in some organizations, it is not always so.

It is not my intention to argue against the decades of team research. In fact, I agree with Mortensen and Haas (2018) that the research conducted with the assumption of boundedness has provided an excellent foundation for the study of teams in such situations. I suggest, however, that an attentional approach can provide a unique lens for a context of dynamic teaming and collaboration (Edmondson, 2012). While teams may not be stable units and may change their

arrangement constantly, members are still in charge of their own resources in collaborations. Therefore, it is fruitful to understand how the resources that individual members bring into their work are actually distributed across teams. Theoretically speaking, tracking the resourcing (Feldman, 2004) of members' attention provides an accurate picture of how the talent and skills that each organization obtained through hiring are distributed among various teams. Additionally, the distribution of resources other than human resources, such as funding and technology, also depends on members' individual or collective discretion, which warrants a keen interest in what individual members attend to.

Therefore, despite the empirical challenges that I will discuss in more depth below, an attentional perspective has great potential to expand our understanding of teams and collaborations in dynamic contexts. This dissertation provides an initial effort to build a foundation for the study of attention in team settings by developing theoretical assumptions and empirical testing that are tailored to MTM.

6.1.2. Studying Human Attention in Organizational Settings

As described in Chapter 2, attention is often studied in controlled settings, as it is a micro process that is fleeting in nature. Tracking eye movements and brain images allow cognitive psychology research to uncover various principles of attentional processes that occur over only milliseconds (Fiske & Taylor, 2013). However, attention is the basis of any performance of tasks (James, 1890). While many principles have been observed and confirmed in laboratory studies, there is ample room for those principles to be applied and tested outside the laboratory setting where human beings exist as holistic beings, as noted by Csikszentmihalyi (2014):

> How attention is allocated determines the shape and content of one's life. Social systems, through the process of socialization, compete with the individual for the structuring of his

> attention. Tensions between various demands and the limited attention available is seen as the fundamental issue from which many of the most important problems in the behavioral sciences arise. If this is true, then attention has the potential of becoming a central concept in the social sciences because it provides a common denominator for resolving concurrently problems that up to now have been considered irreconcilable. Seemingly disparate issues in psychology, sociology, and economics become related once we use attention as the common variable underlying each of them. (p. 3)

Thus, I argue that attention has great potential to be one of the foundational concepts of social science to be explored in various contexts, including organizations.

Bringing attention outside of laboratories is not a simple process. As discussed in Chapter 3., the stimuli (e.g., tasks, teams) and performance for those stimuli are much more complex. Moreover, people already have their schema around their environment that influences their way of work on multiple stimuli. Due to the differences in contexts, there is an inevitable gap between how attention has been studied and how it needs to be studied outside laboratories. There are two ways to close this gap: one is to attempt to replicate what has been done in laboratories and the other is to pursue what is readily available in the new context. The former requires that we mimic how attention has been studied and try to capture the micro process of attention even in natural settings. For example, in Chapter 4 of this dissertation, I used a diary study to record attention allocation to capture the incremental changes of attention over hours while the memory is still fresh to participants at the end of each day. Another alternative would be to use an experience sampling method or wearable devices that record performance or interactions, which would allow researchers to capture attention processes at the very moment they occur. Another way to close the gap is to pursue a new way of defining and measuring attention that better fits the target context. In this dissertation, for instance, I conceptualized membership as a proxy of attention at a larger scale because membership data is relatively more

available than micro-attention data and it is at a large enough scale that meaningful consequences can be tracked.

Taken together, it demands extra effort, both theoretically and empirically, to bridge the gap between extant attention research and natural contexts. However, I argue that it is worth expanding the scope of attentional research to organizations and beyond, as human experience occurs in natural settings where individuals exist in close relation to their environment and other people, beyond manipulated settings in the laboratory. This dissertation contributes to this direction by making an initial effort to close the gap between what has been done and what can be done in attention research.

6.1.3. Revealing the Complexity of Salience in MTM

As evident in my previous arguments, studying attention in MTM is promising but challenging. One of the biggest challenges in bringing attention research in psychology to teams lay in the concept of salience. Salience of stimuli is one of the key concepts in explaining attentional processes. It is often easily manipulated in laboratories by controlling how objects appear on the screen that subjects are facing. In a natural setting like MTM, salience cannot be manipulated and is hard to measure. In the current dissertation, I measured salience by asking about the extent to which participants felt like they had to work on the project before they started working on it. As mentioned in Chapter 4, there were a wide variety of reasons why participants felt like they had to work on a particular project, and some of them had reasons that were a mixture of bottom-up and top-down processes (e.g., notification about a project from the boss vs. peers). Thus, the qualitative data from Chapter 4 reveals the complexity of salience and raises a further issue to be addressed: the overlap between the two attentional processes in natural settings.

6.2. Practical Implications

The current dissertation also has important practical implications for organizations that utilize MTM arrangements. First, from members' perspective, it is critical to be mindful of where their attention is allocated. As shown in the results, salience, as well as perceived importance to one's goal, was a strong predictor of focused attention. In my conversations with some of the participants in the diary study, they mentioned that they were surprised at how much attention they put into projects they do not consider to be very important. Because it is natural for human attention to be drawn to salient objects in the environment, members of multiple teams will want to be cautious of where their attention goes and manage their commitment to different projects as needed.

Second, team leaders need to understand what makes a project salient in their particular context. Given the strong effect of salience on members' focus on a given project and the variety of reasons for why a project becomes salient, it would be useful to determine what is considered particularly salient in a given context. For example, in an organization where hierarchy is emphasized, members might respond more strongly to notifications about a project from their boss as opposed to those from their peers. In that case, team leaders might take more initiatives to draw members' attention to important aspects of their projects, instead of delegating to subordinates. Additionally, it would be also fruitful for team leaders to discuss work-related goals with members who are working with multiple teams. Because the perceived importance of a project influences members' focus on the project, leaders would be able to leverage the relationship between individual members' goals and the tasks to be done to get the most from their members. Similarly, when members are not as motivated to participate in their projects,

team leaders can take a coaching approach to discuss the relevance of the project to the members' priorities.

Finally, managers would want to allow members to have stability when staffing their teams. According to the archival study in Chapter 5, stable membership with one's primary team did have strong positive effect on individuals' performance. While it is tempting to have a top performer to constantly go into different teams and inspire them, it would be more beneficial to make sure that those top performers maintain some stability in their membership.

6.3. Limitations and Future Directions

Despite the theoretical and practical contributions, this dissertation has several limitations. The first limitation comes from the questionnaire used for the diary study. Participants were asked to submit ten diary surveys over two weeks. To reduce fatigue during the diary period, I used one-item questions to measure salience and focused attention in addition to some other variables included in the survey. There is evidence from previous research that single-item measures are as valid and reliable as multi-item measures (e.g., Bergkvist, 2015; Nagy, 2002). In future research, however, the results from this study could be supplemented by other approaches to corroborate them, such as by using multi-item measures or different methods like experience sampling.

Second, in the diary study, the distinction between salience and attention is not clear. One source of this issue lies in the challenge of defining the concepts. Despite the huge amount of research in psychology done on attention, little consensus has been reached on its definition. One common characteristic of attention is its selectivity, but, when there is no other factor involved (e.g., a strong personal goal), human attention instantly selects salient objects, which makes the

distinction between salience and attention difficult. I made the distinction in the survey by distinguishing the time frame, such that salience is the perception of how much a project needed immediate attention before participants started working on it, and attention was measured with the level of focus during the work. Still, salience turns out to include a variety of sources which may have compromised the clarity in measurement. This fuzziness in both concepts of attention and salience exacerbates the challenge of empirically distinguishing them.

Third, there was an issue regarding the definition of teams when gathering data. This dissertation started from the assumption that teams have weak boundaries. To stay away from the traditional definition of teams as having strong boundaries, I recruited people for the diary study by asking if they were members of multiple team projects. I defined a team project as "a project on which they are working with at least two other people interdependently to achieve a common goal" (see Appendix). However, this instruction invited not only those who are members of multiple teams but also those who are members of a single team but work with different departments or teams (e.g., the tech team) on multiple projects. While the two groups of individuals both fall into the category of MTM, they may have qualitatively distinctive features. For example, in relation to the archival study, the level of familiarity with their "primary team" may be higher for those who have a "home team." Future research should distinguish the two types and further investigate the implications.

Fourth, the archival study was constrained by the variables that were available in the dataset. Due to this limitation, the measure of recovery, for example, was not ideal, such that it was measured spanning over six months and distant from the time when performance data was collected. In the future, it would be beneficial to design a study that is tailored to study attention and energy in the context where MTM and team fluidity exist.

Finally, another promising area of future research would be to develop a more systematic theoretical foundation for the resource-based and attentional perspective of MTM. There is little conceptualization of membership or of attention in the team literature, potentially because full membership and attention of members were assumed in the prior literature. Now that membership and, in turn, the members' attention, is divided across multiple teams, clear understanding of the meaning of membership and attention is needed to comprehend which work is actually getting done by whom.

6.4. Conclusion

William James once said: "everyone knows what attention is" (James, 1890). However, that has not been the case for attention in organizations. With the overwhelming amount of information available in organizations, members recognize the importance of harnessing attention for their better performance and higher quality of work life. Despite the interest, little is understood about what attention is, what it looks like, and how it influences workers' behavior in organizations, especially when attention is stretched, such as in MTM. This dissertation makes an initial attempt to create a theoretical basis for attention in the MTM context and to provide empirical support for antecedents and consequences of focused attention. Using a diary study, I found that the immediate salience and the general perceived importance of the project influence the level of focus on the project. However, there was no evidence that the two predictors interact, and there was little support for the effect of focused attention on important projects for participants' perception of job strain and job satisfaction. Based on archival data from a large project-based firm, I found support for the effect of stable membership on individual performance after six months. However, the level of recovery experiences did not moderate the

relationship, implying that the overall level of energy restored outside of work does not influence the effect of stable membership.

Overall, this dissertation provides a theoretical foundation and empirical support for studying attention in the context of MTM. It makes unique contributions to the research of teams by providing a lens to view teams from individual members' perspective. It also broadens the scope of attention research by studying attention in MTM which is outside the laboratory. In doing so, it raises a novel question about the meaning of salience in MTM. The findings from this dissertation warrant continued effort for a better understanding of attention in MTM and point to promising avenues for future research.

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APPENDIX. SURVEYS FOR CHAPTER 4

1. Screening survey

Please think of **all the team projects that you are a member of at your work**. By team project, we mean a project that you are working with at least two other people interdependently to achieve a common goal.

How many team projects are you a member of right now?

1	2	3	4	5	6	7	8	9	10+

How many of those projects do you think you will be relatively actively working on in the **next 2 months**?

1	2	3	4	5	6	7	8	9	10+

On average, how many team projects do you work on **on a day**?

1	2	3	4	5	6+

What is your job? _____
Are you 18 or older? _____
What is your name? _____

2. Pre-survey

Page 1

Welcome to our survey!

UNIVERSITY OF CALIFORNIA, IRVINE
CONSENT TO ACT AS A HUMAN RESEARCH SUBJECT

Study of Attention in Multiple Team Membership
You are being asked to participate in a research study. Participation is completely voluntary. Please read the information below and ask questions about anything that you do not understand. A researcher listed below will be available to answer your questions.

Lead Researcher
Heejin Kim, M.A.
Doctoral Student in Organization & Management
University of California, Irvine
heejin.kim@uci.edu

STUDY LOCATION(S): Online

WHY IS THIS RESEARCH STUDY BEING DONE?

The purpose of this study is to understand how people manage their attention when they are members of multiple concurrent teams.

HOW MANY PEOPLE WILL TAKE PART IN THIS STUDY?
This study will enroll approximately 50 participants. All study procedures will be done online.

WHAT PROCEDURES ARE INVOLVED WITH THIS STUDY AND HOW LONG WILL THEY TAKE?
The research procedure involves three phases: pre-survey (current one), diary surveys, and post-survey. You will be asked to answer about your experience in working with multiple teams. This pre-survey will take about 10-15 minutes and each diary survey will take about 2-3 minutes. The post-survey will take about 5 minutes. The required time to complete the surveys will partly vary depending on the number of teams and the number of team members you work with. In total, participating in the entire survey is expected to take less than 60 minutes over the course of 2 weeks. You only need to sign this consent form this first time. Please let us know at any time if you decide not to participate in the study and withdraw all your data.

You must meet the following requirements to be in the study: Be are at least 18 years of age or older and have signed this form. You must also be a member of multiple concurrent teams (i.e., multiple membership).

WHAT ARE THE POSSIBLE DISCOMFORTS OR RISKS RELATED TO THE STUDY?

There are no known harms or discomforts associated with this study beyond those encountered in normal daily life. The possible inconvenience associated with this study is that filling out a survey each day can be demanding. You may decline to answer any of our surveys at any point.

ARE THERE BENEFITS TO TAKING PART IN THE STUDY?

Participant Benefits

You will receive $30 dollar Amazon gift card at the end of the study period (10 workdays). This is given to anyone who complete the study. You may also choose to receive a brief a summary report of overall data from this study once the data analysis is completed.

WHAT HAPPENS IF I WANT TO STOP TAKING PART IN THIS STUDY?

You are free to withdraw from this study at any time. If you decide to withdraw from this study you should notify the research team immediately. The research team may also end your participation in this study if you do not follow instructions or if your safety and welfare are at risk.

HOW WILL MY PERSONAL INFORMATION BE KEPT?

Subject Identifiable Data

The personally identifying information will be erased and masked with random numbers once your responses across multiple data collections are matched. Participants' sensitive information may be shared with representatives of the University of California, Irvine or governmental authorities if you or someone else is in danger or if we are required to do so by the state law.

Data Storage

All research data collected will be stored securely and confidentially. Research data will be maintained in a secure location at UCI. Only authorized individuals will have access to it. Research data will be stored electronically on a secure computer in an encrypted file with password protection

Data Retention

The researchers intend to keep the research data for approximately 5 years.

WHO WILL HAVE ACCESS TO MY STUDY DATA?

The research team, authorized UCI personnel, and regulatory entities such as the Office of Human Research Protections (OHRP), may have access to your study records to protect your safety and welfare. It will be made clear that not participating will have no impact on their performance in FEMBA program or their standing at the university.

Any information derived from this research project that personally identifies you will not be voluntarily released or disclosed by these entities without your separate consent, except as specifically required by law. Study records provided to authorized, non-UCI entities will not contain identifiable information about you; nor will any publications and/or presentations

without your separate consent. While the research team will make every effort to keep your personal information confidential, it is possible that an unauthorized person might see it. We cannot guarantee total privacy.

ARE THERE OTHER ISSUES TO CONSIDER IN DECIDING WHETHER TO PARTICIPATE IN THIS STUDY?

Investigator Financial Conflict of Interest
No one on the study team has a disclosable financial interest related to this research project.

WHO CAN ANSWER MY QUESTIONS ABOUT THE STUDY?
If you have any comments, concerns, or questions regarding the conduct of this research, please contact the research team listed at the top of this form.

Please contact UCI's Office of Research by phone, (949) 824-6662, by e-mail at IRB@research.uci.edu or at 5171 California Avenue, Suite 150, Irvine, CA 92697, if you are unable to reach the researchers listed at the top of the form and have general questions; have concerns or complaints about the research; have questions about your rights as a research subject; or have general comments or suggestions.

HOW DO I AGREE TO PARTICIPATE IN THIS STUDY?
You should not sign this consent form until all of your questions about this study have been answered by a member of the research team listed at the top of this form. Participation in this study is voluntary**.** You may refuse to answer any question or discontinue your involvement at any time without penalty. Your decision will not affect your future relationship with UCI or your quality of care at the UCI Medical Center.

Do you agree to participate in this research?
___ Yes
___ No

Page 2

What is your job title?

_____

We define team project as **a project that you are working with at least two other people interdependently to achieve a common goal.**

Please think of the team projects you are member of **at work**. If you are working with one team for several classes, choose one class project that is most active.

How many **active** team projects at work and at school (in total) are you working on right now?

1	2	3	4	5	6	7	8	9	10+

Please list the team projects that you are member of. **If you have more than 5 team projects, select 5 that you are more likely to work on in the next two weeks.**

You can use any names for your projects, as long as they help you recall them effectively.

Project 1 _____

Project 2 _____

Project 3 _____

Project 4 _____

Project 5 _____

Page 3

Now, please think of **personal goals** (up to 2) that you currently have **in relation to your work or job**.

My primary goal is..

_____

My secondary goal (if any) is...

_____

Page 4-5 *(Same questions repeated for primary and secondary goal; repeated only for those who write two goals in the previous page)*

[Goal category] Which of the following best describe your primary goal?

__ Timely performance or efficiency
__ Quality performance
__ Maintaining status quo (not causing problems)
__ Promotion/raise
__ Being the best
__ Helping other people
__ Relationships building/maintenance
__ Learning new skills and knowledge
__ Others: _____

[Importance_Goal] How important is each project in accomplishing this goal?

	None at all	A little	A moderate amount	A lot	A great deal
Project 1*					
Project 2*					
Project 3*					
Project 4*					
Project 5*					

*(*In actual survey, project names are automatically fed into the table.)*

Page 6-10 *(Same questions repeated for each project participant lists; only for the number of projects that participant listed)*

Now, please tell us a little bit about each of your project. **We would much appreciate it if you could be specific as we may not be familiar with your work domain as much as you are.**

First, please answer the following questions regarding your first project **${q://QID30/ChoiceTextEntryValue/4}.**

*(*Project names are automatically fed into the question)*

[About] Please briefly describe what the project is about.

[Role] Please briefly describe your role in this project.

[Centrality of role] How central is your role in this project?

None at all	A little	A moderate amount	A lot	A great deal
1	2	3	4	5

[Relevance to expertise] How much is your expertise for this project relevant to your participation?

None at all	A little	A moderate amount	A lot	A great deal
1	2	3	4	5

[Timeline] How would you define the scope of the project in terms of time? And how far are is your team at? (e.g., This project is a one-year long project and we are about halfway there)

[Deadline] In the next 2 months, are there any deadline(s) coming up for this project that you need to work for?

___ Yes - How many days until the deadline? _____
___ No

[General focus] Please rate the level of disagreement or agreement with the following statements (1=strongly disagree, 5=strongly agree)

1) I spend a lot of time thinking about this project.
2) I focus a great deal of attention on this project.
3) I concentrate a lot on this project.

4) I pay a lot of attention to this project.

[Ego network - density] In the table below, please type in each member's initials in the blank boxes.

Then, rate (1) how **close** you feel with the person and (2) how **frequently** you interact with the person by choosing your response from the drop-down list.

Sample: Tom - A lot - Occasionally

If there are less than 10 members, feel free to leave the rest of boxes blank.
If there are more than 10 members, try to list up to 10 members who you frequently interact with.

	How close are you with this person?	How frequently do you interact with this person?
Member 1 _____	[dropdown menu] None at all A little A moderate amount A lot A great deal	[dropdown menu] None at all A little A moderate amount A lot A great deal
Member 2 _____	[dropdown menu]	[dropdown menu]
...	...	...
Member 10 _____	[dropdown menu]	[dropdown menu]

Page 11

[Industry] Which industry are you in?

__ Art and design
__ Manufacturing
__ Sales
__ Marketing
__ Education
__ IT
__ Legal professional
__ Finance professional
__ Business service professional
__ Other _____

[Hours per Week] On average, how many hours per week do you work?

__ 1-9 hours
__ 10-25 hours
__ 26-35 hours
__ 36-45 hours
__ 46-55 hours
__ 56-65 hours
__ More than 65 hours

[Org tenure] How many years have you worked in this organization? (number only; e.g. 3.5)
_____

[Age] What is your age in years? (number only) _____

[Marital status] What is your marital status?

[Gender] I identify as...

__ Female
__ Male
__ Transgender
__ Other: ____
__ Prefer not to say

[Name] What is your name? _____

Page 12

Thank you for your response!

*****PLEASE READ THE FOLLOWING INFORMATION CAREFULLY*****

Starting on Monday (June xx), diary survey will be delivered to you at **4pm each workday for two weeks (=10 workdays)**. So please keep an eye out for the survey at 3pm! This short daily survey will ask you about your work on the team projects on a given day.

Please understand that **your response needs to be submitted between 4pm the day of and 10am the next morning to be considered as a valid response**. It is important that you fill out the diary survey within this time frame. If you miss a survey on an evening and fill it out in the morning, please be sure to answer the questions as if it were the previous day.

Feel free to contact me at heejin.kim@uci.edu if you have any questions about this study at any point. I appreciate your participation!

3. Diary survey

Page 1

Hello ${m://FirstName} - Thank you for taking a few minutes to answer today!

Which project did you work on today? If the project you worked on today is not on the list below, select "other" and type in the project name.

__ Project 1*
__ Project 2*
__ Project 3*
__ Project 4*
__ Project 5*
__ Project Other _____

*(*In actual survey, project names are automatically fed into this survey from the previous response)*

Page 2-7 *(Same questions repeated for each project participant worked on the day; only for the number of projects that participant selected)*

Please answer the following questions regarding your project x*.
*(*In actual survey, project names selected on the first page will automatically be fed into this statement)*

[Activity] Please briefly describe the activity you worked on for the project.

[Time] Please specify the period of time when you worked on this project today. If you worked on this project more than one times today, please list all times (e.g., 10-11am, 3-4pm).

[Salience_Reason] Briefly describe what made you work on the project today. (e.g., meeting is coming up, got an email)

[Salience_Category] Which of the following categories best describes the reason you worked on the project today (i.e. your answer above)?

__ Something about me
__ Something about the project
__ Something about the members
__ Something about the organization in general
__ Others: _____

[Salience_Num] Before you actually started working on the project, how much did you feel that you had to work on it today?

None at all	A little	A moderate amount	A lot	A great deal
1	2	3	4	5

[Focus] While working on this project today, how much were you focused?

None at all	A little	A moderate amount	A lot	A great deal
1	2	3	4	5

[Distraction] While working on this project today, how much did you feel unnecessarily distracted?

None at all	A little	A moderate amount	A lot	A great deal
1	2	3	4	5

[Perceived performance] Today, my job performance on this project was good.

Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1	2	3	4	5

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Why did you NOT work on Project X* today?

(*Only the projects that participants did not chose on the day will appear)

__ Did not want to

__ Did not have to

__ Something happened – what happened? _____

Page 9

[Daily Mood] (10-item version of PANAS; Watson, Clark, & Tellegen, 1988)

Please rate your different moods today, indicating how you felt overall (i.e., not about a particular project, but overall).

	None at all	A little	A moderate amount	A lot	A great deal
Interested					
Distressed					
Excited					
Upset					
Scared					
Enthusiastic					
Inspired					
Determined					
Jittery					
Afraid					

[Typicality] Was today a typical day?
__ Yes
__ No

[Note] Please use the space below to describe anything that could have influenced your focus today.

4. Post-survey

Page 1

Welcome to our last survey!

I appreciate your entry for the past 10 days! This survey will be the last one for you to take.

In the past 2 weeks, what percentage of time did you spend on each of your projects? **Total must sum to 100**

If there is a project you ended up working actively in the past 2 weeks, although you did not indicate so in the initial survey = Use "Other frequently worked project".

If the provided list is enough = simply type in "0" next to "Other frequently worked project"

Project 1*	
Project 2*	
Project 3*	
Project 4*	
Project 5*	
Other frequently worked project (if not listed above) _____	
Total	(auto sum)

*(*In actual survey, project names will automatically be fed into the table)*

Please think of your performance in each project in the **past 2 weeks**. Then, rate the level of disagreement or agreement with the following statement in regards to each project.

In the past 2 weeks, my job performance in Project ___ was good.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Project 1*					
Project 2*					
Project 3*					
Project 4*					
Project 5*					

*(*In actual survey, project names are automatically fed into the table.)*

In the past 2 weeks, I have complied with all my job requirements from Project __.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Project 1*					
Project 2*					
Project 3*					
Project 4*					
Project 5*					

*(*In actual survey, project names are automatically fed into the table.)*

Outcome/control variables

In the past 2 weeks...

[Satisfaction with work] (used as day-level measure in Judge, Scott, & Ilies, 2006 – retrieved and modified from Brayfield & Rothe,1951; 1=Strongly disagree, 5=Strongly agree)

1. I was enthusiastic about my work.
2. I felt fairly satisfied with my present job.
3. Each minute at work seemed like it would never end.
4. I was finding real enjoyment in my work.
5. I considered my job rather unpleasant.

Page 2

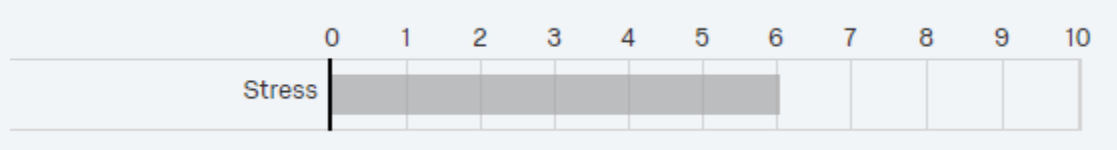
[Recovery] (Sonnentag & Fritz, 2007; 1=Strongly disagree, 5=Strongly agree)

In the past 2 weeks, after work...

1. I forgot about work after work (unless there is an on-going client emergency).
2. I didn't think about work at all.
3. I distanced myself from my work.
4. I got a break from the demands of work.
5. I kicked back and relaxed.
6. I did relaxing things.
7. I used the time to relax after work.
8. I took time for leisure.
9. I learned new things.
10. I sought out intellectual challenges.
11. I did things that challenge me.
12. I did something to broaden my horizons.
13. I felt like I could decide for myself what to do.
14. I decided my own schedule.
15. I determined for myself how I would spend my time.
16. I took care of things the way that I wanted them done.

Page 3

[Stress] How would you rate the overall level of stress in the past 2 weeks?



[Perceived control of time] (Claessens et al., 2004; (1=Strongly disagree, 5=Strongly agree)

1. I felt in control of my time.
2. I found it difficult to keep to my schedule because others take me away from my work.
3. I felt that I have my work under control.
4. I felt confident in that I was able to complete my work on time.
5. I often had little control of what is happening at work.

[Job strain] Pluut, Flestea, & Curseu (2014), Warr (1990); (1=Never, 5=Everyday)

1. Tense
2. Uneasy
3. Worried
4. Calm (R)
5. Contented (R)
6. Relaxed (R)

Page 4

Would you like to receive a summary report (verbal or written) once the data analysis is completed?
__ Yes
__ No

Would you be willing to participate in a follow-up interview regarding your experiences in working with multiple teams?
__ Yes
__ No