



Types of Play at Work and Effects on Work-Related Outcomes

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Signed Statement of Originality

The work presented in this thesis is, to the best of my knowledge, based on my own work, except where appropriate acknowledgment has been given. The material presented in this thesis has not been submitted, either in whole, or in part, for a degree at this or any other university. The research involving humans was cleared and approved by the Human Research Ethics Committee (HREC) of the Australian National University.

Signed:

A handwritten signature in black ink, appearing to be 'CA Petelczyc', enclosed within a thin black rectangular border.

Claire A. Petelczyc

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Abstract

There has been a growing interest in play at work in recent times. However, despite its popularity in contemporary organisations such as Google and Facebook, there is still considerable debate about the effects of play in the workplace. On the one hand, many recognise that play at work can be beneficial at the individual, team, and organisational levels. However, others argue that play can negatively impact organisational outcomes, and that work, and play should be kept distinct from one another.

Research on play at work has predominantly focused on the drivers and positive outcomes of play and is fragmented across disciplines and theoretical bases. Little consideration has been given to potential dysfunctional and negative outcomes associated with playing at work. Also, little is known about *why* people engage in play at work, and *how* it leads to specific positive or negative outcomes.

This research program draws on conservation of resources (COR) theory as an overarching theoretical lens through which to examine boundary conditions, mechanisms and both positive and negative consequences of play at work. Through a review and two empirical studies, the impact of play, operationalised as both an activity and as a trait, is investigated. The first empirical study uses an experimental design to investigate the impact of different types of play (as a state) on negotiation, and the second uses a survey design to investigate the impact of playfulness (as an individual difference variable) on in-role performance and counterproductive work behaviours. Relational and psychological resources are proposed as the linking mechanisms between play and outcomes, and two moderators are investigated.

This thesis is structured as follows. Chapter 1 introduces the topic of play at work and provides motivation and rationale for the subsequent empirical chapters. Chapter 2 presents an integrative review of the research on play at work to date. It reviews existing definitions

and operationalisations of play and discusses a recent conceptualisation; it reviews theoretical perspectives and empirical research, focusing on both the antecedents and consequences of play at work; and it proposes an agenda for future research. Chapter 3 utilises a laboratory experimental design to investigate how play, operationalised as a state or activity, impacts negotiation performance. This study examines the effect of two types of social play, structured and unstructured, on negotiation performance, via two parallel personal resource mechanisms (positive affect, a psychological resource, and relationship quality, a relational resource). Motive for play is proposed as the boundary condition on these relationships. Chapter 4, a field study, investigates how playfulness, operationalised as a personality trait, impacts two work-related outcomes (in-role performance and counterproductive work behaviours) via two types of personal resources (positive affect, a psychological resource and leader-member exchange, a relational resource). It also examines the interaction between employees' and supervisors' levels of playfulness and addresses the question of playfulness being helpful or harmful in the workplace. Finally, chapter 5 integrates the key findings of both empirical studies and offers a general discussion on the implications of research into both operationalisations of play at work. It also outlines the limitations of this research program and discusses avenues for future research.

This program of research makes several significant contributions. First it is original in its organisation and analysis of the current state of knowledge of play at work. It also provides conceptual clarity and builds upon this by differentiating different *types* of play at work. Further, in operationalising and empirically investigating play as both a state and a trait, this research makes a greater contribution to the field through constructive replication. Second, applying COR theory as a cohesive theoretical overarching framework helps to understand why people choose to engage in different types of play and allows us to make predictions concerning the mechanisms linking play to work-related outcomes, and the conditions under

which this may occur. Through this novel application of COR, this research is innovative in its integration of the current streams of literature on resource regulation and play and is also the first to consider play a type of personal resource. Third, this program of research takes a more balanced perspective and considers the potential negative effects or ‘dark side’ of play at work, and in doing so, addresses the current biased view towards the positive aspects of play at work. It also considers important interpersonal and instrumental aspects of play that are unique to an organisational setting. Finally, this research contributes to the literature by responding to calls for systematic empirical research into the measurement, prevalence and outcomes of play and playfulness in adulthood and in the workplace more specifically.

The findings of this program of research have several important implications. First, at the individual level, it is useful for employees to know when and with whom it would be beneficial to be playful with at work, as well as the specific impact of play on work performance and outcomes (and how this may be achieved). Second, at the managerial level, supervisors can glean insight as to when and with which subordinates they should be playful with; the types of playful activities they may wish to encourage or discourage; and how play can influence the well-being of subordinates, as well as team morale and cohesion, which affects performance. This research can also assist managers in implementing and managing workplace play, by identifying how play can lead to specific positive or negative work-related outcomes. Finally, at the organisational level, this research can influence the implementation of practices and policies surrounding the engagement of play at work; the use of play as a tool to attract and retain high-quality employees; and when, how, and for whom play should be encouraged at work.

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List of Abbreviations

APIM	Actor–Partner Interdependence Model
APS	Adult Playfulness Scale
CWB	Counterproductive work behaviour
CEO	Chief executive officer
CFI	Comparative fit index
COR	Conservation of Resources
ICC	Intra-class correlation coefficient
LMX	Leader–member exchange
LSP	LEGO Serious Play
PANAS	Positive and Negative Affect Schedule
RMSEA	Root mean square error of approximation
SEM	Structural Equation Model
SMAP	Short Measure for Adult Playfulness
SRMR	Standardised root mean residual
VIF	Variance inflation factor

Chapter 1: Types of Play at Work and Effects on Work-Related Outcomes

1.1 Introduction

A *New York Times* article suggested that Google's Manhattan office is 'the happiest, most productive workplace in the world', with a

labyrinth of play areas; cafes, coffee bars and open kitchens; sunny outdoor terraces with chaises; gourmet cafeterias that serve free breakfast, lunch and dinner;

Broadway-theme conference rooms with velvet drapes; and conversation areas

designed to look like vintage subway cars. (J. B. Stewart, 2013, paras 4–5)

Organisations such as Google and their chief executive officers (CEOs) have recognised that play can have a range of positive consequences at work (Schmidt & Rosenberg, 2014). For example, as included in a recent review article (Petelczyc et al., 2018), one CEO noted:

At a company I helped build, we would take breaks from working to go play FIFA soccer on PlayStation. I found it made our employees refreshed, refocused and more productive. Playing around like kids also helps me and my staff overcome challenges that seem insurmountable. (Altschuler, 2017, as cited in Petelczyc et al., 2018, p. 162)

Meanwhile, others have stated:

When employees have the opportunity to play, they actually increase their productivity, engagement and morale... Not only does having a playful atmosphere attract young talent, but experts say play at work can boost creativity and productivity in people of all ages. (Huffington Post, 2016, as cited in Petelczyc et al., 2018, p. 162)

However, some disagree with this sentiment and consider play as an unproductive activity that should not be encouraged in the workplace. This contrasting perspective on the effects of play at work is represented by the following quote from Theodore Roosevelt, 'when you play, play hard; when you work, don't play at all' (Pine, 2012, as cited in Petelczyc et al.,

2018, p. 162). Individuals who hold this view argue that play can harm productivity and thus work, and play should remain as independent and distinct realms (J. D. Thompson, 1967; Weber, 1930). Typically play occurs spontaneously and may be considered distracting and harmful because it can detract from resources and result in poor performance and interpersonal conflict (Costea et al., 2005; D'Abate, 2005).

Previous empirical findings have provided evidence for these contrasting views. Research has shown that play at work has a range of benefits at the individual, team and organisational levels. For example, at the individual level, it increases job satisfaction (Abramis, 1990; Rood & Meneley, 1991), task involvement, creativity (Hunter et al., 2010; Russ & Wallace, 2013) and problem-solving ability (Jacobs & Statler, 2006). It also enhances one's ability to deal with stress (Sørensen & Spoelestra, 2011), and reduces fatigue, boredom and burnout (DesCamp & Thomas, 1993; Hunter et al., 2010). At the interpersonal level, it increases trust (Hunter et al., 2010), encourages bonding and interactions among colleagues (Sørensen & Spoelestra, 2011) and breaks down hierarchical boundaries (Locke, 1989). At the organisational level, play at work contributes to creating a friendly working atmosphere and a high commitment culture (Sørensen & Spoelestra, 2011). However, play at work can also negatively affect task performance and decrease organisational involvement (Abramis, 1990; Sørensen & Spoelestra, 2011).

Since play at work represents a somewhat under-explored domain of research, the existing knowledge has gaps, and hence, many new and exciting questions merit further examination. The research on play at work is disjointed because studies have been spread across several disciplines, including psychology and management. In addition, although play in children and animals has been studied comprehensively, adults have been studied only rarely—and in a work context, even less so. As a result, the general research and theories on

play are underspecified because they do not consider the unique aspects of organisational settings.

Moreover, theoretical cohesion has been lacking, given that numerous theories, depending on the discipline and variables of interest, have been applied. For example, the operant conditioning theory (Skinner, 1954) has been applied to explain the drivers of play, and the argument is that engaging in play generally offers some reward, which encourages individuals to continue the behaviour. In comparison, to explain the outcomes of play, in the field of developmental psychology, the cathartic theory of play has been applied to argue that play provides an outlet for emotions that are otherwise not acceptable to express (e.g. anger or frustration), thus relieving stress (Ellis, 1973). In the field of management, the theory of flow (Csikszentmihalyi, 1975) has been applied to argue that play creates a sense 'flow' between learning and gaining skills, thereby increasing individuals' sense of competence (Abramis, 1990) and improving their divergent thinking (Berg, 2001; Mainemelis & Ronson, 2006).

This lack of a robust theoretical framework for studying play at work has resulted in it being defined inconsistently, resulting in substantial confusion surrounding this concept. This absence of conceptual convergence and clarity regarding the definition of play has led to considerable measurement and operationalisation problems. For example, a clear distinction is yet to be made between two operationalisations of play: as an activity (or state), and as an individual difference variable (or trait), two very different and important spheres of play. Different views have also been expressed on the taxonomic structure of play at work. Specifically, although the types of play at work vary, the different types have not been clearly defined, described or organised. Consequently, researchers have been unable to compare the drivers and outcomes of different types of play, which represents a significant knowledge gap.

The literature has displayed some bias in that it has predominantly explored the positive aspects of play at work. That is, it has not considered the potential dysfunctional and

negative drivers and outcomes associated with playing at work. It has failed to consider the potential ‘dark side’ of play, and therefore, it is not known how or when playing at work may be detrimental to the individual or to the organisation. Moreover, empirical researchers have not considered potential adverse drivers and effects of play, such as instrumental motives and counterproductive work behaviours, respectively.

The effects of play on a range of common work outcomes, such as negotiation, have also been under-investigated. Anecdotal evidence suggests that certain play activities are used in organisations, for example, leaders taking their clients out for a round of golf. Indeed, the popular press (e.g. the Fish! Philosophy) has suggested that there are many benefits of play in an organisational setting (Lundin et al., 2000). However, despite anecdotal and observational evidence suggesting that play and negotiation are linked (Janiak, 2003; Taminiau & Wiersma, 2016), this relationship has not been systematically or empirically investigated. Anecdotal claims in this area lack internal validity, but this issue can be addressed using empirical methods that allow conclusions on causal inference to be drawn.

The literature has also failed to consider some important interpersonal and instrumental aspects of engaging in play with others that are specific to an organisational context. It does not explore the goals and motives that drive individuals to engage in social play in adulthood and at work. This idea challenges previously held beliefs that individuals engage in play for purely hedonic reasons and ‘in the moment’. A unique feature of playing at work is that it can be guided by a higher purpose (Linder et al., 2001). Employees may play with others not only for enjoyment and amusement, but also for advancing strong other-directed instrumental goals. In addition, people may strategically engage in play with certain individuals whom they believe are influential to their career success, even if they do not like them. For example, employees engaging in play with their supervisor. However, the potential effects of this type of play are yet to be studied.

Although empirical research has been conducted on many antecedents and outcomes of play, factors that influence the effects of play have been paid little attention, and *systematic empirical* research into the potential mechanisms and boundary conditions linking play to outcomes is lacking. For example, from the stimulus-seeking perspective (Berlyne, 1960), it has been argued that people play purely for enjoyment, resulting in ideal stimulation levels and enhanced performance. In this case, increased pleasure/enjoyment is the proposed mediator between play and performance. However, this relationship has not been systematically or empirically tested. In addition, contextual factors, such as industry type and leader support for play, could moderate the relationship between play and outcomes. However, these variables have previously only been considered antecedents (influencing the probability of employees playing at work; e.g. Hunter et al., 2010, West et al., 2013) or outcomes (e.g. play at work has been shown to promote a more positive working atmosphere and contribute to high commitment culture; Sørensen & Spoelestra, 2011) of play, and their specific moderating role has not been empirically tested. Therefore, scientific, systematic and empirical investigation, guided by an overarching theoretical framework, of potential moderating and mediating variables is required.

To address these gaps in knowledge, the overarching research question of this thesis is as follows: *How and when can different types of play lead to either positive or negative work-related outcomes?* By breaking down this question, this program of research aims to address the following areas of inquiry. First, it aims to address the fragmented literature base by organising and analysing the current state of knowledge, and to provide conceptual and definitional clarity of the different types and operationalisations of play at work. Second, it aims to address inconsistencies in the literature by applying a rigorous overarching theoretical perspective—the conservation of resources (COR) theory (Hobfoll, 1989). This framework can shed light on the motivators for engaging in different types of play and allows us to

theorise and make predictions concerning the mechanisms linking play to work-related outcomes, and the conditions under which play influences work-related outcomes. The theories applied in the field are limited in that they have focused primarily on either antecedents or outcomes. For example, the stimulus-seeking and operant conditioning perspectives have focused on the drivers of play, whereas the flow, the cathartic and the cognitive and social processing perspectives have focused on its outcomes. These theories have been applied inconsistently and have failed to integrate the predictions and findings regarding antecedents, outcomes, moderators and mediators under a single theoretical framework. Third, this thesis aims to investigate the novel outcomes of play in a work context (e.g. negotiation), which have not been empirically or systematically studied previously, and to address the current view that favours the positive aspects of play by taking a more balanced perspective and considering the potential ‘dark’ effects of play at work. Lastly, it considers the unique aspects of the organisational context and the interpersonal and instrumental drivers and effects of engaging in play at work with negotiation partners, colleagues and supervisors.

These aims are addressed in three main chapters. Chapter 2 (Integrative Review) presents an organised compilation of the research on play at work and proposes an agenda for future research. This thesis focuses on two quite different and important spheres of play – as an activity and as a trait. Chapter 3 (Empirical Studies 1a and 1b) uses a laboratory experimental design to investigate the effect of play (operationalised as a state or activity) on negotiation performance and of instrumental motive as a boundary condition. Chapter 4 (Empirical Studies 2a, 2b and 2c) uses a field survey design to investigate how play (operationalised as a trait, or ‘playfulness’) affects in-role performance and counterproductive work behaviours (CWBs). It also examines the interaction between employees’ and supervisors’ levels of playfulness. Chapter 5 integrates the key findings of the empirical studies, offers a general discussion on the implications and limitations of this research

program and discusses possibilities for future research. More details on each of the chapters are provided below.

1.2 Current Program of Research

A summary of the remaining chapters of this thesis is provided in the following sections.

1.2.1 Chapter 2: An Integrative Review and Agenda for Future Research

This chapter provides an integrative literature review on the research on play at work. The theoretical contributions of this chapter are that it organises and analyses the current state of knowledge of play at work, provides conceptual clarity on different types and operationalisations of play and proposes an overarching theory to guide further scholarship. First, existing definitions of play and their limitations are reviewed. Then, a recent conceptualisation of play in adulthood is presented, which can lead to enhanced conceptual convergence in the field. Second, theoretical perspectives and empirical research on play at work is reviewed, including a discussion of a range of antecedents and consequences. This review is followed by a presentation of an agenda for future research, which focusses on several important issues that have arisen as a result of the review of existing studies. The latter issues are organised in two sections, refining and extending the current research on play, and generating novel ideas and new research directions on unexplored areas of inquiry.

1.2.2 Chapter 3: Empirical Study 1—Consequences of Different Types of Social Play on Negotiation Performance

Studies 1a and 1b use a laboratory experimental design to examine two types of social play—operationalised as a state or activity—and their effect on negotiation performance. Negotiation was chosen as the work outcome variable because players' negotiation skills are invariably practiced during social play enactment. Specifically, pretend play with peers augments the social and psychological growth of individuals in two ways. Firstly, out-of-play

negotiations with play partners about the roles, boundaries, rules and actions of play, and second, the actual enactment of play episodes. It is hypothesised that play provides a context for peer negotiation and the resolution of conflict. That is, the active resolution of debates with play partners who hold conflicting ideas about the management of play episodes, and indeed discussion that occurs during a play episode, can be facilitative of personal social and psychological growth. Psychological and relational resources are proposed as the linking mechanisms between play and negotiation, and the moderating role of instrumental motive is explored.

The empirical contribution of these studies lies in their experimental design, which applies methodological rigour and allows us to comment on causal inference. They also make several important theoretical contributions. They define and explore the effects of two types of play (structured and unstructured social play), and in doing so, provide conceptual and definitional clarity. They apply COR theory as an overarching theoretical lens, allowing to explore the role of personal resource gain (positive affect and enhanced relationships quality) as the mechanism linking play and outcomes. Negotiation is studied as a novel outcome of play, because, it is believed that play is particularly beneficial in the negotiation context. For example, business deals being made on the golf course, ping-pong diplomacy and guanxi developed over meals eaten out. However, despite anecdotal support, there is little formal theory or empirical evidence to draw upon when explaining how and when play can lead to enhanced negotiation performance, and to date, it has not yet been systematically or empirically investigated. This research also considers the ‘dark side’ of play by investigating how and when engaging in play with a negotiation partner can worsen negotiation performance. These studies also consider an important interpersonal aspect of play at work, specifically, the role of instrumental motive and the potential effects if such motive is detected.

1.2.3 Chapter 4, Empirical Study 2—Playfulness at Work: When Can It Help and When Can It Harm?

Studies 2a, 2b and 2c use a field survey design to investigate play—operationalised as a trait, or playfulness—and its impact on two work-related outcomes (in-role performance and CWBs) via psychological and relational resource gain. They also investigate the moderating role of supervisor levels of playfulness. In doing so, they supplement the laboratory research on play as a state or activity and aim to contribute to the field through constructive replication. The empirical contributions of these studies lie in their rigorous survey design. Specifically, they examine the consequences of playfulness using time-lagged, multisource data, collected in cultures from both East and West. This approach addresses issues associated with common method bias and allows us to investigate whether the proposed relationships hold true cross-culturally.

Further, these studies make important theoretical contributions by extending the findings of Studies 1a and 1b by investigating an alternative operationalisation of play (i.e. playfulness). They also apply COR theory as an overarching theoretical perspective, allowing us to speculate about the mediating role of psychological as well as relational mechanisms. Novel outcomes of playfulness are studied, and the potential negative effects of play on these outcomes are examined (i.e. how and when play can lead to worsened in-role performance and increased CWBs). In examining supervisor levels of playfulness, these studies extend current research by considering an important instrumental and interpersonal aspect of play in an organisational context and its possible moderating role. Specifically, employees may play with their supervisor to gain additional resources to improve their work outcomes, and not merely for amusement and fun.

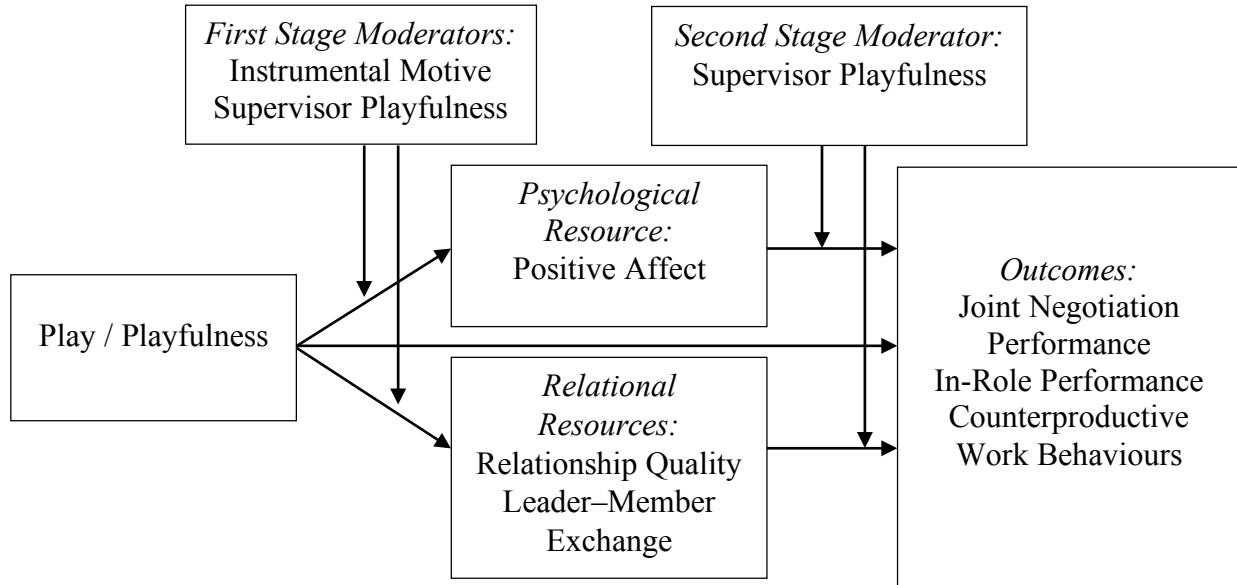
1.2.4 Chapter 5: Concluding Remarks

Chapter 5 summarises and integrates the findings of the literature review and of both empirical chapters. It argues that play can indeed increase personal resources, which, in turn, has consequences for work-related outcomes. However, some of the findings are inconsistent and the possible reasons for the inconsistency are discussed. Then, the chapter outlines the posited contributions of the research program, before discussing the empirical and theoretical implications of the findings for academics, organisations, managers and individual workers. The areas of strength of the research are discussed (including its comprehensiveness, innovation, methodological rigour and theoretical clarity) and directions for theory and future research are posited.

To summarise, this program of research will perform the following. It will organise the current state of knowledge on play at work; offer definitional convergence and conceptual clarity of different types and operationalisations of play; and apply COR theory as an overarching theoretical lens. Guided by COR theory, it will argue that personal resources act as the mechanism linking play and various outcomes; will examine the potential harmful or ‘dark’ effects of play and its impact on novel outcomes (e.g. negotiation); and will explore interpersonal and instrumental aspects of play that are unique to organisational settings through the proposal of different boundary conditions. Taken together, this will address the overarching research question on the effects of play at work and how and when different types of play can result in either positive or negative work-related outcomes. A pictorial depiction of the overarching research model showing the core constructs of the thesis can be seen below in Figure 1.

Figure 1.

Overarching Research Model Integrating Empirical Studies 1 and 2



Chapter 2: An Integrative Review and Agenda for Future Research¹

The aims of this chapter are to organise the current state of knowledge on play at work; to offer definitional convergence by discussing, comparing and contrasting numerous definitions used in the past, and by proposing one definition to be used in empirical research going forward; to provide conceptual clarity on different types and operationalisations of play; and to investigate and propose an overarching theoretical lens to be applied in future empirical scholarship.

In providing an extensive literature review, this chapter canvasses specific opportunities to develop our knowledge of play at work, with the forthcoming chapters addressing these opportunities. However, it is noted that there is not enough scope in this thesis to exploit all avenues or opportunities for further research. Nevertheless, the subsequent chapters in this thesis make several important contributions by specifically examining the potential ‘dark’ side of play; investigating and testing innovative moderators and mediators and their effects; applying COR theory as the overarching theoretical perspective; examining important instrumental and interpersonal aspects that are unique to engaging in play in an organisational setting; and defining and empirically testing the role of different types and operationalisations of play at work.

¹ An extended version of this chapter (An Integrative Review and Agenda for Future Research) has been published in the *Journal of Management*. Reference: **Petelczyc, C. A.**, Capezio, A., Wang, L., Restubog, S. L. D., & Aquino, K. (2018). Play at work: An integrative review and an agenda for future research. *Journal of Management*. (ABDC ranking: A*, Financial Times 50). Note that the literature review presented below extends the JOM article by explicitly linking gaps with the contributions of this thesis. The collation of previous definitions, empirical research and theoretical perspectives was conducted independently by the author. Research on playfulness was also added by the author, as the JOM article focused on play as an activity.

2.1 Introduction

An integrative review on play at work is necessary because although reviews have been conducted on adult play in general (Van Vleet & Feeney, 2015a), the research on play in the workplace is yet to be reviewed. Taking stock of current knowledge regarding play in the work context is important because as Johns (2006) has highlighted, the workplace is a unique environment, and while employees may typically engage in play outside of work for fun, they may engage in play at work to develop and maintain instrumental relationships that have performance value and benefits.

Moreover, the absence of a synthesis results in considerable confusion surrounding the concept of play at work. For example, play has been conflated with concepts such as ceremonies (Dandridge, 1986), celebrations (Ford et al., 2005) and fun (Karl & Peluchette 2006a, 2006b). The lack of definitional convergence and construct validity poses a significant challenge in interpreting the findings on play at work. Indeed, Van Vleet and Feeney (2015a) argued that the absence of a satisfying definition of play represents a major reason for the lack of progress in play research.

Existing research on play at work is also fragmented and inconsistent. This is partly attributable to the fact that the broader research on play in adulthood outside the work context has heavily informed the research on play at work. As a result, it seems likely that the general theories of play may be underspecified because they do not account for variables unique to organisational settings. Fragmentation is also likely due to empirical studies being spread across several disciplines, including psychology (e.g. developmental, Barnett, 1990; personality, Proyer, 2012, Proyer & Jehle, 2013; social, Van Vleet & Feeney, 2015a); sociology (Figler & Whitaker, 1995); education (Saracho & Spodek, 2003); management (Jacobs & Statler, 2006); and sociology, anthropology and philosophy (for a brief summary, see Statler et al., 2009)—with minimal attempts at integration. Given the particular foci and

paradigmatic preferences of different disciplines, play has been studied as a trait (Glynn & Webster, 1992; Van Vleet & Feeney, 2015a), as an activity (Abramis, 1990; DesCamp & Thomas, 1993; Van Vleet & Feeney, 2015a, 2015b) and as an organisational feature (Dandridge, 1986; Locke 1989; Sørensen & Spoelstra, 2011). Depending on how it is conceptualised, defined and measured, the empirical findings that emerge from different studies examining the antecedents and consequences of play are likely to vary, perhaps considerably.

This review chapter addresses these limitations by integrating the research on play in the workplace while also updating the current state of knowledge. The review is organised in three sections. First, the existing definitions of play and their limitations are reviewed. Then a discussion is presented on how a recent conceptualisation of play in adulthood can help move the field towards greater conceptual convergence. Second, theoretical perspectives and empirical studies on play in the workplace are reviewed, focusing both on its antecedents and its consequences. Third, a promising agenda for future research is proposed, which focusses on several important issues that have emerged from the literature review. These issues are organised in two sections, refining and extending the current research on play, and generating novel ideas and new research directions on unexplored areas of inquiry.

2.2 Definition of Play at Work

Before summarising the current state of the literature on play at work, it is important to clearly define play at work. Having a clear definition allows us to identify and analyse research relevant to the current literature review and will inform the empirical research conducted in the later chapters of this thesis. Clarity and understanding of the theoretical perspectives, antecedents and outcomes of play is also enhanced when supplemented and informed by a discussion of the key features and previous definitions of play that have been applied. Although many studies have examined play in the work context, there is little

consensus in the way in which they have defined the construct. Berlyne (1960) has suggested that defining play is challenging, partly because it may occur in many settings, and that play may take different forms. Indeed, play at work has been conceptualised as games, joking, humour, puzzles, role-playing, friendly competitions and sporting events.

Previous research has emphasised different aspects of play as its defining features and a summary of these is provided in Table 1. Some scholars have argued that play is an activity that must be enjoyable (Costea et al., 2005; Hartung, 2002; Linder et al., 2001; Mainemelis & Ronson, 2006; Starbuck & Webster, 1991; Statler et al., 2011), whereas others have identified additional features that define what constitutes play. For example, whether a clear boundary of time and space separates play from serious activities (Caillois, 1958; Dandridge, 1986; Hartung, 2002; Huizinga, 1949; Linder et al., 2001; Mainemelis & Ronson, 2006) and whether the activity is freely chosen and process driven (Caillois, 1958; Dandridge, 1986; Hartung, 2002; Huizinga, 1949; Linder et al., 2001; Statler et al., 2011). Others have asserted that play involves social interaction (Costea et al., 2005; Huizinga, 1949; Linder et al., 2001; Sandelands, 2010; Statler et al., 2011), has specified rules (Caillois, 1958; Huizinga, 1949; Linder et al., 2001), must be completely ‘in the moment’ and absorbing (Hartung, 2002; Huizinga, 1949; Starbuck & Webster, 1991; Van Vleet & Feeney, 2015b) and involves an element of imagination or make-believe (Linder et al., 2001; Mainemelis & Ronson, 2006; Sandelands, 2010).

Table 1*Previous Definitions of Play*

Citation	Definition	Does the definition refer to the following?						
		Time/Space	Freely chosen	Positive affect	Social	Rules	Absorbing	Make-believe
Huizinga, 1949	‘Summing up the formal characteristics of play, we might call it a free activity standing quite consciously outside “ordinary” life as being “not serious,” but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner. It promotes the formation of social groupings which tend to surround themselves with secrecy and to stress their difference from the common world by disguise or other means’. (p. 13)	Yes	Yes	No	Yes	Yes	Yes	Yes
Caillois, 1958	Play is an activity that is free (not obligatory); separate (occurs within fixed time/space limits); uncertain (the course and result are unknown beforehand); governed by rules (regulated); and make-believe.	Yes	Yes	No	No	Yes	No	Yes
Dandridge, 1986	‘Play is contrasted to work as a freely chosen activity: something we do because we want to rather than have to.’ Both	Yes	Yes	Yes	No	No	No	No

Citation	Definition	Does the definition refer to the following?						
		Time/Space	Freely chosen	Positive affect	Social	Rules	Absorbing	Make-believe
	chronologically and physically, boundaries are defined around play; the outcomes of play are often uncertain and unknown and are not the focus of play; and play is related to emotions (p. 161).							
Abramis, 1990	Play as a game refers to a game, sport or puzzle and is usually competitive, challenging and associated with skills, autonomy and/or feedback. ‘Goofing around’ is informal with less structure, may encompass humour and joking and is generally an unstructured ‘child-like’ type of play.	No	No	No	Yes (Game)	No	No	No
Starbuck & Webster, 1991	‘An activity that produces both immediate pleasure and involvement’. (p. 73)	No	No	Yes	No	No	Yes	No
Costea et al., 2005	Play is carried out in the pursuit of wellness and ‘it connects value spheres and mediates important boundaries in social activities and personal existence in all human societies; it is the occasion of collective and individual eruptions of passion, of exuberance and anger, of resistance and agitation, of effervescence and candour’. (p. 140)	No	No	Yes	Yes	No	No	No
Mainemelis & Ronson, 2006	‘A behavioral orientation consisting of five interdependent and circularly interrelated elements: a threshold experience	Yes	No	Yes	No	No	No	Yes

Citation	Definition	Does the definition refer to the following?						
		Time/Space	Freely chosen	Positive affect	Social	Rules	Absorbing	Make-believe
	(awareness that play is distinct from ordinary life); boundaries in time and space; uncertainty-freedom-constraint (play involves surprise, uncertainty or unresolved possibility); a loose and flexible association between means and ends; and positive affect'. (p. 84)							
Sandelands, 2010	Play is 'a sharing of life with others' (p. 72). Boundary between fantasy and reality where new social arrangements arise.	No	No	No	Yes	No	No	Yes
Statler et al., 2011	'Situations in which people engage in playful behaviors deliberately with the intention to achieve serious, work-related objectives'. (p. 236)	No	Yes	Yes	Yes	No	No	No
	'Intrinsically motivated, fun activity, carried out recursively in the form of a practice, typically in the context of social relationships'. (p. 238)							
Van Vleet & Feeney, 2015b	'An activity or behavior that (a) is carried out with the goal of amusement and fun, (b) involves an enthusiastic and in-the-moment attitude or approach, and (c) is highly interactive among play partners or with the activity itself'. (p. 640)	No	No	Yes	Yes	No	Yes	No

The large number of features identified by previous research, combined with the lack of consensus regarding the features that represent play, creates confusion and ambiguity about what constitutes play in the workplace. Consequently, many activities in the workplace are believed to be play when they in fact satisfy only some features of play but not others. For example, morning tea, a company-wide trip or outing (e.g. Karl et al., 2005) and celebrations of personal/professional milestones (e.g. Ford et al., 2005) may be enjoyable, fun and voluntary, but these activities are rarely absorbing and do not contain any element of fantasy. Similarly, although some activities are highly absorbing (e.g. programming a software application; debating on the merits of a statistical procedure), employees may not pursue these purely for the goal of enjoyment and fun.

To address these important definitional issues, a recent integrated definition of play in adulthood (Van Vleet & Feeney, 2015b) is reviewed and discussed. This definition can guide future theory development and empirical research by offering a more precise conceptualisation of play in the work context. It is drawn upon for several reasons. First, this definition focuses on adult play as opposed to children's play. Second, since it is based on a recent review of the literature on adult play, it represents the most current definition of play available. Third, although this definition is based on a comprehensive review of prior conceptualisations of play, it focuses on three core features of play that differentiates it from other activities. This approach allows flexibility and inclusiveness, which would enable future research to examine different types of play at work.

Van Vleet and Feeney (2015b) have defined play in adulthood as 'an activity or behaviour that (a) is carried out with the goal of amusement and fun, (b) involves an enthusiastic and in-the-moment attitude or approach, and (c) is highly interactive among play partners or with the activity itself' (p. 640). According to this definition, an essential feature of play is that the activity itself is carried out with the goal of experiencing amusement,

enjoyment and fun. This aspect of play has been emphasised by the majority of previous conceptualisations of play in the workplace (Costea et al., 2005; Dandridge, 1986; Hartung, 2002; Linder et al., 2001; Mainemelis & Ronson, 2006; Starbuck & Webster, 1991; Statler et al., 2011). The focus on amusement, enjoyment and fun explains why play activities are often voluntary and process-focused (Caillois, 1958; Dandridge, 1986; Hartung, 2002; Huizinga, 1949; Linder et al., 2001; Statler et al., 2011) and why individuals are intrinsically motivated to engage in play without external pressure or demand (Linder et al., 2001; Statler et al., 2011). However, not all activities that are voluntary and intrinsically motivated are considered play. For example, organisational citizenship behaviours, such as giving advice to a colleague, may be intrinsically motivated but are not typically experienced and described as play (Podsakoff et al., 2000). Therefore, it is the goal of enjoyment and amusement as opposed to the voluntary and intrinsic motivation aspect of the activity that distinguishes play from other activities.

The emphasis on the experience of enjoyment and fun does not mean that individuals do not possess additional goals when engaging in play. This is especially true in the workplace: Researchers have suggested that employees may choose to engage in play with a higher-order end-goal or outcome in mind (Linder et al., 2001). For example, adults often play to learn new skills (Kolb & Kolb, 2010). Moreover, an employee may choose to play golf with a supervisor to increase liking and trust or to garner career sponsorship. Similarly, an organisation may sponsor an enjoyable soccer game to increase cohesion and boost morale. In this case, the organisation is motivated to sponsor an activity that is enjoyable and fun for its members, but it is also motivated to use the event to accomplish other important organisational objectives, including boosting morale. Therefore, play is not defined by whether additional goals exist when performing an activity, but rather, by whether an activity is driven primarily by the goal of amusement and fun. However, as discussed in section 5.6

(future directions), the focus on additional goals associated with play in the workplace, such as instrumental and strategic goals, represents an important direction for future research to pursue.

Van Vleet and Feeney (2015b) have emphasised a second essential feature of play, namely, that play requires an enthusiastic and in-the-moment attitude. They used two prototypical images of play—children playing hide-and-seek and dogs playing catch in parks—to promote the importance of this feature. When individuals are playing, they express an active and in-the-moment attitude that enables them to experience some psychological distance from outside stressors and responsibilities. Previous conceptualisations of play have described this feature as immersive and absorbing (Costea et al., 2005; Csikszentmihalyi, 1975; Huizinga, 1949; Linder et al., 2001; Sandelands, 2010; Statler et al., 2011). For example, flow theory describes the experience of play as ‘flow’, which arises when an individual is highly involved and completely absorbed in the activity (Csikszentmihalyi, 1975). This feature of play also resonates with the idea that play occurs within a clear boundary that separates it from other activities (Caillois, 1958; Dandridge, 1986; Hartung, 2002; Huizinga, 1949; Linder et al., 2001; Mainemelis & Ronson, 2006)—when playing, the individual’s attention is directed away from the outside world and focused on the activity itself. For example, musicians often describe their experience of playing instruments as completely immersive and absorbing, temporally rendering them removed from outside reality. Although play activities in the workplace vary in levels of absorption and intensity, an enthusiastic and in-the-moment attitude represents a core feature that differentiates play from other enjoyable activities.

The third essential feature of play is that the activity is highly interactive. The high level of interaction can occur with the activity itself or with other individuals (Van Vleet & Feeney, 2015b). Based on this feature, enjoyable and absorbing activities that are passive

would not be deemed as play. For example, although reading a book may be both enjoyable—the goal of reading is to enjoy the book—and absorbing—the reader may indeed become captivated by the plot of the book—typically, reading is not regarded as play primarily because it involves little or no interaction with the book. However, playing a video game could be considered play because it usually requires a high level of engagement and immersion in the game itself (Caroux et al., 2015).

These three defining features of play help us to understand what play is and how it is different from similar constructs. For example, community support activities (as in Ford et al., 2005), daily coffee breaks (as in Dandridge, 1986) and non-work activities, such as personal phone calls with friends being conducted at work (as in D'Abate, 2005; Eddy et al., 2010), do not constitute play at work, because these activities do not require an interactive or playful approach, even when they are engaged in for the purpose of having fun. Similarly, although fantasy football is considered play because it is likely to satisfy all three criteria of the definition, observing a colleague play fantasy football is not considered play because it is a passive activity that does not require much interaction. There has also been some confusion in the way the terms 'fun' and 'play' have been applied in prior research. Workplace fun has been defined as a multidimensional construct that 'involves any social, interpersonal, or task activities at work of a playful or humorous nature which provide an individual with amusement, enjoyment, or pleasure' (Fluegge, 2008, p. 15). Fun has been examined in three ways—as a state (i.e. emotional reaction to having fun at work; Karl et al., 2005), as an evaluation of the workplace (i.e. perceptions/climate for fun; Fleming, 2005) and as specific features of the work environment (i.e. manager support for fun, fun activities, fun job responsibilities and co-worker socialising; Ford et al., 2005). There are some obvious overlaps between fun and play, but there are also important differences that make play unique. Playful activities are carried out with the goal of having fun. However, fun activities do not

have to meet the other criteria of play and therefore encompass more than play. For example, reading an interesting book or listening to a colleague telling a joke can all be fun, but these activities lack the interactive element of play. In addition, although playful activities can occur in birthday parties, celebrations of personal or professional milestones (e.g. Ford et al., 2005) and food-related activities, such as having morning tea (e.g. Karl et al., 2005), these events constitute social gatherings rather than play because they do not meet all three defining features of play. For example, these activities are not typically perceived to rank high in terms of absorption. Thus, it is suggested that play represents a more narrowly focused construct than workplace fun.

2.3 Other Approaches to Studying Play in Organisations

2.3.1 Play as a Trait

Although Van Vleet and Feeney (2015b) have defined play as a type of activity or behaviour that any individual can engage in, it is important to note that there are other approaches to studying play in the workplace. In the organisational literature on play, earlier research has approached play from a trait perspective. For example, the pioneering work of Glynn and Webster (1992) has focused on differentiating individuals based on a trait called playfulness—a stable tendency to approach activities in a non-serious manner. Playful individuals tend to have more innovative attitudes and higher intrinsic motivation, and they are less orderly compared with those who are less playful (Glynn & Webster, 1992). More recently, Mainemelis and Ronson (2006) have also approached play as an individual's behavioural orientation to performing any type of activity in a playful way. Further contributing to this trait perspective, Barnett (2018) conducted research on the conceptualisation of playfulness in young adults (i.e. university students), and proposed that playfulness is the fusion of the following elements: 'generating enjoyable/fun/creative thoughts, ideas or pursuits; without significant concern about the appraisal of others (e.g.

social expectations) or the consequences of one's behaviours (nonserious); and often shown as good-natured humour (joking, teasing, clowning around)' (p. 29).

However, perhaps the most widely used definition of playfulness is offered by Barnett (2007), who has suggested that playful individuals have 'a higher predisposition to frame a situation in such a way to provide oneself (and possibly others) with amusement, humour, and/or entertainment' (p. 955). As discussed by Lockwood and O'Connor (2017), two elements of this definition are worth noting. The first is the connection between playfulness and humour, which appears throughout the literature. However, recent research has suggested that adult playfulness does not necessarily correlate with humour and that, even though related, they are in fact distinct (Proyer, 2014; Proyer & Jehle, 2013). Second, Barnett's definition reflects a common understanding that playfulness is a stable, unchanging personality trait (e.g. Webster & Martocchio, 1992). However, an inherent or genetic model of playfulness has never been theoretically or empirically established.

2.3.2 Play as an Organisational Feature

Some studies, although less common than the studies that use the activity or trait approach, have approached play from the perspective of organisational culture. Sørensen and Spoelstra (2011) have suggested that just as individuals differ in playfulness, organisations differ in the degree to which they encourage and support playful activities. For example, the 'Fish! Philosophy' emerging from the study of the Pike Place Fish Market in Seattle, Washington, has explicitly stated that playing at work can be an important part of a successful organisational culture (Lundin et al., 2000). Many contemporary successful organisations, such as Google, have embraced this philosophy and elevated play as a central aspect of their culture (Mainemelis & Ronson, 2006); that is, they view play as being core to their value instead of an affordable distraction. For example, because of the prominence of play in Google's culture, it has been described as a place for both work and play (Schmidt &

Rosenberg, 2014). Although the trait and organisational approaches differ from the activity approach in how they study play, Van Vleet and Feeney's (2015b) definition of play can also inform the trait and organisational approaches. For example, based on the three core features of play, it may be incomplete to define playful individuals as those who frame situations in a non-serious and amusing manner. Rather, playful individuals may also approach activities with a high level of absorption and interaction.

2.4 Current State of Knowledge: A Review and Synthesis

2.4.1 Theoretical Perspectives

Five main theoretical perspectives have been used to understand the drivers, as well as the effects, of play at work. Two theoretical perspectives, the stimulus-seeking and operant conditioning perspectives, focus more on drivers or motives for play, and the other three perspectives, the flow perspective, the cathartic nature of play perspective and the cognitive and social processing perspective of play, pertain more to the outcomes of play. These frameworks have been invoked in the play literature inconsistently with no dominant perspective emerging.

2.4.1.1 Stimulus-Seeking Perspective of Play

According to Berlyne's (1960) theory of stimulus seeking, individuals attempt to vary and regulate their level of stimulation based on their current level of stimulus input. More specifically, play has been posited to represent stimulus-seeking behaviour, through which people engage in play to experience pleasure and enjoyment, which leads to an optimum stimulation level. Individuals aim to avoid both over-stimulation and boredom. Therefore, those who experience boredom seek to raise their level of stimulation by engaging in playful activities (Starbuck & Webster, 1991). Building upon this theory, Ellis (1973) argued that play 'is motivated by the need to elevate the level of arousal towards the optimal' (p. 110). That is, people are motivated to play to increase their levels of stimulation.

2.4.1.2 Operant Conditioning Perspective of Play

The basic premise of operant conditioning is that individuals are more likely to engage in behaviour that brings about positive, rather than negative, consequences (Skinner, 1954). That is, an action or behaviour is enacted because of its likely consequence. Play has also been considered an instrumental or operant behaviour (Rieber, 2001; Starbuck & Webster, 1991). More precisely, engaging in play typically offers some reward (e.g. increased positive affect or a prize from winning a game or competition), which encourages individuals to continue engaging in that behaviour. However, if they begin to experience punishment (e.g. feelings of failure or loss) or if the positive reinforcement stops, they are more likely to cease the activity owing to decreased motivation (Skinner, 1954).

2.4.1.3 Flow Perspective of Play

Csikszentmihalyi (1975) was one of the first researchers to systematically and empirically study play in adults. Csikszentmihalyi studied ‘autotelic’ activities that were considered ‘play’ by his subjects (e.g. rock climbing, playing chess and dancing). Such activities theoretically only have intrinsically motivating features and have no extrinsically motivating features. The activities often involve problem-solving and creativity as well as a unique feeling called ‘flow’ that arises when an individual is highly involved and completely absorbed in an activity. In positive psychology, this is described as ‘being in the zone’. Activities that create flow are generally within one’s ability but require some level of skill; involve a limited stimulus field; result in a loss of self-consciousness; give one a sense of control; and contain non-contradictory demands and unambiguous feedback (Abramis, 1990). It has been argued that playing games is the type of play that can produce ‘flow’ because games are associated with challenge, skills, autonomy and feedback (Abramis, 1990). The theory of flow argues that play increases motivation because it creates a sense of effortless flow between learning and acquiring skills and that it also increases job satisfaction, sense of

competence (Abramis, 1990) and divergent thinking (Berg, 2001; Mainemelis & Ronson, 2006).

2.4.1.4 Cathartic Nature of Play

A group of theories can be subsumed under the cathartic perspectives of play, which suggests that engaging in play provide a person with relief. The cathartic perspective argues that play provides psychological relief and releases emotional tension by allowing individuals to express and release their frustrations and stress in ways that are not damaging or costly to themselves or to the organisation (Ellis, 1973). It also argues that it is more beneficial for the individual, and consequently, the organisation, if stress is released, rather than kept ‘bottled up’ (DesCamp & Thomas, 1993). Indeed, Giddens (1964) conceived of play as ‘a catharsis which not only dissipates emotional tension but makes socially undesirable responses acceptable through the mechanisms of canalization and sublimation’ (p. 78). According to Giddens’s (1964) recreation theory:

The origins of play lie in the need for mental and physical recuperation from the stressors and strains imposed on the individual ... [and that] the psychological function of play is to restore the physically and mentally fatigued individual through participation in activity which is pleasurable and relaxing. (p. 76)

Similarly, Butler (2015) has described relief theory in relation to humour, whereby laughter (e.g. dark humour) is the expenditure of psychical energy and can be a release of the build-up of nervous energy. These theories have specifically addressed the notion of play’s ability to reduce fatigue and emotional exhaustion (DesCamp & Thomas, 1993; Hunter et al., 2010; Sørensen & Spoelestra, 2011) and have clarified the reason that active physical play protects nurses from the stressors and strain of their job (DesCamp & Thomas, 1993).

2.4.1.5 Social and Cognitive Processing Perspectives of Play

Alongside theoretical perspectives that focus on the drivers and outcomes of play, social and cognitive processing perspectives also appear in the literature, although these are less prevalent. Webster and Martocchio (1993) drew upon the social information processing theory (Salancik & Pfeffer, 1978) and the cognitive categorisation theory (Rosch, 1975) to explain how play can lead to positive work outcomes. They aimed to explain the finding that labelling and framing work tasks as play could improve one's task performance. According to the social information processing theory, the label of work tasks influences individuals' attitudes towards those tasks. In addition, the cognitive categorisation theory argues that to form 'mental shortcuts', individuals construct categories in our minds to make sense of, and order, the world. People associate certain expectations, attitudes, cognitions, motivations and behaviours with each of these categories. The category of 'work' is processed differently from the category of 'play', which generally has more positive associations (Webster & Martocchio, 1993). Therefore, labelling a work task as play is likely to improve one's attitude towards that task.

2.5 Review of Extant Empirical Literature

2.5.1 Antecedents of Play at Work

The empirical literature on the antecedents of play is less comprehensive and less nuanced than the literature on outcomes. Empirical studies examining the antecedents of play are organised in terms of individual, task and organisational factors.

2.5.1.1 Individual Factors

Several individual factors have been found to contribute to one's likelihood of playing in the workplace. Personality traits and individual differences affect people's attitudes towards, and perceptions of, play in the workplace and therefore their likelihood of engaging in play at work. For example, a large body of research has examined the trait of playfulness

(Glynn & Webster, 1992)—playful individuals are characterised as humorous, natural, active, lively, gregarious and joyful, and are likely to engage in behaviours such as ‘joking, teasing, clowning, and acting silly’ (Barnett, 2007, p. 955).

2.5.1.2 Task-Related Factors

Different task- and job-related factors have also been found to increase an individual’s likelihood of playing. These include job characteristics such as autonomy, skill variety, challenge and feedback (Abramis, 1990; Csikszentmihalyi, 1975). For example, in his study ‘Banana Time’, Roy (1959) showed that employees assigned monotonous and simple tasks engaged in more play at work.

2.5.1.3 Organisational and Industry Factors

Organisational factors have also been shown to contribute to play in the workplace. For example, play at work was found to occur more often when it was supported by the organisations and when leaders have high playfulness as a trait (West et al., 2013). The industry type has also been found to influence whether play can be incorporated in daily work activities (Hunter et al., 2010). That is, creative industries are more likely to encourage the incorporation of play into work.

2.5.2 Consequences of Play at Work

The previous research has investigated the consequences of play using three different approaches: play as an activity, as a trait and as an organisational feature. Next, the studies on the consequences of adult play are organised by three levels of analysis: individual, team and organisational levels. A summary of this review is also presented in Table 2.

Table 2*Summary of Research Findings on Outcomes of Play*

Level of analysis	Approach	Type of outcome	Variable	Effect direction	Example studies
Individual	Activity	Emotional	Fatigue	-	Hunter et al, 2010
Individual	Activity	Emotional	Stress	-	Sørensen & Spoelestra, 2011; DesCamp & Thomas, 1993
Individual	Activity	Emotional	Boredom	-	Hunter et al, 2010; Roy, 1959
Individual	Activity	Emotional	Burnout	-	DesCamp & Thomas, 1993
Individual	Activity	Emotional	Emotional relief	+	Locke, 1989
Individual	Trait	Emotional	Optimism	+	Yarnal & Qian, 2011 ^a
Individual	Trait	Emotional	Positive affect	+	Webster & Martocchio, 1992 ^b ; Proyer & Ruch, 2011; Yarnal & Qian, 2011; Yue et al., 2016
Individual	Trait	Emotional	Stress	-	Yarnal & Qian, 2011
Individual	Activity	Attitudinal	Job Satisfaction	+	Abramis, 1990; Rood & Meneley, 1991
Individual	Activity	Attitudinal	Employee voice	+	Locke, 1989; Sørensen & Spoelestra, 2011
Individual	Activity	Attitudinal	Organisational involvement	+	Abramis, 1990
Individual	Activity	Attitudinal	Organisational involvement	-	Abramis, 1990
Individual	Trait	Attitudinal	Job Satisfaction	+	Glynn & Webster, 1992; Yu et al., 2007
Individual	Trait	Attitudinal	Embrace challenge and cope with failure	+	Guitard et al., 2005
Individual	Trait	Attitudinal	Innovative attitude	+	Glynn & Webster, 1993
Individual	Trait	Attitudinal	Intrinsic motivation	+	Glynn & Webster, 1993; Amabile et al., 1994
Individual	Activity	Cognitive	Sense of competence	+	Abramis, 1990
Individual	Activity	Cognitive	Creativity	+	Hunter et al, 2010; Russ & Wallace, 2013

Level of analysis	Approach	Type of outcome	Variable	Effect direction	Example studies
Individual	Activity	Cognitive	Divergent thinking and problem-solving	+	Jacobs & Statler, 2006; Glynn, 1994
Individual	Activity	Cognitive	Learning and mastery	+	Abramis, 1990; Kolb & Kolb, 2010
Individual	Trait	Cognitive	Cognitive spontaneity	+	Glynn & Webster, 1992; Yarnal & Qian, 2011
Individual	Trait	Cognitive	Academic performance	+	Proyer, 2011
Individual	Trait	Cognitive	Creativity	+	Glynn & Webster, 1992; Guitard et al., 2005; Yarnal & Qian, 2011
Individual	Trait	Cognitive	Ingenuity	+	Proyer, 2012
Individual	Trait	Cognitive	Flexibility and adaptability to change	+	Guitard et al., 2005
Individual	Activity	Task-related	Task performance	-	Abramis, 1990; Sørensen & Spoelestra, 2011
Individual	Activity	Task-related	Training transfer	+	Webster & Martocchio, 1993
Individual	Activity	Task-related	Task involvement and interest	+	Webster & Martocchio, 1993
Individual	Activity	Task-related	Time spent on task	+	Sandelands, 1988
Individual	Trait	Task-related	Task performance	+	Bozionelos & Bozionelos, 1999; Glynn & Webster, 1992, 1993; Webster & Martocchio, 1992; Yu et al., 2007
Individual	Trait	Task-related	Learning	+	Webster & Martocchio, 1992
Individual	Trait	Task-related	Task involvement	+	Glynn & Webster, 1992; Webster & Martocchio, 1992
Individual	Trait	Task-related	Work engagement	+	Hurmelinna-Laukkanen et al., 2016
Individual	Trait	Task-related	Innovative behaviour	+	Hurmelinna-Laukkanen et al., 2016; Yu et al., 2007

Level of analysis	Approach	Type of outcome	Variable	Effect direction	Example studies
Team	Activity	Climate & dynamics	Trust	+	Hunter et al, 2010
Team	Activity	Climate & dynamics	Creative climate in meetings	+	West et al., 2016
Team	Activity	Climate & dynamics	Bonding and social interaction	+	Hunter et al., 2010; Sørensen & Spoelestra, 2011; Roy, 1959
Team	Activity	Climate & dynamics	Social cohesion	+	Roy, 1959
Team	Activity	Climate & dynamics	Hierarchical roles/relationships	-	Locke, 1989
Team	Activity	Climate & dynamics	Sense of solidarity	+	Locke, 1989
Team	Trait	Climate & dynamics	Interaction with others	+	Yarnal & Qian, 2011
Organisational	Activity	Culture & climate	Friendly atmosphere	+	Sørensen & Spoelestra, 2011
Organisational	Activity	Culture & climate	High commitment culture	+	Sørensen & Spoelestra, 2011
Organisational	Activity	Performance	Capable of relating to an unknown future	+	Andersen & Pors, 2014
Organisational	Activity	Performance	Organisational decision-making	+	Pors & Andersen, 2015
Organisational	Activity	Performance	Organisational creativity	+	West et al., 2013

2.5.2.1 Individual-Level Outcomes

Prior studies examining the effects of play on individual-level outcomes can be categorised into four broad groups on the basis of the variables they consider, namely, *affect and well-being*, *attitude*, *cognition* and *task-related* outcomes.

2.5.2.1.1 Play as an Activity

Several studies have examined the emotional outcomes of play activities at work. Play activities reduce fatigue (Hunter et al., 2010), stress (DesCamp & Thomas, 1993; Sørensen & Spoelestra, 2011) and boredom (Hunter et al., 2010; Roy, 1959); protect employees' against stressors and burnout (DesCamp & Thomas, 1993); and help medical professionals deal with the negative emotions associated with losing a patient (Locke, 1989). Play activity has been linked to work-related attitudes. For example, play has been found to increase job satisfaction (Abramis, 1990; Rood & Meneley, 1991). Playing at work also allows employees to express their emotions and voice their criticisms through play (Locke, 1989; Sørensen & Spoelestra, 2011). Studies have also examined the cognitive outcomes of play activities, including increased learning (Kolb & Kolb, 2010), mastery, sense of competence (Abramis, 1990) and creativity (Hunter et al, 2010; Russ & Wallace, 2013). Play activity stimulates divergent thinking and improves problem-solving (Glynn, 1994; Jacobs & Statler, 2006). The relationship between play and creativity is largely driven by experienced positive affect, which has been linked to increased creativity (Isen et al., 1987). Specifically, positive affect results in increased endorphins and oxygen as well as increased blood flow to the brain, which facilitates clearer and more creative thought processes (Urquhart, 2005). Play as an activity can also influence task-related outcomes. It can decrease task performance because it serves as a distraction (Abramis, 1990; Sørensen & Spoelestra, 2011). Further, labelling work tasks as play increases the amount of time spent on the task (Sandelands, 1988), the training

transfer and learning and the interest in tasks and task involvement (Webster & Martocchio, 1993).

2.5.2.1.2 Play as a Trait

In addition to approaching play as an activity, studies have approached play as a trait, but have not widely examined the outcomes of playfulness (Alatalo et al., 2018). These studies have found that adult playfulness is associated with emotional and affective outcomes, including lower levels of stress and increased optimism (Yarnal & Qian, 2011) and positive affect (Proyer & Ruch, 2011; Webster & Martocchio, 1992; Yarnal & Qian, 2011; Yue et al., 2016). Playfulness is also associated with effective management of challenges and failure (Guitard et al., 2005), innovative attitudes (Glynn & Webster, 1993), intrinsic motivation (Amabile et al., 1994; Glynn & Webster, 1993) and job satisfaction (Glynn & Webster, 1993; Yu et al., 2007). In terms of cognitive outcomes, playfulness has been shown to be associated with cognitive spontaneity (Glynn & Webster, 1993; Yarnal & Qian, 2011), creativity (Glynn & Webster, 1993; Guitard et al., 2005; Yarnal & Qian, 2011), ingenuity (Proyer, 2012), adaptability to change (Guitard et al., 2005) and academic performance (Proyer, 2011). In terms of task-related consequences, playfulness has been found to be positively related to task performance (e.g. Bozionelos & Bozionelos, 1999; Glynn & Webster, 1992, 1993; Webster & Martocchio, 1992; Yu et al., 2007), learning (Webster & Martocchio, 1992), task involvement (Glynn & Webster, 1992; Webster & Martocchio, 1992), work engagement (Hurmelinna-Laukkamen et al., 2016) and innovative behaviour (Hurmelinna-Laukkamen et al., 2016; Yu et al., 2007).

2.5.2.2 Team and Relational Outcomes

2.5.2.2.1 Play as an Activity

Prior studies examining the effects of play on team and relational outcomes have predominantly taken an activity approach. Play as an activity has been shown to increase trust

between team members (Hunter et al., 2010) and to promote a creative and productive climate in work meetings (West et al., 2016). Play also increases bonding and social interaction among colleagues (Hunter et al., 2010; Roy, 1959; Sørensen & Spoelestra, 2011). It can even help reduce the boundaries between hierarchical roles and relationships and produce a sense of solidarity between individuals of different hierarchies and status (Locke, 1989).

2.5.2.2.2 Play as a Trait

Only one study was found that examined the impact of play as a trait on social outcomes, which shows that playfulness is related to increased and improved interactions with others (Yarnal & Qian, 2011).

2.5.2.3 Organisational Outcomes

Play as an organisational feature. All studies focusing on the outcomes of play at the organisational level have treated play as an organisational characteristic. Prior studies examining the effects of play on organisational outcomes are organised into two different groups by the variables they have examined. These are *organisational culture* and *climate and organisational performance*. Play at work has been shown to contribute to a friendlier organisational atmosphere and high commitment culture (Sørensen & Spoelestra, 2011). Organisations that introduce play have also been shown to be more capable of relating to an unknown future (Andersen & Pors, 2014) and more flexible in decision-making (Pors & Andersen, 2015). Play has also been shown to promote organisational creativity via openness, intrinsic motivation and collaboration of team members (West et al., 2013).

2.6 Directions for Theory and Research

Given that play at work represents a relatively unexplored domain of research, there are many new and exciting questions that are important to pursue. In this final section, a promising agenda for future research is outlined, which focusses on several important issues that have emerged from the review of existing work. These issues and suggestions are

organised in two sections: (a) refinement and extension of existing research on play and (b) breaking new ground and new research directions on unexplored areas of inquiry. Thus, these suggestions should help move the field forward by broadening our understanding of play in the workplace.

2.6.1 Refinement and Extension of Existing Research on Play in the Workplace

2.6.1.1 Dark Side of Play

Although there are divergent perspectives regarding whether play in the workplace is beneficial or detrimental (DesCamp & Thomas, 1993; Glynn & Ibarra, 1988), this review of the literature reveals that most empirical research on play has focused on its positive outcomes. Therefore, less knowledge exists about the types of negative and dysfunctional consequences associated with engaging in play at work. In the schoolyard, children leaping over obstacles in a game of tag can stumble and hurt themselves. The anecdotal case of Google employees climbing a ladder to catch a meeting (J. B. Stewart, 2013) might also result in a similar fate. These are the potential physical costs associated with play. In organisations, the costs of play are more likely to be social in nature. This notion recognises that play at work can be interpreted differently. Further, research on social cognition has shown that a host of factors influence people's interpretations of social reality independent of the actual events they perceive. Among these are motivated processes that lead them to make sense of their world in ways that support their preferred views (Kunda, 1990) and the attitudes and perceptions expressed by the people around them (Salancik & Pfeffer, 1978). The inherent subjectivity of all perception, motivated cognition and the susceptibility of these perceptions to social influence are what can result in play being construed as unacceptable by observers and maybe even deserving of punishment.

Further, the first social cost of play is that the employee who engages in this activity will be perceived by others, particularly those who perceive the workplace as a domain for

‘serious’ task-related activity only, as being unmotivated, distracting or underperforming. Since play does not necessarily have to be directly related to the task being performed, observers who perceive employees playing rather than working could label them as ‘slackers’. Play might also be interpreted as exploitative in the sense that employees who are being paid to work should not be devoting their energy to an activity that gives them pleasure while ostensibly offering nothing of benefit to the company. Whether one’s colleagues interpret play in this light depends on many factors, including the local norms around work and play, as well as individual differences in the perceiver’s work values. One testable hypothesis based on the second possibility is that employees who strongly endorse the protestant work ethic perceive co-workers who incorporate play into their work as being lazier and less committed to their jobs (Sanchez-Burks, 2002, 2004). Researchers might also find generational differences such that so-called millennials judge co-workers who play on the job less harshly than do employees born in an earlier generation. Depending on how widely such perceptions are shared or on who holds them, the playful employee could bear the same costs as any other employee who is seen as underperforming; that is, they will receive lower salaries, fewer promotions or less respect from peers and authorities. These possibilities have not been systematically studied, as this review reveals, but they open many avenues for possible research on play as a determinant of individual work outcomes.

The second cost of play can be far more perilous to employees because their fate lies solely in the way another party interprets and subjectively experiences their playful behaviour. This cost is borne when a behaviour intended to be playful is perceived by an observer who may or may not be directly involved in the activity as an act of aggression or disrespect. This review suggests that play in the workplace can take several forms, including activities such as teasing, telling jokes and even physical touch as when co-workers jostle with one another while playing a sport in the company’s gymnasium. Since all social

behaviour is open to multiple interpretations, it is not far-fetched to suggest that many of the activities that fit the proposed definition of play can be construed and labelled by an observer or participant as being ‘offensive’, ‘racist’, ‘sexist’, ‘hostile’, ‘harassing’ or any of a myriad of terms that have been used by aggrieved employees to cast someone else’s behaviour in a detestable light. When this happens, those who interpret play in a negative way can choose to make their displeasure known to authorities. It is at this point that the cost to the employee who engages in play can range from a mild verbal reprimand to termination.

Although this review of the literature did not find any studies examining how playful behaviour, whether defined by the performer or by observers/targets, can lead others to perceive such behaviour as harmful or injurious, it does not seem unreasonable to suppose that differences in interpretation can occur and may be quite common. It is conceivable that if one were to carefully analyse the dynamics of a social interaction that led one party to charge another with workplace harassment, its early stages could include behaviours that fit the proposed definition of play. For example, two friends at a bar might start the evening by good-naturedly mocking one another’s imperfections only to find themselves embroiled in a fistfight several minutes later. Similarly, the give and take of social interaction between co-workers may transform itself from playful teasing, an engaging discussion about politics or a shared recounting of adventurous sexual escapades into a charge of harassment. This possibility represents the ‘dark side’ of play that is seldom discussed or studied in the current research on play in the workplace. This review will hopefully encourage researchers to investigate this dynamic. Thus, they may discover that in the same way that schoolyard play can leave its participants with bruises and broken bones, workplace play can sometimes leave those who cross someone’s subjective boundary with damaged reputations and fractured lives.

2.6.1.1.1 Contributions of This Thesis

Both empirical chapters (Chapters 3 and 4) included in this program of research aim to address this gap in our knowledge by investigating the potential ‘dark’ side of play as an activity (Study 1), and as a trait (Study 2), in the workplace. Specifically, this research program examines how and when play can result in worsened negotiation outcomes and in-role performance and in increased CWBs. It also considers that play can ‘backfire’ and result in negative consequences if it is perceived as being inauthentic or instrumentally motivated, or if an employee and their supervisor possess mismatched levels of playfulness.

2.6.1.2 Moderators

This review of the literature suggests that play is a complex phenomenon that could lead to positive as well as negative outcomes. However, existing studies have focused on its main effects and have paid little attention to factors that influence the effects of play. One way to extend the literature is to consider moderators at the individual, group and organisational levels.

At the individual level, studies on play in the workplace have alluded to the moderating role of self-regulation whereby play is likely to lead to positive outcomes if one can effectively regulate oneself. Self-regulation has been defined as the ‘ability to initiate and cease activities according to situational demands, to modulate the intensity, frequency, and duration of verbal and motor acts in social and educational settings’ (Kopp, 1982, p. 199–200). One’s ability to self-regulate could influence the extent to which one engages in play in an appropriate time and context. Therefore, if an individual can self-regulate to disengage in play when play is inappropriate (e.g. an important deadline is approaching), positive outcomes are more likely to occur. Conversely, one’s inability to self-regulate play behaviour may result in excessive play, which can ultimately lead to increased counterproductive behaviour; it can also waste people’s time and organisational resources and trigger

favouritism, idle chattering and excessive competition. Co-workers may also perceive they are being deliberately targeted or humiliated. Regardless of whether this is the case, play could result in wasting organisational resources and harming interpersonal relationships.

Little is known about the influence of time in determining the consequences of play. Recently, organisational scholars have suggested that understanding when things take place is crucial to understanding organisational phenomena (Mitchell & James, 2001; Shipp & Cole, 2015; Sonnentag, 2012). The most salient time issues relevant to play at work include the duration and timing of play. Duration refers to the length of time between the beginning and the ending of play, that is, the period in which an individual engages in play. For example, engaging in play over an extended period could distract an individual from performing work tasks and cause frustration among other organisational members because it distracts them from performing their own work. Extended periods of play could also lead to resentment in other employees, who view the individual as unproductive and not ‘pulling their weight’ within the organisation. Timing pertains to the time and day in which play occurs. For example, play is likely to result in positive outcomes when individuals do not have pressing work responsibilities or deadlines. It could also be beneficial at the start of the workday/shift when they are ‘settling in’ to their work routine. A critical examination of these timing issues may help us understand the extent to which play helps or harms performance and relationships.

Since playful activities often occur between individuals in social and team environments, future research may also consider how team and task characteristics both influence the consequences of play. Although teams represent the major vehicle through which tasks are accomplished in organisations (Ilgen et al., 2005), teams often fail to perform effectively (Hackman, 2011). Previous research has suggested that social barriers, such as the lack of rapport and trust among team members, could reduce team effectiveness by causing

people to self-censor unpopular opinions and perspectives (Phillips et al., 2004; Wang et al., 2016). Since it provides team members the opportunity to bond (Roy, 1959; Sørensen & Spoelestra, 2011), play is likely to enhance team effectiveness through the development of rapport, trust and solidarity. For example, when team members can play, they may become more comfortable with each other to share information honestly, even when the information is sensitive or dissenting. Moreover, since trust and cohesion are more important in teams performing highly interdependent tasks (Wageman, 1995), the type of team task is likely to influence the effects of play on team effectiveness. In this sense, the level of a team's interdependence would strengthen the positive effects of play on team effectiveness. Similarly, if play enhances team effectiveness by strengthening the social bond among team members, the benefits of play may also depend on the existing social dynamics in teams. In teams that already have high levels of social cohesion and trust, play may no longer be useful and can hinder team effectiveness by distracting team members from focusing on serious work. In contrast, playful activities would be more valuable when teams are newly formed and therefore team members are not yet comfortable interacting with one another.

It is also important to incorporate the role of the broader organisational context to understand the effectiveness of play at work. Organisational factors, such as culture, may serve as enablers or constraints of how employees respond to play. Plester (2009) found that in informal organisations, play (operationalised as humour) was considered an important cultural factor and was frequently observed. In more formal organisations, there were fewer observations of joking around, and activities designed to create and engage in play were often company-sponsored (e.g. soccer games during lunch), rather than impromptu or spontaneous. These observations suggest the possibility that employees may even respond to play with cynicism and a negative attitude when the company's culture does not encourage play. In this case, they may perceive that organisation-sponsored playful activities are insincere—a type of

‘manufactured play’. Moreover, the type of supervision has been proposed as a boundary condition that influences the way in which employees respond to play (e.g. joking around; Lang & Lee, 2010). These findings suggest that the leadership style and the support of playful activities may enable or inhibit play as well as shape its consequences.

2.6.1.2.1 Contributions of This Thesis

The empirical studies included in this program of research investigate the role of two different moderators. Empirical studies 1a and 1b propose that instrumental motive will act as the boundary condition strengthening the relationship between play and personal resource gain, whereas Studies 2a, 2b and 2c investigate the first- and second-stage moderating role of supervisor levels of playfulness. Both of these moderators also shine light on important interpersonal and instrumental aspects of engaging in play at work, specifically that individuals may engage in play with those who they do not necessarily like, but who they believe can benefit them somehow, for example, their supervisors or a negotiation partner.

2.6.2 Breaking New Ground

2.6.2.1 *New Theoretical Directions for Understanding Play as a Process*

While both the cathartic and flow theories of play have proffered important insights, both theories are limited in their ability to describe the processes through which play influences work outcomes. Both theories focus on explaining the short-term outcomes of play while ignoring its longer-term outcomes. Therefore, a new theoretical direction is proposed, which can be used to examine how play influences workplace outcomes in future empirical research.

2.6.2.1.1 Play and Resource Regulation

The fundamental tenet of COR theory is that ‘people strive to retain, protect and build resources’ (Hobfoll, 1989, p. 516), whereby resources have been defined as ‘those objects, personal characteristics, conditions, or energies that are valued in their own right, or that are

valued because they act as conduits to the achievement or protection of valued resources' (Hobfoll, 2001, p. 339). Specifically, COR theory argues that people seek to add to, and protect, their resources (Halbesleben et al., 2014), and that individuals invest resources to overcome threats. These resources can be personal (e.g. self-esteem), material (e.g. money) or conditions (e.g. status and social support; Hobfoll, 1989).

Based on this theoretical perspective, employees may engage in play in the workplace not only to have fun but also to acquire resources. Drawing on COR theory, it is proposed that play can be used as a resource, which, in turn, can generate and regulate two sets of resources, namely psychological resources and psychosocial resources, which have individual, team and relational outcomes. For example, when playing with colleagues, individuals may gain resources such as liking, attraction and support from others. Supervisors may also engage in play in a downward direction to garner follower support. Likewise, play can lead to social cohesiveness, a psychosocial resource that has implications for team morale and team performance. Thus, psychological and psychosocial resources regenerated and regulated through play can act both as short-term and long-term mechanisms through which performance is improved.

The notion of resource loss is also a central tenet in COR theory. Studying play at work from a resource regulation perspective also opens the possibility that play at work can lead to resource loss, which has not been carefully considered. As discussed, engaging in play at work can also lead to dysfunctional outcomes. One possibility is that engaging in too much play at work can have negative spillover effects at home. Playing after work with colleagues may mean that less time is spent at home. Moreover, play at work can lead to resource loss such that the loss of time and energy from play at work can potentially compromise relationships with family members. Thus, these are some of the social costs that individuals

can incur on engaging in play at work. Hence, future studies based on COR theory should investigate such costs.

2.6.2.1.2 Contributions of This Thesis

To test and address the points raised above, all empirical studies in this research program are framed from a COR theory perspective, which is used to propose the mechanisms linking play and outcomes. It is argued that play is used to generate, maintain and protect psychological and relational resources, which has a positive effect on negotiation performance, in-role performance and CWBs.

2.6.2.2 Instrumental and Interpersonal Aspects of Play at Work

Prior research and theory on play has emphasised, albeit more implicitly, the hedonic and individualistic aspects of engaging in play in the workplace. The two dominant theories on the antecedents of play—the stimulus-seeking and operant conditioning theories—both emphasise that individuals engage in play in the workplace to experience positive emotions (Mainemelis & Ronson, 2006). However, less attention has been given to other motives. For example, people may also engage in play in the workplace to advance their instrumental and interpersonal goals. Indeed, this aspect has been alluded to in the literature, for example, by Linder and colleagues (2001) who has claimed that individuals can engage in play activities in the workplace for a higher purpose: the serious intention to gain a desirable experience or valuable resources beyond having simple fun. Despite this recognition, current theory and empirical research on play in the workplace has paid little attention to the instrumental aspects of play.

The instrumental and interpersonal aspects of play are an important new direction to pursue for two reasons. First, although current understanding of play at work has benefited significantly from the broader literature on play in adulthood, little attention has been given to the role of the work context (Johns, 2006). One important aspect of the workplace that is

relevant to play is that individuals have strong instrumental and strategic interpersonal goals to pursue at work, that is, they develop informal relationships with colleagues not just for social reasons but also for instrumental reasons. While play outside of work may be engaged in primarily for fun, play in the workplace may be engaged in for strategic motives. For example, employees may engage in play with their boss to create positive impressions and gain career sponsorship. Therefore, considering the instrumental aspect of play fills an important gap in the play literature and such a perspective may represent a unique opportunity for the play in the workplace literature to contribute to the understanding of play in general.

Second, the consideration of the instrumental and interpersonal aspects of play may raise new questions about the timing of play, the participants with whom to play and the consequences of play. For example, while it is typically assumed that people are more likely to engage in play with those they like, is it possible that they may selectively choose to engage in play activities with those they do not like but are instrumental to their career success? For example, one's immediate supervisor. However, do the effects of play with one's supervisor depend on the value that the supervisor places on engaging in play at work? In addition, does play that represents an ingratiation tool always increase liking, and what are the short- and long-term consequences of playing for instrumental reasons? Although play may help individuals develop strategic relationships, others may detect or perceive attempts at using play as an influence tactic (i.e. as a ploy to manage impressions). For instance, ingratiation tactics can be perceived as inauthentic and hence can evoke dislike instead of liking as intended. Using the same logic, individuals may perceive play as a tactic used by the initiator to manage impressions. For example, supervisors who use play to induce liking from their employees may be perceived as inauthentic and manipulative—this relates to the discussion above on the dark side of play. In such cases where play is appraised as

inauthentic, can play still have the same positive effects, such as inspiring creativity and inducing social bonding?

In considering the interpersonal aspects of play in an organisational context, negotiation is proposed as a novel outcome of play. Anecdotally, the relationship between play and negotiation is well-established and supported. Consider business deals occurring on the golf course, and ping-pong diplomacy, for example. In both cases, the notion that negotiations often occur in the context of play and that this will have a positive impact on negotiation performance is accepted. However, despite anecdotal and popular-press support, no study has systematically and empirically investigated the impact of play on negotiation.

2.6.2.2.1 Contributions of This Thesis

To examine and test these causal links, empirical Study 1 considers the interpersonal aspects of engaging in play with a negotiation partner and investigates the moderating role of instrumental motive on the relationship between play, relationship quality, positive affect and negotiation performance among stranger dyads. Studies 2a, 2b and 2c explore the interpersonal aspects of engaging in play with a supervisor and argue that subordinates may be acting instrumentally when they seek to engage in play with their supervisor, to gain resources that will positively affect their work outcomes. These studies also examine the interaction between supervisor and subordinate levels of playfulness to determine whether these should be ‘matched’ to strengthen the hypothesised relationships.

2.6.2.3 *Types of Play at Work*

Another new direction in the play literature is to focus on understanding different types of play rather than on the frequency of play. Play likely results in different work outcomes not because of variation in its frequency but because of variation in type. Although various types of play have been recognised in literature (Pellegrini & Smith, 1998), limited

attention has been given to the types of play at work. Thus, types of play could represent a productive new direction in the organisational literature on play.

Based on the updated definition of play of Van Vleet and Feeney (2015b), several types of play that may influence work outcomes are derived. As discussed earlier, play requires a high level of interaction, but the interaction can occur with an activity or with other people. Therefore, depending on the target of the interaction, play can be differentiated into two broad categories. The term *independent play* is used to refer to play carried out solo—here, the individual is interacting with an activity. Examples of independent play include playing a pinball machine game, a computer/video game, a puzzle game and a music instrument in the workplace. Van Vleet and Feeney (2015a) called this type of play solitary play. The term *social play* is used to refer to playful activities in which the target of the interaction is other individuals. Examples include sports activities and playing fantasy football with a colleague or a board game with co-workers.

Further, play can be categorised as being structured or unstructured. *Structured* play is defined as a play activity with clear instructions. It has associated rules of engagement that are accepted by all players. This type of play can be competitive; it is task-oriented and goal-focused and is carried out with a known objective in mind. Examples include golf, casual sports, board games, dice games and card games. *Unstructured* play is defined as a play activity that is spontaneous in nature. It does not have specific rules and objectives or cues for action. It is not competitive, because it does not have a prescribed end-goal or measurable outcome, other than amusement or fun. Examples include joking around, playing pranks and breaking into song. Social and independent play activities can both be classified as structured or unstructured.

Prior conceptualisations of play have tended to focus on activities such as games and puzzles that have little to do with work, whereas the current definition of play has not

stipulated that play activities have to be entirely distinct or separated from work. For example, scientists play in terms of ‘bouncing around’ or ‘ping-ponging’ ideas, which can lead to important scientific discoveries. Musicians regularly play with different instruments and media to produce innovative music. In these cases, the play activity is integral to the individual’s work (Statler et al., 2011). This suggests another way to distinguish play by considering how play relates to work. For example, when scientists at Google play a video game that is not directly related with their work during their lunch break, they are engaging in *incidental play* because play is incidental to their work. In contrast, the same scientists may also play with the video game they are developing as part of their work at Google. In this case, the experience of play has a direct relationship with their work, and therefore, this type of play is called *integral play*. The lack of research on integral play, which has also been called serious play (Statler et al., 2011), seems to be an critical omission in the literature since it is an important activity at work, which is aimed at communicating and brainstorming new concepts, theories, systems and practices, or creative solutions to problems.

Although people tend to think of play activities as those that occur spontaneously, these can also occur with a predetermined structure. Therefore, play in the workplace can be categorised into whether it occurs *spontaneously* or via careful planning and organisation. For example, Wang et al. (2016) in their study of student pilots in flight simulators documented several instances where pilots break into play by joking around with each other. These play sessions occur spontaneously and without any prior planning or organisation. In contrast, *organised play* can occur when team members have a predefined time for play—such as when an organisation sponsors a weekly sports activity between work units or departments (Vermeulen et al., 2016).

Future research can also examine the roles of different tools that can facilitate play at work and compare traditional and technological apparatus for different types of play. Games

are an effective vehicle for play in the workplace. To illustrate, the games described in this paragraph are structured forms of play, which have premises, prescriptions, rules and roles. *Traditional apparatus* for play is typically more ‘hands-on’ and includes tools such as pinball machines, ping-pong tables, slides, tables for table soccer and boards for board games. One specific type of traditional apparatus-aided play used more recently is LEGO Serious Play (LSP), which allows employees to use LEGO bricks to express their ideas and thoughts (Busch et al., 2008). The reported benefits of LSP include team bonding and the acceptance of change (Lloyd Smith & Rudolf, 2016). However, using LEGO bricks as an apparatus for play warrants closer attention (Wolf, 2014) to more firmly establish whether this tool is essential for producing the positive outcomes reported in previous studies. *Technological apparatus* for play includes PlayStation and Nintendo video game consoles and software. Gamification, defined as ‘the use of game design elements in non-game contexts’ (Deterding et al., 2011, p. 1), is another emerging form of technologically aided play at work. Anecdotal evidence has shown that gamification can enhance learning, engagement and motivation (Deterding et al., 2011). However, the perceived effectiveness of gamification is largely anecdotal (Hamari et al. 2014). Therefore, more empirical investigation is required to accurately examine and compare the benefits of traditional apparatus and technology-aided play at work.

2.6.2.3.1 Contributions of This Thesis

Empirical studies 1a and 1b contribute to knowledge of different types of play by being the first to empirically investigate the effects of two new types of play (structured and unstructured social play) on negotiation performance and thus contribute to examining some of the aforementioned research topics. Studies 2a, 2b and 2c provide constructive replication through the investigation of an alternative operationalisation of play, namely, playfulness as a trait.

2.7 Conclusion

The overarching purpose of this integrative literature review was to present and analyse the current state of knowledge of play at work and to elucidate important directions for further scholarship. The specific aims of this chapter were to organise the current state of knowledge on play at work; to offer definitional convergence and conceptual clarity of different types and operationalisations of play; and to investigate and propose an overarching theoretical lens to be applied in future empirical scholarship. First, existing definitions of play were reviewed and their limitations were described. A discussion of a recent conceptualisation of play in adulthood that has defined play based on three core features was also provided. Second, theoretical perspectives on play and the extant empirical research on its antecedents and consequences were reviewed, organised by levels of analysis. Third, a promising agenda for future research on play at work was proposed, which focusses on several important issues that emerged from the literature review. These issues were organised in two sections, refining and extending the current research on play, and generating novel ideas and new research directions on unexplored areas of inquiry.

Based on the proposed directions for theory and future research, the subsequent empirical studies will perform the following: provide additional conceptual clarity through defining and measuring the outcomes of different operationalisations and types of play; apply COR theory as an overarching theoretical lens to argue that personal resources will act as the mechanism linking play and various outcomes; examine the harmful or ‘dark’ effects of play and its impact on novel outcomes; and explore interpersonal and instrumental aspects of play that are unique to an organisational setting by proposing different boundary conditions.

Chapter 3: Empirical Study 1—Consequences of Different Types of Social Play on Negotiation Performance

As evidenced by the literature review in Chapter 2, a substantial body of literature has explored numerous drivers and outcomes of play at work. However, these theoretical and empirical studies are lacking in several areas, which presents directions for further research. First, the theories applied in the field previously are limited in that they have focused primarily on either antecedents or outcomes. For example, the stimulus-seeking and operant conditioning perspectives focus on the drivers of play, whereas the flow, the cathartic and the cognitive and social processing perspectives have focused primarily on its outcomes. This chapter addresses this gap by taking a COR theory perspective, which can be applied to multiple facets of the proposed research model. This chapter also addresses specific gaps in knowledge that emerged through the review processes, including the examination of the ‘dark side’ of play, the moderators and mediators not previously considered, the instrumental and interpersonal aspects of play and the different types of play at work.

This chapter uses a laboratory experimental design to investigate play operationalised as a state or activity and its impact on negotiation as a specific work-related outcome. In particular, it defines and explores the effects of two different types of play (structured and unstructured social play) and applies COR theory as an overarching theoretical lens, allowing the exploration of the role of personal resource gain (positive affect and enhanced relationships quality) as the mechanisms linking play and outcomes. Negotiation is studied as a novel outcome of play, because although anecdotal evidence supports this relationship (e.g., business deals occurring on the golf course), it has not yet been systematically or empirically investigated. This chapter also considers the ‘dark side’ of play by investigating how and when engaging in play with a negotiation partner can worsen negotiation performance, and

related to this issue, considers an important interpersonal aspect of play at work, specifically, the role of instrumental motive and the potential detrimental effects this can have if detected.

3.1 Introduction

This empirical chapter focuses on negotiation as a work outcome. Negotiation was chosen because it is inextricably linked to social play in two key ways. Firstly, explicit negotiation occurs surrounding the plans and properties of play, outside the play activity itself. One of the key defining features of play, as described in Chapter 2, is that it occurs within clear space and time boundaries, and that the rules and roles of play are agreed upon by all players. In order to reach this agreement, and to facilitate understanding of the methods and objectives of a play activity, negotiation occurs (for example, in table tennis, players may agree that a match is played best three of five games, and for each game, the first player to reach 11 points wins that game, however, a game must be won by at least a two point margin). Secondly, negotiation can also occur during a play episode, and there may be explicit negotiations that break the ‘frame’ of play, and that must be resolved for play to continue (for example, in table tennis, debating whether a serve landed in or outside the service box). Indeed, this has been shown to occur from childhood (Doyle & Connolly, 1989). A closer examination of the interaction between play and negotiation (either surrounding or during the play activity) is warranted to further our understanding of the outcomes of social play, particularly in the work context. Moreover, because play is a frequent occurrence, using an experimental study to investigate the functional significance and relation between play and negotiation is important.

Play and negotiation have long been intertwined in the business world. Business deals often occur on the golf course, or through ping-pong diplomacy and *guanxi* developed over restaurant meals. Indeed, the White House has issued statements defending current US President Donald Trump’s frequent golf games, suggesting that he is engaging in official

presidential business and high-level negotiations on the golf course, not merely working on his putting game (Mangan, 2017). Many CEOs have also described the benefits of playing golf, such as that it allows them to acquire important information about their colleagues and clients, create a more relaxed and friendly environment without distractions, forge friendships, relieve stress and network (Dosh, 2016; Kerr, 2015). Qualitative research has also supported the idea that golf can be used as a means of nurturing social relationships and facilitating business deals (e.g. Barnicle & Barnes, 2015; Gray et al., 2020), as shown in the North American (e.g. Janiak, 2003), Asian (e.g. Jansson & Ramström, 2005; Neo, 2001) and European (e.g. Taminiau & Wiersma, 2016) cultural contexts. Altogether, these findings suggest that golf as a form of play is important to negotiation performance. However, what aspects of play make it conducive to negotiating business outcomes? In addition, what do these forms of play have in common?

This chapter argues that it is the social nature of play that brings people together and makes them more open and cooperative when negotiating an outcome that benefits all the parties involved. Social play refers to play activities in which the playful interaction involves other individuals. It was first defined as being either structured or unstructured in a recent review article on play at work (Petelczyc et al., 2018).

Structured social play has a predetermined structure and refers to many known casual sports, board, dice and card games. This type of play has pre-assigned roles, occurs within specified time and space boundaries and has associated rules of engagement that are accepted by all players. This type of play is best described by Huizinga's (1949) definition of play as being

a free activity standing quite consciously outside 'ordinary' life, as being 'not serious', but at the same time absorbing the player intensely and utterly... It proceeds within its

own proper boundaries of time and space according to fixed rules and in an orderly manner [and] it promotes the formation of social groupings. (p. 13)

Take golf as an example of structured social play. It is task-oriented and goal-focused, has predefined rules and occurs within a specified time and place; further, it is carried out with a known and measurable objective in mind. Although tournament-style golf encourages competitiveness between players, golf played socially or in a business context does not emphasise this level of competition and comparison. Rather, golfers play in a light-hearted manner, which facilitates a positive mood and boosts morale and camaraderie among players.

The second type of social play is referred to as unstructured social play. It is more spontaneous in nature and does not have specific rules and objectives or cues for action. This type of play is best described by Dandridge (1986), who defined play as ‘as a freely chosen activity: something we do because we want to ... the outcomes of play are often uncertain and unknown and are not the focus of play’ (p. 161). Examples of this type of play include joking around or breaking into song.

The two types of social play were only recently defined, and therefore, no empirical studies have been conducted on their outcomes. However, previous research (also described in Chapter 2), has considered the impact of play (defined in general terms) at work on intrapersonal- and interpersonal-level outcomes. Studies on intrapersonal outcomes have revealed that psychological resources are gained through engaging in play. Further, as described in Petelczyc and colleagues’ (2018) literature review, play activities reduce fatigue (Hunter et al., 2010), stress (DesCamp & Thomas, 1993; Sørensen & Spoelestra, 2011), boredom (Hunter et al., 2010; Roy, 1959) and burnout (DesCamp & Thomas, 1993). Playing at work has also been related to improved optimism (Yarnal & Qian, 2011) and positive affect (Proyer & Ruch, 2011; Webster & Martocchio, 1992; Yarnal & Qian, 2011).

On the interpersonal level, empirical research has shown that play increases relational resources by providing individuals with the opportunity to bond and interact socially (Hunter et al., 2010; Roy, 1959; Sørensen & Spoelestra, 2011). It also creates opportunities for colleagues to distance themselves from their formal and professional roles, and relate to one another on a more personal level, thus enhancing interpersonal attraction through the development of rapport and trust (Hunter et al., 2010; Roy, 1959). It can also facilitate creative and productive meetings across a range of organisations and occupations (West et al., 2016). In a medical setting, play has been shown to foster a sense of solidarity between employees of varying hierarchies and status (Locke, 1989).

Observational data has also been collected concerning the benefits of combining playful activities with official business dealings, such as those that occur on the golf course. For example, it has been argued that by playing golf in a professional manner, individuals can gain the trust and confidence of influential others. Significant contacts are made and information is shared, which can result in important business deals and future opportunities (Janiak, 2003). Business meetings occurring in locations outside the formal office environment can also help create and build social bonds because they allow a more relaxed, informal style of communication and the display of emotions (Taminiau & Wiersma, 2016). Conversations held during or after a round of golf can enable players to become better acquainted, and behaviour on the golf course can be indicative of one's attitude in a high-pressure environment (Janiak, 2003; Jansson & Ramström, 2005).

Despite the effects of play (defined generally) at work described above, there is a significant amount not yet known. First, research has not directly examined the outcomes of the two different types of social play in a work context. Second, no study has investigated the specific impact of social play on negotiation. Although the findings described thus far suggest that play can have numerous positive intrapersonal and interpersonal consequences, research

has not examined whether play can enhance negotiation performance when individuals have compatible as well as competitive goals. This is surprising, given current knowledge about the ‘wheeling and dealing’ that occurs on the golf course. Moreover, limited formal theory and empirical research is available to draw upon when explaining how and when different types of social play could lead to enhanced negotiation outcomes. Specifically, traditional research has focused on the ‘rational’ aspects of negotiation, and currently, there is a lack of knowledge on the potential psychological and relational mechanisms and processes that link play with negotiation outcomes, and the conditions under which this may occur. Lastly, previous research has displayed a bias towards the positive outcomes of play (as described above) and has failed to consider the potential negative effects of play, particularly in a work context.

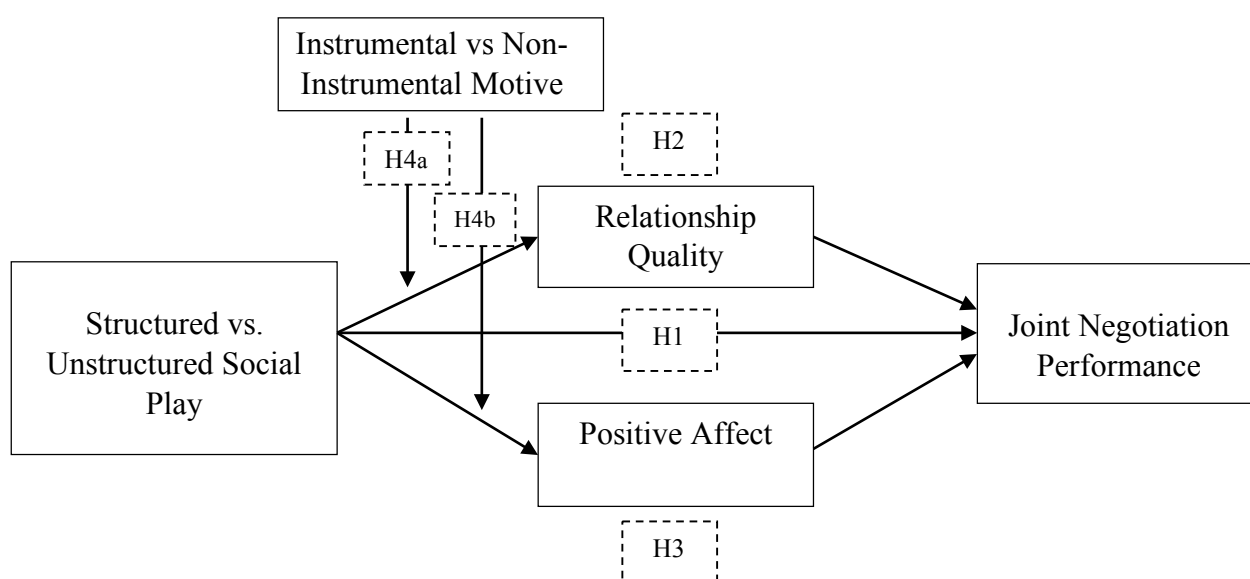
Given the increasing interest in, and prevalence of, play at work, it is important to undertake research in this area to ensure the benefits of play are realised, particularly in the context of negotiation. Although anecdotal and observational evidence have both suggested that play and negotiation are linked (e.g. Janiak, 2003; Taminiau & Wiersma, 2016), empirical research and theorising in this area is lacking. Further, this study develops and tests the notion that the type of social play matters in predicting negotiation performance and more specifically that structured and unstructured forms of social play have varying effects on negotiation. It also considers the potential ‘dark side’ of engaging in instrumentally motivated play.

This study draws upon COR theory to propose and test that the benefits of social play lie in its ability to generate, regulate and maintain personal resources. COR theory argues that people aim to build, maintain and protect personal resources (Hobfoll, 1989), and it is applied as the overarching theoretical framework in this study to investigate the mechanisms and conditions through which play leads to different outcomes. In particular, it is argued that social play can be used to generate psychological (to increase positive affect) and relational

(to improve the quality of the interpersonal relationship between negotiators) resources. The proposed research model, depicted in Figure 2, argues that relationship quality and positive affect will act as two parallel mechanisms linking social play to negotiation performance. It is predicted that this relationship will be stronger for structured social play, compared with unstructured social play, owing to the predetermined rules, shared knowledge and measurable outcomes of structured social play that make it particularly beneficial in the negotiation context. The model also posits motive for social play as a boundary condition that affects the strength of the relationship between social play and negotiation outcomes (via a gain in resources).

Figure 2

Proposed Research Model



This research makes several important contributions. First, it is innovative in its introduction and examination of the two different types of social play. It is the first to investigate structured and unstructured social play in an empirical setting, and in doing so, it argues that the *type* of social play matters. For example, whereas golf is a commonly cited form of social play used to influence negotiation outcomes, spontaneously getting together and telling jokes may not have the same positive impact. It is particularly important to

differentiate the effects of these two types of play because this differentiation helps to resolve some inconsistent perspectives about whether play in a work context is beneficial or detrimental. Related to this point, previous research has focused primarily on the positive outcomes of play, and has given far less consideration to its potential negative consequences, particularly in a work context. This study proposes that there is also a 'dark' side to play at work if negotiators engage in play with an instrumental or strategic motive. It addresses this gap by investigating whether play that is perceived as being instrumentally motivated, as opposed to genuine and natural, has a negative effect on personal resources and subsequent negotiation performance. In considering potential instrumental and interpersonal aspects of play, motive for play is framed as the contingency factor that explains the conditions under which social play will lead to resource gain and improved negotiation. This research examines whether this motive can determine whether play enhances or harm people's negotiation success. Thus, this study provides greater understanding of the effects of social play in a negotiation context, particularly with regards to how and when play influences negotiation effectiveness.

Second, this research is the first to formally integrate the play and negotiation literatures, and in doing so, it examines previously unexamined outcomes and processes of social play in a work context. Therefore, this study is able to make suggestions regarding relationships and connections that have not previously been specified. Despite considerable anecdotal support, for example, particularly for the benefits of golf, scientific or systematic investigation into the impact of play on negotiation has not been conducted. Providing this integration gives a new perspective to the potential outcomes and drivers of play, as well as the context in which negotiation is likely to be most successful. Negotiation is a particularly important work-related outcome worthy of investigation. Workplaces are full of conflict, both internally (e.g. between team members and colleagues) and externally (e.g. between

competing multinational firms). The effective resolution of conflict can make a significant difference to many important individual and organisational outcomes. For example, how individuals manage conflict in the workplace can influence how successful, respected and connected—and even how satisfied—they are. The effective resolution of conflict is also crucial to organisational success, whether on the financial, performance or reputational level. Therefore, examining the effects of play on negotiation can lead to an appreciation of the range of outcomes that play can influence, and the reason play is so important in the workplace. This research also considers important interpersonal aspects of play at work, in identifying parallels between the social play and negotiation literatures. For example, given that negotiation is also an interpersonal interaction, it is proposed that the benefits gained from playing with another negotiator prior to the negotiation, should ‘spill over’ into the negotiation task, thus improving outcomes for both parties.

Third, COR theory (Hobfoll, 1989) has not yet been applied in the fields of play and negotiation. Framing this research from an overarching COR theory perspective allows theorising and making predictions concerning the mechanisms linking play to negotiation, and the conditions under which this may occur. In applying this theory, it is argued that play can not only be used as a resource but also as a tool to produce and manage (both relational and psychological) personal resources and to protect from resource loss. These resources can then be reinvested in a negotiation context to improve outcomes and garner further resources for both parties. This is an important topic of enquiry because the study of mediators is essential to theory development since they allow us to theorise about the question of *why*. Therefore, this thesis goes beyond empirically examining the outcomes of play on negotiation and also contributes to developing a theory of how and why play shapes negotiation outcomes.

Lastly, theory addressing the drivers and outcomes of negotiation has traditionally posited negotiation as purely calculative, rational and result driven. However, this study

argues that the interpersonal and intrapersonal factors of negotiation must also be considered. Specifically, two parallel mediators, one of a relational nature and the other of a psychological nature, are tested, which can explicate the links between social play and negotiation. The dual-concern theory of negotiation is drawn upon and adds to COR by considering the complementary relational aspects of play and negotiation. In particular, it is argued that by engaging in play together, negotiators will increase their relational resources (i.e. develop higher levels of concern for their negotiation partner), resulting in a more cooperative attitude and improved negotiation performance (Pruitt, 1983). The affect infusion model (Forgas, 1995) extends COR theory by taking into account the psychological aspects of play and negotiation, arguing that increased psychological resources (i.e. positive affect) will result in enhanced negotiation performance because both parties will approach the task optimistically and cooperatively (Carnevale, 2008).

In the sections that follow, a model of outcomes of both types of social play is explicated, and hypotheses that consider the mediating effects of relationship quality and positive affect, and the moderating effect of motive for play on negotiation outcomes, are raised.

3.2 Theoretical Framework and Hypothesis Development

3.2.1 Conservation of Resources as a Theoretical Framework

As described in Chapter 2, COR theory argues that individuals aim to maintain their current resources and to build new resources, with resources referring to the objects, states and conditions that one values (Hobfoll, 1989, 2001). Specifically, COR theory argues that people strive to build personal (which includes psychological and relational) or material resources (Hobfoll, 1989), which can be invested to overcome threats (Halbesleben et al., 2014). The two main principles of COR theory concern resource gain and the prevention of resource loss (Hobfoll 1988, 1989).

The gain or loss of resources significantly impacts the actions of individuals, and Hobfoll (1988, 1989, 2001) has argued that people are motivated to alter their behaviour when they possess a low amount of resources that are important to them. In addition, individuals with more resources are in position to gain resources, whereas those with less resources are more likely to lose these. This can result in either a downward or upward spiral, as initial resource loss leads to subsequent resource loss, whereas initial resource gain leads to future resource gain (Hobfoll, 2001). Moreover, a minimum amount of resources motivates individuals to conserve the remaining resources they have. In this study, it is argued that employees will use play as a resource, which they can invest to generate additional personal resources that they can use to improve negotiation performance. They can also use play to prevent resource loss, in that it offers psychological protection from stress and fatigue, and to strengthen social bonds, which can protect them from a negotiation partner ‘turning on’ or betraying them.

Based on the key tenets of COR theory, employees may choose to engage in play at work, not purely for amusement and enjoyment, but to acquire further resources. Here, it is proposed that play can be used as a resource in and of itself, invested to build additional personal resources—psychological and relational—which impact negotiation outcomes. For example, play with colleagues can be used to provide stress relief (a gain of psychological resources), or to foster social relationships and garner liking and support from others (a gain of relational resources). In addition, play at work can either protect from, or contribute to, resource loss. For example, engaging in play may lead to dysfunctional outcomes, such as feelings of discomfort and cynicism (a loss of psychological resources) and of dislike and distrust from colleagues (loss of relational resources).

3.2.2 Negotiation and Social Play

Negotiation, defined as ‘the process whereby people attempt to settle what each shall give and take or perform and receive in a transaction between them’ (L. Thompson, 1990, p. 516), is common method of conflict resolution (Brett & Thompson, 2016). Given its significance and prevalence, it is no surprise that negotiation has been studied empirically for more than 50 years (e.g. Smith, 1969) and has been prominent within numerous research domains (Bazerman et al., 2000). Despite the importance of negotiation in managing conflict effectively, and the frequency with which it occurs in the workplace, in general, people are poor at negotiating and are often unable to achieve optimal outcomes (Neale & Bazerman, 1985; L. Thompson, 1990; L. Thompson & Hastie, 1990).

Often, the reason people do not reach mutually beneficial agreements is because they focus on the distributive or ‘tug of war’ aspect of negotiation, in which they believe they are distributing a fixed sum of resources (Neale & Bazerman, 1985). By taking this perspective, negotiators fail to identify and reach integrative potential. Integrative potential refers to the types of negotiations in which parties are not limited by a fixed amount of resources and can create value by expanding the amount of resources to be divided (L. Thompson, 1990; L. Thompson & Hastie, 1990). That is, there is the potential for a ‘win–win’ situation, whereby the interests of both parties can be achieved (L. Thompson & Hastie, 1990). Reaching an integrative solution requires information sharing and making compromises to achieve high joint gains (Brett & Thompson, 2016). This approach is effective because the negotiation parties have compatible interests, and the optimal outcome for one party is also the best outcome for the other (L. Thompson & Hrebec 1996). Although integrative potential exists in most negotiations, negotiating parties often fail to identify this potential for mutual benefit, and instead, settle for solutions that may be less advantageous for both parties (L. Thompson, 1990).

Failure to reach integrative potential can be due to a focus on the competitive nature of the negotiation, a lack of trust in the other party or failure to share important and unique information, resulting in misperceptions of the other party's interests (L. Thompson & Hastie, 1990). Negotiators focus on the competitive nature of the negotiation, as opposed to the cooperative nature, and often assume that the interests of others will be incompatible with their own (Neale & Bazerman, 1983). This is labelled the fixed-pie perception, whereby for one party to 'win', the other must 'lose', leading to less optimal outcomes for both (L. Thompson, 1990; L. Thompson & Hastie, 1990). Negotiators with this perception view the other party as a competitor for their 'share' of the pie, rather than as a cooperative partner. In this situation, negotiators are unlikely to trust or to seek or share information, believing that their negotiating partners' interests and priorities are directly opposed to their own, or perhaps because they believe sharing this type of information could make them vulnerable and susceptible to being taken advantage of (Kimmel et al., 1980).

This research proposes the use of social play as a tool or technique to facilitate the realisation of integrative potential in negotiations. In particular, it is argued that the benefits of social play lie in its potential to change the negotiation context from purely competitive (i.e. taking a fixed-pie or distributive approach) to cooperative and collaborative (i.e. taking an integrative or 'how can we help each other' approach).

Although social play in general can be expected to enhance negotiation performance, structured play is thought to be particularly beneficial. Structured social play involves a task with specified rules of engagement. Both players are clear on how the play activity will proceed and receive instructions that describe a measurable and objective outcome. The activity focusses on task accomplishment and involves a measure of success that can be used to evaluate the performance of players. Because of the characteristics of structured social play, it is believed that players who were initially strangers will begin to communicate more

openly and will develop a shared sense of purpose. Further, the achievement of measurable and predefined outcomes of structured social play will result in feelings of accomplishment, competence, and self-confidence among players (Bean & Eaton, 2001). Therefore, the sense of efficacy and purpose, developed because of engaging in a structured social play activity, will have a positive impact in the negotiation context. The lines of communication will have been opened, and trust will have been built. Therefore, players will be more willing to cooperate and share important and unique information and hence will be more likely to reach an integrative agreement.

In contrast, unstructured social play is more spontaneous and has less clarity surrounding its rules and objectives. As a result of this role and task ambiguity, players will be less likely to develop a sense of purpose and efficacy, since they are not striving to accomplish anything, other than simply having fun and enjoying the activity. In the absence of structure, there are no prompts or cues to develop communication and trust or to cooperate with the other party. Therefore, players who fail to work together may remain strangers. This leads to the first hypothesis:

Hypothesis 1. Structured social play will have a stronger positive effect on joint negotiation performance compared with unstructured social play.

3.2.3 How Play Affects Negotiation Performance: Two Proposed Mechanisms

Social play is used as a resource, which is invested to generate additional personal resources and to protect from potential resource loss. Although social play in general can be expected to enhance negotiation performance, it is its structure that affords and fosters joint relational and psychological resource gain, rather than unstructured social play. It is proposed that structured social play is more likely to lead to a gain in personal resources because the ‘rules of the game’ are known by all involved parties. Therefore, it is assumed that the cognitive load on players is less (i.e. they are not dedicating resources to figuring out what to

do), and thus, they will have more resources available to foster their social and emotional needs. Thus, in accordance with COR theory, engaging in structured play with agreed roles, rules and expectations frees and builds resources that can then be invested and used to generate additional resources.

3.2.3.1 Mediating Role of Relationship Quality

As discussed thus far, social play can result in an increase in relational resources, for example, increased bonding, social interaction, liking and trust (Hunter et al., 2010; Sørensen & Spoelestra, 2011). It can also protect from future relational resource loss if strong social bonds are created. However, how does an increase in relational resources translate into improved negotiation performance? To explicate the link between structured social play, relational resources and negotiation outcomes, the dual-concern model (Pruitt & Rubin, 1986) of negotiation is drawn upon. This model builds on COR theory by considering the interpersonal nature of both play and negotiation, as well as the influence of aspirations and goals on bargaining behaviour. This model, based originally on the research of Blake and Mouton (1964), has several variations, and all argue that individuals choose negotiation strategies based on levels of concern for self and for the other party (R. L. Sorenson et al., 1999). According to this model, an integrative agreement is most likely to occur when negotiators have a high level of concern for both themselves and the other party (L. Thompson, 1990).

Pruitt (1983) and Pruitt and Rubin (1986) proposed that negotiating parties will use one of four negotiation strategies: problem-solving (high concern for both self and other, resulting in finding an outcome that is acceptable to both parties); contending (high concern for self, resulting in one party dominating the other); yielding (high concern for other, resulting in one party conceding to the other); and inaction (low concern for both self and other, resulting in little action; Pruitt, 1983). High levels of concern for both own and the

other party's outcomes (noting that these are not mutually exclusive) is indicative of a cooperative attitude and facilitates the problem-solving technique, which is the most effective negotiation technique and has integrative potential (Pruitt, 1983).

When the negotiating parties trust each other and are willing to cooperate, joint problem-solving can occur. In this case, both parties share unique information, rather than repeating common knowledge, specifically regarding compromises they are willing to make and the disclosure of their negotiation goals (Kong et al., 2014). A negotiator is also more likely to trust the intentions of the other party on perceiving that the other party is also concerned about establishing a fair distribution that maximises outcomes for both, and thus perceives the negotiation process as being collaborative and fair (De Dreu, 2004). This trust allows them to work together to evaluate alternative solutions to reach a mutually acceptable and beneficial resolution, and thus reach an integrative agreement.

Research has shown that negotiators are less likely to share information and reach integrative agreements in the absence of trust and rapport between them (Drolet & Morris, 2000; F. A. Morris, 2002). Further, a negotiator is unlikely to trust and cooperate with the other party on perceiving that the other is trying to maximise own outcomes, has little (or negative) regard for others' outcomes and is primarily focussed on personal success (De Dreu, 2004).

The value of structured social play in the context of negotiation lies in its ability to enhance relational resources by transforming the quality of an interpersonal relationship between negotiators from one that is characteristic of strangers to one that is characteristic of friends. This may explain why so many CEOs choose to conduct business deals on the golf course, where playing together facilitates bonding and social interaction in a relaxed setting. Indeed, researchers have suggested a curvilinear relationship between the quality of a relationship and joint negotiation performance, which shows that strangers (i.e. poor quality)

and lovers (i.e. high quality) perform worse than friends and colleagues (i.e. moderate quality; Valley et al., 1998). This argument has been supported by research demonstrating that friends are better able to reach integrative agreements (Valley et al., 1995). Using play to garner relational resources and increase concern for the other party results in negotiators sharing unique information, and thereby, they create additional value to be shared (i.e. ‘expanding the pie’) and identify compatibilities and potential ways to cooperate. This increased concern will result in the utilisation of the problem-solving technique and the realisation of integrative potential. In particular, structured social play can be used to develop the interpersonal relationship between negotiators and has the potential to change the meaning of the negotiation context from competitive to cooperative because both parties must work together to achieve their goal.

According to COR theory, structured social play can be used to foster relational resources, such as increased trust and concern for the other person. Consequently, according to the dual-concern model, when negotiators’ concern for the other is high and they perceive the context of the negotiation as cooperative rather than competitive, both parties will feel comfortable sharing unique information; hence, their negotiation performance will be enhanced. This explains how a relational resource can translate into improved negotiation performance, giving rise to the following hypothesis:

Hypothesis 2. Compared to unstructured social play, structured social play will have a stronger indirect positive effect on negotiation performance via relationship quality, such that this type of play increases the quality of the relationship between negotiators, which, in turn, enhances negotiation performance.

3.2.3.2 Mediating Role of Positive Affect

As described in section 3.1, social play can protect from psychological resource loss by reducing fatigue, stress and burnout (DesCamp & Thomas, 1993; Hunter et al., 2010;

Sørensen & Spoelestra, 2011). It can also increase psychological resources, for example, by enhancing optimism and positive affect (Yarnal & Qian, 2011). However, how does an increase in psychological resources (and protection from psychological resource loss) translate into improved negotiation performance? A large proportion of negotiation studies have occurred in the economic field, which considers logic and rationality over mood and emotion (Brett & Thompson, 2016). However, research on emotion and negotiation has also shown that creating a positive atmosphere can help build rapport between negotiators, which can lead to more successful negotiation outcomes (Carnevale & Isen, 1986).

When analysing the influence of emotions in a negotiation context, intrapersonal and interpersonal effects are differentiated (M. W. Morris & Keltner, 2000). Intrapersonal effects, measured at the individual level, consider the impact of an individual's emotions on their own thoughts and behaviour. Interpersonal effects, measured at the dyadic or group levels, involves the influence of one person's emotions on the emotions, thoughts, and behaviours of others within the negotiation context (Van Kleef & Côté, 2018). Given that this study examines the effects of social play on both members of a negotiation dyad, it considers the interpersonal impact of positive affect (measured at the dyadic level) and its effect on negotiation performance.

Defined as a 'good mood or pleasant feeling state' (Carnevale, 2008, p. 51), positive affect can have a positive impact on negotiation outcomes (Carnevale, 2008). Supporting the benefits and power of a COR theory resource gain 'spiral' (Hobfoll, 2001), positive affect also enhances information processing and creative thinking ability (Isen et al., 1987), which results in improved negotiation outcomes (Carnevale & Isen, 1986; Forgas, 1998). Thereby demonstrating that psychological resources can be invested to gain further work-related resources. Moreover, positive affect fosters cooperation and concession making (Kopelman et al., 2006). This occurs because people who experience a positive mood take a more optimistic

view of the world, set more ambitious targets and have greater expectations of success (Carnevale, 2008; Foras, 1998). Being happy and gaining psychological resources also results in negotiators developing increased confidence in their judgements and taking more creative approaches to solving problems (Carnevale & Isen, 1986; Kopelman et al., 2006).

The argument that positive emotions can benefit negotiation performance is supported by the affect infusion model (Forgas, 1995). This model proposes that emotions influence thoughts and behaviours, and that negotiators adopt bargaining strategies that are congruent with their current mood. For example, negotiators in a good mood are more likely to approach a negotiation cooperatively (Forgas, 1998). Principles of emotional contagion add to this by explaining how one's emotions can influence the thoughts and behaviours of others, or in this context, one's negotiation partner. That is, affect can also influence the strategies used and outcomes of negotiation through emotional contagion, which refers to the spread of emotion from one party to another (Barry et al., 2004).

The value of structured social play in the context of negotiation lies in its ability to increase positive affect, a psychological resource, among negotiation partners. In keeping with the definition of play described previously, engaging in play should result in amusement and fun, and if either party experiences an increase in positive affect, this should spread to the other party, such that by the end of the social play activity, both parties will be in a good mood. According to the affect infusion model, once both parties are happy, they will be more likely to cooperate, which again explains why business deals occur in relaxed settings and during playful activities. Using play to generate psychological resources and create a positive atmosphere will result in the utilisation of problem-solving techniques and in identifying negotiation compatibilities. Therefore, it is predicted that negotiators who engage with a happy counterpart will themselves become happier and behave more cooperatively, and thus they will be more likely to reach an integrative agreement. This is how a psychological

resource is translated into negotiation performance. Structured social play will result in increased positive affect once players feel a sense of accomplishment and enjoyment from working together towards a shared and clearly defined goal.

Hypothesis 3. Compared to unstructured social play, structured social play will have a stronger indirect positive effect on negotiation performance via positive affect, such that this type of play increases the positive affect of negotiators, which, in turn, enhances negotiation performance.

3.2.4 When Play Affects Negotiation Performance

3.2.4.1 Moderating Role of Instrumental Motive

Extending the arguments above, this study also investigates *when* play will lead to a gain in personal resources. That is, under what circumstances might social play generate the relational and psychological resources described above? This question is answered by incorporating into the mediation model the moderating role of instrumental motive.

Employees have long been using play instinctively in the workplace. This fact was noted during the classic observations of the Hawthorne Works (Roethlisberger & Dickson, 1939) and later in Roy's (1959) study of machine operators who used play to improve morale and to manage the long hours and monotonous tasks of their job. Roy (1959) observed employees making tedious tasks more exciting by creating games around self-imposed goals and interactions with others (i.e. the game of stealing a co-worker's banana, which led to the seminal study's name 'Banana Time'). Employees initiate this type of play to alleviate the monotony of routine work. Here, play emerges organically between people in organisations and the chief motivation for playful social engagement is play itself, as opposed to gaining some instrumental outcomes, which is more typically associated with professional relationships.

Play at work that is instrumentally motivated is engaged in, not just for enjoyment and fun, but to gain resources and advance instrumental goals. This has been previously suggested by Linder et al. (2001), who claimed that individuals engage in play at work ‘for a higher purpose: the serious intention to gain a desirable experience or valuable resources beyond simply having fun’ (cited in Petelczyc et al., 2018, p. 184). Despite this view, current research not paid attention to the ‘dark side’ or instrumental aspect of play.

In the pursuit of other-directed instrumental goals (e.g. career sponsorship), employees may attempt to build relational resources in the form of social relationships with colleagues or supervisors, whom they do not particularly like but who they perceive as being important to their career success. However, whilst play may assist employees in developing strategic relationships, their use of play as an ingratiation or influence tactic (i.e. as a method to manage impressions) may be perceived as inauthentic by others, and may lead to unintended hostility, anger and unhappiness, resulting in a potential loss of both psychological and relational resources. It should be noted that it is an individual’s *appraisal* of the motive of play that is important. Whether the initiator intends the play activity to be instrumental or not, if the target of the play activity *believes* that the play is strategic, this will have the proposed detrimental effect on relationship quality (and subsequent negotiation performance).

It is argued that engaging in social play will lead to a gain in both psychological and relational resources. However, this gain will occur only when play is perceived as genuine, and in the absence of instrumental motive. If play is appraised as instrumental, this can lead to negative emotional reactions, including discomfort and cynicism, and a loss of relational resources through disliking and distrust. That is, only genuine play will really make people care about each other (i.e. enhance relationship quality) and feel happy (i.e. increase positive affect) and thus, according to theory, positively affect negotiation. If play is instrumentally motivated, it is really a self-interested strategy being masqueraded as social and will not

improve negotiation. In fact, play that is perceived as being instrumentally motivated can be counterproductive and cause resource loss. In other words, it can have a negative effect on the interpersonal relationship and emotion of negotiators.

A first-stage moderated-mediation model is proposed, whereby instrumental motive moderates the relationship between structured social play and personal resources, such that the conditional indirect effect of structured social play in predicting enhanced negotiation performance via increased personal resources is stronger when instrumental motive is low, as opposed to when it is high. Therefore, the following hypotheses are proposed:

Hypothesis 4a. Instrumental motive (compared to non-instrumental motive), will more strongly moderate the mediating effect of relationship quality between structured social play (compared to unstructured social play) and negotiation performance, such that the indirect positive effect of structured social play on negotiation performance via relationship quality becomes stronger when play is genuine and not instrumentally motivated.

Hypothesis 4b. Instrumental motive (compared to non-instrumental motive), will more strongly moderate the mediating effect of positive affect between structured social play (compared to unstructured social play) and negotiation performance, such that the indirect positive effect of structured social play on negotiation performance via positive affect becomes stronger when play is genuine and not instrumentally motivated.

3.3 Study 1a (Pilot)

3.3.1 Method

A pilot study was conducted to ensure that all activities and measures were clear, easy to complete and represented relevant constructs. Information was gathered to inform the pre- and post-questionnaires and to determine the experimental activities and manipulations. The

aim was to understand how a sample representative of participants perceive the phenomenon (i.e. play), and to learn their language and ways of describing negotiations. This information was used to customise the experimental procedure to ensure it was sensible and applicable for this context and sample. This study tested the direct effect of social play condition on negotiation performance and evaluated the impact of instrumental motive as a boundary condition.

3.3.1.1 Sample and Procedure

A 2 (structured v. unstructured play) $\times$ 2 (instrumental motive v. no instrumental motive) experimental design method was used to pilot test the proposed theoretical model. Participants were undergraduate ($n = 52$) and postgraduate ($n = 22$) students from an Australian University ($N = 74$), who participated as part of an in-class activity. The mean age of the sample was 23 years, and just over half ($n = 43$) were female.

Participants first completed individual pre-activity questionnaires (collecting demographic data). Then, they were randomly paired and instructed to engage in a play activity before performing a negotiation task. It was important that the play activity chosen for this experiment met the definition of play described above (i.e. was considered fun by participants and was interactive and ‘in the moment’), was collaborative between participants (as opposed to being competitive) and social in nature. When choosing a play activity, it was also essential to consider practical and logistical constraints to ensure it was feasible in an experimental setting (i.e. the activity had to occur in a classroom setting with multiple pairs engaging in the activity concurrently and it had to be familiar to most people; further, budget and portability requirements restricted the choice of apparatus). With these considerations in mind, it was decided that LEGO building bricks would be used to facilitate the structured as well as unstructured play activities. LEGO was used in both conditions to ensure it was not the physical building of the LEGO structures that could explain the findings of this research.

The experimental conditions differed in terms of the instructions given to participants. Participants were either given detailed instructions on how to play when engaging in their LEGO activity (structured play condition) or were given no instructions regarding the activity (unstructured play condition). Then, the LEGO building activity was framed either as being beneficial to the subsequent negotiation task (instrumental motive condition) or as being unrelated to the negotiation task (neutral condition). Both members of the pair received the same play and motive condition experimental manipulation instructions.

3.3.1.1.1 Social Play Conditions Manipulation Check

To ensure that the play activities met the specific definitions of structured and unstructured social play, Amazon's Mechanical Turk (MTurk) was used to survey a sample of individuals to test the manipulation. Using this method to recruit participants offers several benefits, including easy access to a large, stable and diverse participant pool (Berinsky et al., 2012; Christenson & Glick, 2013; Mason & Suri, 2012). Participants were presented with definitions of the two types of social play activities, were provided examples of each type and were instructed to rate the two LEGO activities on a bipolar scale from -3 = unstructured play to $+3$ = structured play (0 = neutral). The definition provided of structured social play was as follows: *A play activity with clear instructions. It has associated rules of engagement that are accepted by all players. This type of play can be competitive, is task-oriented and goal-focused and is carried out with a known objective in mind.* Examples given included golf, casual sports, board games, dice games and card games. The definition given of unstructured social play was as follows: *A play activity that is spontaneous in nature. It does not have specified rules or objectives or cues for action. It is not competitive as there is no prescribed end-goal or measurable outcome, other than amusement or fun.* Examples provided included joking around, playing pranks and breaking into song. The two LEGO activities were rated on a bipolar scale from unstructured to structured play. The activity 'use LEGO to build the

tallest tower in the room' was the proposed structured social play activity, whereas 'engage in LEGO free-play' was the proposed unstructured social play activity. A negative score (i.e. less than 0) indicated that participants rated the activity as being unstructured, and a positive score (i.e. above 0) indicated that they rated the activity as being structured.

Eighty-six participants were recruited using MTurk, and all received a monetary reward for their time. The sample consisted of 60% males and 40% females, and their mean age was 40 years. Further, 65% of the sample were from the United States, and 35% reported that they lived in India. The majority of the sample (60%) had completed a Bachelor's degree, and the entire sample reported that they had at least a high school certificate (or equivalent); 70% of the sample reported that they were engaged in full-time work. A One-Sample *T*-Test was used to determine whether participants rated the LEGO tower-building activity as being more structured and the LEGO 'free-play' activity as being more unstructured and whether the ratings of the two activities differed significantly. The results supported the proposed delineation of the two types of play. The LEGO tower activity received a positive mean rating above the mid-point of the scale, $M_{\text{Structured Play}} = 1.96$, that is, it was rated as meeting the proposed definition of structured play. The LEGO free-play activity received a negative mean rating below the mid-point of the scale, $M_{\text{Unstructured Play}} = -2.21$, that is, it was rated as meeting the proposed definition of unstructured play. The difference between the two activities was statistically significant; the mean rating of the unstructured social play condition was significantly lower than the mean of the structured social play condition, $t(85) = -4.06$, $p = .00$.

Based on the results of the social play conditions manipulation check, in the structured social play condition, participants were told that the goal of the activity was to build the tallest LEGO tower in the class. Therefore, this task had 'rules' and a specific performance goal. Participants in the unstructured play condition were told that the goal of the LEGO activity

was to simply have fun and, hence, they could build whatever they liked. To manipulate instrumental motive, participants in the instrumental condition were told that engaging in the LEGO task can enhance their negotiation performance. In contrast, participants in the non-instrumental motive condition were told that the two tasks were unrelated.

Next, participants completed an adapted version of a two-person negotiation task (Allred et al., 1997). When this task was trialled initially, participants were asked to negotiate several aspects of a new employment contract (e.g. start date, salary and leave allowance). One participant acted as the employer and the other as the future employee. However, following feedback from participants, the activity was altered to make it more abstract, thus reducing not only ‘role-playing’ and the subsequent hierarchical differences within the pairs but also the perceived differentiated importance of each issue. In the task, participants negotiated on the number and colour of balls to comprise a theoretical ball pit. A different number (i.e. 2, 4, 6, 8 and 10) of balls of each colour (blue, green, red, yellow and purple) was available. The number of points each party would receive if that alternative (of number and colour of ball) was agreed upon, specified the preferences each negotiator had for the different alternatives. An integrative negotiation could be reached if negotiators were willing to make trade-offs between alternatives. Performance on the task was rated using a points-scoring system. Following the completion of the negotiation task, participants completed a manipulation check questionnaire.

3.3.1.2 Measures

3.3.1.2.1 Demographics

Data were collected on a range of demographic variables, including gender, age, degree type (Bachelor’s, Master’s or PhD), student type (domestic or international) and study load (full-time or part-time). Gender was coded as 1 = male, 2 = female, 3 = prefer not to say. Participants were asked to provide their age (in years) as of their last birthday. Degree types

were coded as 1 = Bachelor's degree, 2 = Master's and 3 = PhD. Student type was coded as 1 = domestic and 2 = international, and enrolment was coded as 1 = full-time, 2 = part-time.

3.3.1.2.2 Personality

Included as control variables, participants' personality was measured using the Big Five Inventory (John et al., 1991). The 44-item scale assesses the five personality dimensions of agreeableness (A), conscientiousness (C), openness to experience (O), extraversion (E) and neuroticism (N). This scale has been shown to be both reliable and valid. For example, research has shown that the alpha reliabilities of the subscales comprising this measure average above 0.80, three-month test-retest reliabilities have a mean of .85, and convergent associations have been demonstrated between this measure and with other Big Five instruments and peer ratings (John & Srivastava, 1999). Participants rated themselves on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*) on items such as 'is talkative' (E), 'tends to find fault with others' (A, reverse coded), 'does a thorough job' (C), 'is depressed, blue' (N) and 'is original, comes up with new ideas' (O). In this sample, the following psychometric properties were observed for the Big Five personality traits: extraversion ($M = 4.18$, $SD = .96$, $\alpha = .82$), agreeableness ($M = 5.11$, $SD = .53$, $\alpha = .68$), conscientiousness ($M = 4.56$, $SD = .82$, $\alpha = .76$), neuroticism ($M = 3.82$, $SD = .1.00$, $\alpha = .87$) and openness to experience ($M = 4.85$, $SD = .570$, $\alpha = .56$).

3.3.1.2.3 Playfulness

Measured using Barnett's (2007) 15-item self-report Adult Playfulness Scale (APS), playfulness was also included as a control variable. This reliable and well-established scale has been used previously in the literature on play in adulthood (e.g. Barnett, 2012; Magnuson & Barnett, 2013; Proyer & Rodden, 2013; Qian & Yarnal, 2011, as cited in Proyer, 2017). Previous studies have shown that this scale displays good convergence with other measures (e.g. the APS of Glynn & Webster, 1992; the Short Measure for Adult Playfulness [SMAP] of

Proyer, 2012; the Other-directed, Lighthearted, Intellectual, and Whimsical [OLIW] of Proyer, 2017), and that reliability was $\alpha = .89$. Participants rated themselves on a scale from 1 (*very little*) to 7 (*a lot*), on their levels of characteristics such as ‘clowns around’, ‘jokes/teases’, ‘outgoing’ and ‘spontaneous’. Scores across the items were added and the mean calculated to give each participant a playfulness score. In this sample, the overall reliability of the scale was $\alpha = 0.83$ ($M = 4.86$; $SD = 0.71$).

3.3.1.2.4 Manipulation Checks

To determine whether the participants considered the social interaction playful, they were asked, ‘Was the activity you engaged in with your partner before completing the negotiation task carried out with the goal of amusement and fun?’ (1 = *not at all* to 7 = *very much so*); ‘Did the activity involve an enthusiastic and in-the-moment attitude or approach?’ (1 = *not at all* to 7 = *very much so*) and ‘Did the activity require high interaction either between you and your partner, or with the activity itself?’ (1 = *not at all* to 7 = *very much so*). The purpose of these questions was to determine whether the social interaction met the proposed definition of play according to participants. Cronbach’s alpha for the three-item manipulation check measure was 0.86.

To check the instrumental motive manipulation, participants were asked ‘To what extent do you believe the other person chose to engage in this activity with you purely for fun and enjoyment?’ (absence of instrumental motive; 1 = *not at all* to 7 = *very much so*) and ‘To what extent do you believe the other person chose to engage in this activity with you because it would result in you being nicer to them in the negotiation task?’ (instrumental motive; 1 = *not at all* to 7 = *very much so*). The bivariate correlation between the two items was 0.83.

3.3.1.2.5 Negotiation Performance

If they reached a successful agreement, participants reported their chosen alternatives (and associated point values), including their individual and joint scores (i.e. the sum of the

total points achieved by the two negotiators). A higher joint score indicated better integrative performance, since it demonstrated that both parties were able to agree on the issues of most importance to them (as evidenced by the higher value of points attached to such issues). This approach was based on an activity originally developed by L. L. Thompson (1991) and used later by researchers such as Allred et al. (1997).

3.3.1.3 Control Variables

The following variables were controlled for because previous research has shown them to be important correlates with playing and having fun: age (Csikszentmihalyi, 1975; Gin Choi et al., 2013; Glynn & Webster, 1993; Guitard et al., 2005; Lamm & Meeks, 2009); gender (Barnett, 2012); playfulness (Barnett, 2007; Glynn & Webster, 1992); and certain personality factors, specifically extraversion and agreeableness (Aldag & Sherony, 2001; Barnett, 2012; Karl et al., 2007; Lamm & Meeks, 2009).

Previous studies have also found the following to influence negotiation performance: age (Barry & Friedman, 1998); gender (Stuhlmacher & Walters, 1999); and personality factors, including extraversion and agreeableness (Barry & Friedman, 1998; for a review, see Elfenbein, 2015). It was found that the control variables did *not* explain any further variation in negotiation performance over and above the play and motive condition.

3.3.2 Results

3.3.2.1 Data Screening and Cleaning

Before proceeding with data analysis, the data were checked for suitability and completeness. This included removing responses that were incomplete or inaccurate (i.e. the negotiation activity was not performed correctly) and questionnaires with unmatched responses (between pairs and pre and post activity). Data points were visually inspected to check for input errors, and frequencies and descriptive statistics were examined to ensure all scores fell within the expected range (i.e. no clear univariate outliers) and that they ‘made

sense' given the answer scales provided. Errors were corrected or responses deleted if they were unexpected or unexplained.

3.3.2.1.1 Missing Data

The data were inspected to ensure that missing data were not systematic or over-represented. No variables were found to have a particularly large amount of missing data, nor did any specific cases. Where there were instances of missing data that were identified as random (note this occurred only in the individual difference variables), and these constituted only a small proportion of the total number of data points (i.e. less than 10%), instead of list-wise deletion, the decision was made to replace these with the series mean as per Tabachnick et al. (2007) to avoid having to exclude participants from the analysis.

3.3.2.1.2 Computing Variables

Prior to computing scale variables and calculating the reliability and mean scores for each of the scales, items were reverse coded. Cronbach's (1951) alpha, a popular measure of reliability (Bonett & Wright, 2015), was calculated and inspected for each scale as per Gliem and Gliem (2003).

3.3.2.1.3 Data Structure

Measures of dispersion (i.e. skewness and kurtosis) were examined for the dependent variable. It was found that although the joint negotiation score had slight negative skew and kurtosis (skewness statistic = $-.73$ and kurtosis statistic = $-.35$), this amount was minor, and the decision was made to *not* transform these scales since it is recommended to leave variables untransformed where possible, to clarify the interpretation of results (Tabachnick et al., 2007).

3.3.2.2 Manipulation Checks

Manipulation check questions were used to evaluate the effectiveness of the play and instrumental motive experimental manipulations as perceived by participants. That is, did

participants agree that both the play activities met the current definition of play? Did those in the instrumental motive condition believe that their partner was engaging in play with them to gain an advantage in the subsequent negotiation? The mean score of the three manipulation check questions directed at the play activities was calculated. The mean score for this variable was 5.96 (out of a maximum score of 7 = *very much agree*), leading to the conclusion that participants did indeed find the play activities to be ‘playful’. A test of mean differences revealed a significant difference in the mean rating score of the play activity, $t(31) = 37.83$, $p = .00$. Participants in the instrumental motive condition agreed that their partner was playing with them to gain an advantage in the negotiation ($M = 4.91$; out of a maximum score of 7 = *very much agree*). A test of mean differences revealed a significant difference in the mean rating score of the instrumental motive condition, $t(31) = 13.95$, $p = .00$. It was found that those in the non-instrumental condition agreed that their partner was playing with them purely for fun ($M = 5.33$; out of a maximum score of 7 = *very much agree*). A test of mean differences revealed a significant difference in the mean rating score of the instrumental motive condition, $t(41) = 21.56$, $p = .00$.

3.3.2.3 Assumptions

The assumptions of one-way analysis of variance were checked before proceeding with the analysis. First, normality was assessed. As described in section 3.3.2.1, the joint negotiation score displayed slight negative skew and kurtosis. However, the assumptions of normality, skew and kurtosis were also checked visually using graphical methods, including probability Q-Q plots and histograms, and these showed an acceptable level of normality. Further, the Kolmogorov–Smirnov and Shapiro–Wilk tests of normality were both significant ($p < .05$).

The data were also explored and searched for outliers, specifically whether joint negotiation performance per experimental condition had any multivariate outliers. No outliers were identified

3.3.2.4 Dyadic Data

As negotiation is a shared experience it produces interdependent data in an experimental setting (Gelfand & Realo, 1999). The issue of non-independence of dyadic responses in negotiation research has been discussed in the literature and ignoring this issue could affect tests of significance and bias results (Turel, 2010). In particular, the structure of this dataset was dyadic and non-independent in that the outcome variable was *joint* negotiation score, a higher joint score indicated a more successful outcome for *both* and the score for both members of the negotiation pair was dependent on their partner. Further, each member of every pair received the same joint score. Therefore, analysing data only at the individual level results in an *over-representation* of joint negotiation scores, in that each individual member of the pair will receive the same score and thus that score appears twice.

To address the issue of data interdependence, data were analysed at Level 2 or pair/dyadic level. This approach has been used previously in negotiation research (e.g. Liu et al., 2016) and is appropriate because both parties were jointly influence by the same experimental condition, ‘known as mutual external effect or common fate’ (Turel, 2010, p. 114).

3.3.2.5 Main Effects

The data were analysed to determine whether the negotiation performance of participant pairs in the experimental and control conditions differed. A two-by-two univariate ANOVA was used to investigate differences in means across the two groups. There were 32 pairs in the structured play condition, and 42 in the non-structured play condition, and 32 pairs in the motive condition, and 42 pairs in the non-instrumental motive group. The analysis

revealed a statistically significant difference in joint negotiation scores between the structured and unstructured social play condition groups, $F(1, 72) = 21.33, p = .00$, and between instrumental motive condition groups, $F(1, 72) = 10.50, p = .02$. However, the interaction between play and instrumental motive conditions on joint negotiation performance was not found to be statistically significant, $F(1, 72) = 0.73, p = 0.39$.

Then, an independent samples *t*-test was conducted to compare joint negotiation scores in the structured and unstructured social play conditions. It revealed a significant difference in the mean scores for those in the structured play ($M = 1446.25, SD = 131.46$) and unstructured play ($M = 1248.57, SD = 213.00$) conditions, $t(72) = 4.62, p = .00$, with participants in the structured play condition scoring more highly on the negotiation task. For a graphical representation, see Figure 3.

An independent samples *t*-test was also conducted to compare joint negotiation scores in the instrumental motive and no instrumental motive conditions. A significant difference was found in the mean scores for those in the instrumental motive ($M = 1250.31, SD = 185.92$) and no instrumental motive ($M = 1397.86, SD = 199.92$) conditions, $t(72) = -3.24, p = .00$, with participants in the no instrumental motive condition scoring more highly on the negotiation task. For a graphical representation, see Figure 4.

Figure 3

Study 1a: Comparison of Mean Joint Negotiation Score According to Play Condition

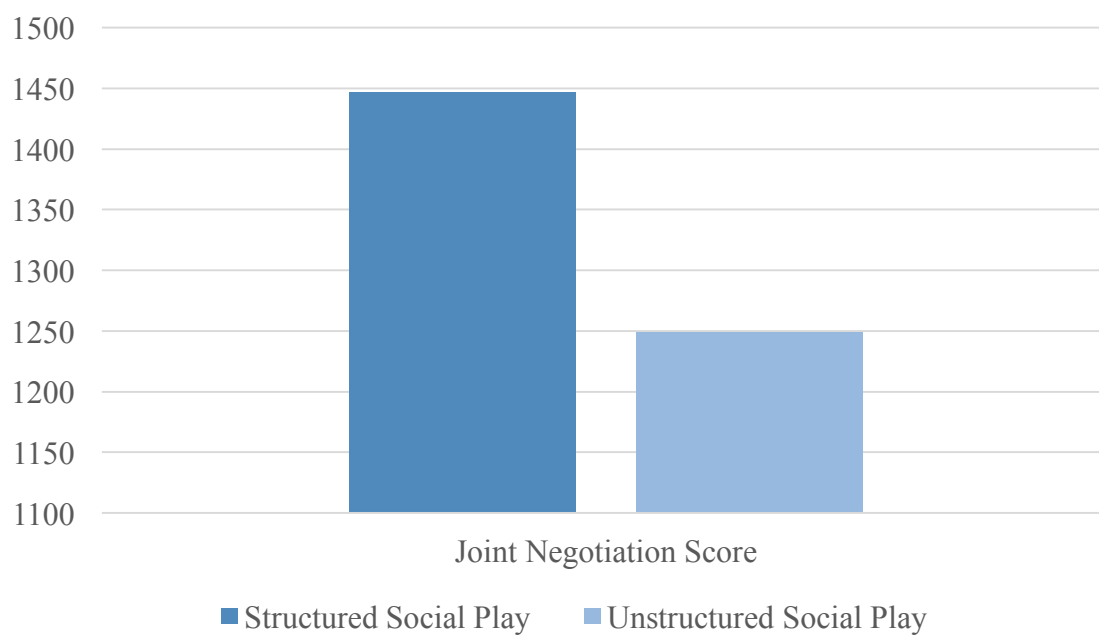
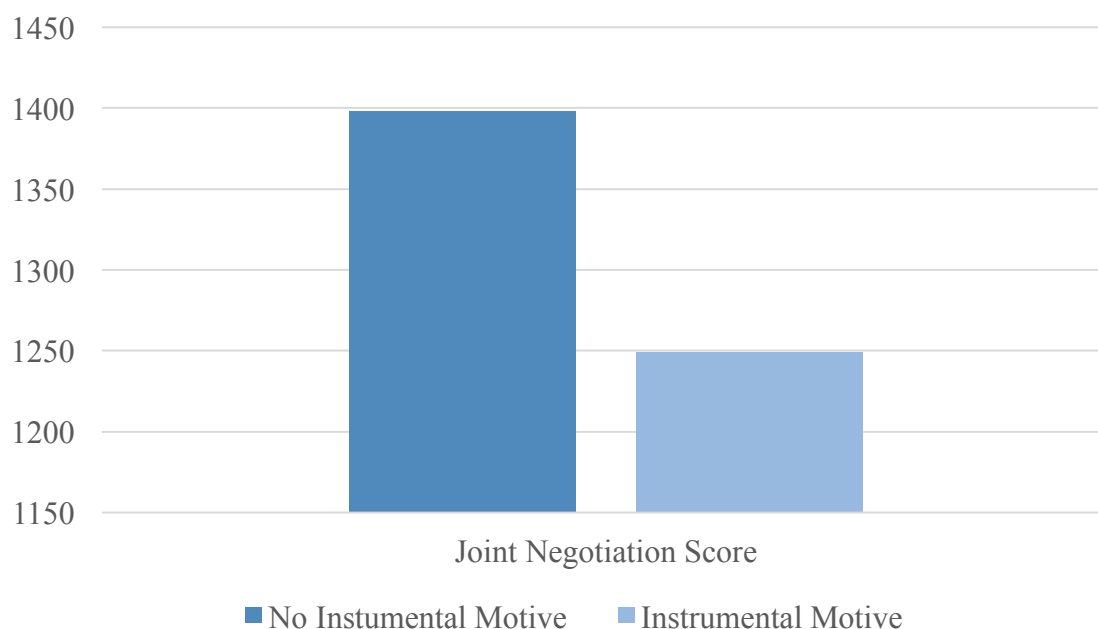


Figure 4

Study 1a: Comparison of Mean Joint Negotiation Score According to Instrumental Motive Condition



3.3.3 Discussion

The purpose of Study 1a, the pilot study, was to test the main effects of the experimental conditions on negotiation performance and to verify the effectiveness of the proposed manipulation checks. First, the analysis compared the impact of both types of social play condition on negotiation performance and it revealed a significant difference between groups. That is, those in the structured social play condition performed significantly better on the subsequent negotiation task. Second, the impact of motive condition on negotiation performance was examined and a significant difference in negotiation performance was found between the two groups. Those in the non-instrumental motive condition performed significantly better on the negotiation task. However, the interaction between play and instrumental motive conditions was found to be non-significant.

Since this was a pilot study, it had some limitations and lessons, which informed the design of the main study (Study 1b). First, the instructions given to participants needed to be

made extremely clear (this change was based on verbal feedback received during the experiment), particularly since many participants were students for whom English is not the first language. The instructions for the instrumental motive condition also needed to be altered to emphasise the *instrumental* nature of this condition, because this seemed to cause some confusion. Second, this study used a small sample size, which can result in lower statistical power and inability to detect results. Lastly, the results of this study may not be generalisable to a wider/more general population.

3.4 Study 1b

3.4.1 Method

Study 1b was designed to test whether the type of play and perceived instrumental motive affected negotiation performance via relationship quality and positive affect in pairs within a university student sample. Study 1b built on Study 1a by utilising refined experimental activities and by incorporating the two mediator variables (relationship quality and positive affect).

3.4.1.1 Sample and Procedure

A 2×2 experimental design methodology was used to test the hypotheses. The total sample size was 270. Participants were undergraduate (53%) and postgraduate (47%) students from four large universities, who participated as part of an in-class activity. Participants were from two universities in Canberra ($n = 70$ and $n = 74$) and one in Brisbane ($n = 86$), Australia, and from one in Manila, Philippines ($n = 40$). The effect of education level (undergraduate v. postgraduate) and country (Australia and the Philippines) were controlled for. The mean age of the sample was 24 years, and 57% were female. Most participants (87%) were enrolled full-time, and just over half (58%) were domestic students. As in the procedure described for the pilot study above, participants were randomly paired and instructed to

engage in a LEGO building activity with each other, before performing a negotiation task. Participants also completed individual pre- and post-activity questionnaires.

After each participant completed an initial questionnaire, they were asked to engage in either a structured or unstructured play activity with the stranger they had been randomly paired with. This activity was also either instrumentally motivated or not instrumentally motivated. Since the pilot test showed that the play manipulation worked, the LEGO building activities remained the same. Again, the difference between the two conditions was in how the activities were framed. Participants in the *structured play* condition were instructed:

Working together with your partner, you have 10 minutes to use the LEGO blocks in front of you to build the tallest tower you can. You *cannot* build whatever you desire. What matters is how tall your final LEGO structure is. That is, the goal of your task is to build the tallest structure that you can.

The purpose of this instruction was to ensure that pair members were working together towards a common goal and were given specific instructions about the type of play/LEGO building they were to engage in. Participants in the *unstructured play* condition were given the following instructions:

Working together with your partner, you have 10 minutes to build *something fun* with the LEGO blocks in front of you. You can build whatever you desire. What matters is not what you build together, but the goal is for you to be engaged and to have fun in the process.

The purpose of this instruction was to give participants ‘free rein’ to decide how they wanted to approach the LEGO building task since the task had no specific end-goal or ‘rules’.

Given that the interaction between play and instrumental motive conditions on joint negotiation performance was not found to be statistically significant in the pilot test, the instructions for the instrumental motive conditions were altered slightly. The aim was to make

the instrumental nature of the motive more salient and ‘believable’ to participants. Those in the *instrumental motive* condition received the following instructions:

The next activity is intended to develop your relationship with your partner in such a way that will give you a *strategic and instrumental advantage* in the subsequent negotiation task. In other words, the next LEGO activity you will engage in will help build rapport and trust with your partner so that they will be more likely to be generous with you in the later negotiation task.

Those in the *non-instrumental motive* condition were told:

The next activity is about building LEGO structures together. After this activity, you will engage in a second activity about a negotiation. You will be given instructions about the negotiation after the LEGO activity. *The two activities are unrelated.*

Both members of the pair received the same play and motive condition experimental manipulation instructions. Next, participants completed the same adapted version of Allred et al.’s (1997) two-person negotiation task as used in the pilot study. Participants negotiated on the number and colour of balls to comprise a theoretical ball pit. A different number (i.e. 2, 4, 6, 8 and 10) of each colour ball (blue, green, red, yellow and purple) was available. Each negotiator preferred different alternatives (of number/colour ball combinations), based upon the points they would receive for each alternate combination. Again, an integrative agreement was possible if negotiators were willing to compromise. After completing the negotiation task, participants completed a questionnaire that included a range of measures, including those for relationship quality and affect, and questions relating to the play and negotiation tasks.

3.4.1.2 Measures

3.4.1.2.1 Demographics

Data were collected on a range of demographic variables, including gender, age, degree type (Bachelor's, Master's or PhD), country of residency (Australia or the Philippines), student type (domestic or international) and study load (full-time or part-time). Gender was coded as 1 = male, 2 = female and 3 = prefer not to say. Participants were asked to provide their age (in years) as of their last birthday. Degree types were coded as 1 = Bachelor's degree, 2 = Master's and 3 = PhD. Student type was coded as 1 = domestic and 2 = international, and enrolment was coded as 1 = full-time, 2 = part-time. These variables were controlled for in further analysis.

3.4.1.2.2 Personality

The HEXACO-60 (Ashton & Lee, 2009) was used to measure individual personality differences, to be controlled for in later analyses. This instrument assesses the six dimensions of the HEXACO model of personality structure and is a shortened version of the longer HEXACO Personality Inventory (Lee & Ashton, 2004). The overall reliability of the HEXACO measure was acceptable ($\alpha = 0.73$), as was that of each of the sub-dimensions, except for honesty-humility (honesty-humility $\alpha = 0.66$, emotionality $\alpha = 0.77$, extraversion $\alpha = 0.77$, agreeableness $\alpha = 0.70$, conscientiousness $\alpha = 0.77$ and openness to experience $\alpha = 0.73$). A 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), was used to rate items such as 'I plan ahead and organise things, to avoid scrambling at the last minute' and 'People sometimes tell me that I am too critical of others'. Scores across the items for each subscale were added and the mean calculated: honesty-humility ($M = 3.39$; $SD = 0.59$), emotionality ($M = 3.22$; $SD = 0.59$), extraversion ($M = 3.40$; $SD = 0.56$), agreeableness ($M = 3.24$; $SD = 0.53$), conscientiousness ($M = 3.53$; $SD = 0.55$) and openness to experience ($M = 3.36$; $SD = 0.59$).

3.4.1.2.3 Playfulness

Also later controlled for, playfulness was measured using Barnett's (2007) 15-item self-report APS. This reliable, well-established scale has been used in the literature on play in adulthood (e.g. Barnett, 2012; Magnuson & Barnett, 2013; Proyer & Rodden, 2013; Qian & Yarnal, 2011, cited in Proyer, 2017). Previous research demonstrates reliability of $\alpha = .89$ (Barnett, 2007), and has also shown that this measure displays convergent validity with other playfulness questionnaires (e.g. the OLIW, Proyer, 2017; SMAP, Proyer, 2012; APS, Glynn & Webster, 1992). Participants rated themselves on a scale from 1 (*very little*) to 7 (*a lot*) on their levels of characteristics such as 'clowns around', 'jokes/teases', 'outgoing' and 'spontaneous'. Scores across the items were added and the mean calculated to give each participant a playfulness score ($M = 4.90$; $SD = 0.79$). In this sample, the overall reliability of the scale was $\alpha = 0.86$.

3.4.1.2.4 Machiavellianism

Machiavellianism was measured using the scale developed by Dahling et al. (2009). Participants rated themselves on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*) on 16 items, including 'I am willing to be unethical if I believe it will help me succeed', 'The only good reason to talk to others is to get information that I can use to my benefit' and 'People are only motivated by personal gain'. Cronbach's alpha for the scale in this sample was 0.88. Scores across items were added and the mean calculated to give a Machiavellianism score ($M = 3.25$, $SD = 0.90$). The individual difference variables described above were controlled for in the main analysis (more details are provided below) and were later included in supplementary analyses (see below for more information).

3.4.1.2.5 Affect

Positive and negative affects were measured using the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). This scale is widely used and has been shown to be

internally consistent (Anderson & Thompson, 2004) and reliable over time (Watson et al., 1988). Participants rated themselves from 1 (*very slightly or not at all*) to 5 (*extremely*) on how much they felt 20 emotions ‘during the past few weeks’, including ‘interested’, ‘excited’, ‘inspired’ and ‘enthusiastic’. Scores across the two subscales (10 items each) were added and the mean calculated to give each participant a Positive ($\alpha = 0.83$, $M = 3.47$; $SD = 0.62$) and a Negative Affect score ($\alpha = 0.81$, $M = 2.41$; $SD = 0.70$).

3.4.1.2.6 Relationship Quality

An adapted version of the Interpersonal Relationship Quality Scale (Chu, 2017) was used. This scale is a combination of the High-Quality Relationship Scale developed by Carmeli and Gittell (2009), which measures shared goals, knowledge and respect, and the Relationship Quality scale developed by May et al. (2004), which measures rewarding co-worker relations. The 13-items scale was adapted to make explicit reference to the participant’s negotiation partner, rather than a non-specified work colleague(s). Each item was rated on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). A higher score denoted relatively high interpersonal relationship quality.

Mokken scale analysis (Van der Ark, 2012) was used to check the scalability and dimensionality of the Adapted Interpersonal Relationship Quality Scale. Two items were removed from the scale because dropping these improved the scale substantially. Then, the analysis revealed the scale comprised two major sub-dimensions. The first dimension, comprising seven items, captured shared vision, communication and understanding, whereas the second dimension, comprising four items, captured respect and connection. Given that this study theorised that engaging in play with a negotiation partner would enhance the interpersonal relationship quality, leading to improved communication and both partners working together to reach a shared, mutually beneficial agreement, the first dimension of the subscale was deemed to be more relevant for further analysis. The alpha reliability of this 7-

item scale is 0.92 ($M = 6.33$, $SD = 0.78$). The (adapted) subscale items included ‘My co-negotiator and I shared a common vision about the negotiation process’, ‘Sharing with one another in the context of this negotiation enabled us to better understand each other’s desired outcomes’, ‘My interactions with my co-negotiator were rewarding’ and ‘My co-negotiator listened to what I had to say’.

3.4.1.2.7 Manipulation Checks

To determine whether the social interaction activity was considered playful by participants, the questions asked were ‘Was the LEGO building activity you engaged in with your partner before completing the negotiation task carried out with the *goal of amusement and fun?*’, ‘Did the LEGO building activity involve an *enthusiastic and in-the-moment* attitude or approach?’ and ‘Was the LEGO building activity highly *interactive either between you and your partner, or with the activity itself* (or both)?’ These questions addressed each element of the play definition separately and aimed to assess whether the LEGO building activity undertaken met the proposed definition of play and was considered ‘playful’ by participants. The internal reliability of the three items was 0.74, and the mean score for this scale was 5.90 ($SD = 0.88$) out of a possible maximum score of seven.

To check the instrumental motive manipulation, eight questions were asked, including ‘Did you intend to use the LEGO activity to gain a strategic advantage in the negotiation such that your negotiation partner would be more generous to you in the negotiation task?’, ‘Did you build the LEGO structure in a way that would give you a personal gain in the negotiation task?’, ‘Do you believe that your negotiation partner built LEGO with you so that you would be more generous to them in the negotiation task?’ and ‘Do you believe that your negotiation partner build the LEGO tower in a way that would give them a personal gain in the negotiation task?’ All manipulation check questions were rated on a scale from 1 (*not at all*)

to 7 (*very much so*). For this sample, the internal reliability of the eight items was 0.83 and the mean score was 2.97 ($SD = 1.33$).

3.4.1.2.8 Negotiation Performance

If they were able to reach an agreement, participants reported the terms of their deal, including their individual and joint point scores. Individual and joint scores were both collected; however, a higher joint score indicated better integrative performance (Individual $M = 741.31$; $SD = 110.70$; Joint $M = 1479.67$; $SD = 152.61$). The potential range for individual scores was 0–1020 and for joint scores was 0–1570.

3.4.1.3 Control Variables

The following variables were controlled for because previous research has shown them to be important correlates with playing and having fun: age (Csikszentmihalyi, 1975; Gin Choi et al., 2013; Glynn & Webster, 1993; Guitard et al., 2005; Lamm & Meeks, 2009); gender (Barnett, 2012; Lamm & Meeks, 2009); playfulness (Barnett, 2007; Glynn & Webster, 1992); and certain personality factors, specifically extraversion and agreeableness (Aldag & Sherony, 2001; Barnett, 2012; Karl et al., 2007; Lamm & Meeks, 2009).

Previous research has also found the following to influence negotiation performance: age (Barry & Friedman, 1998); gender (Stuhlmacher & Walters, 1999); and certain personality factors, specifically extraversion and agreeableness (Barry & Friedman, 1998; for a review, see Elfenbein, 2015). Further, the main analysis was performed with and without control variables and the results were found to be robust.²

² As a robustness check, the analyses were run including and excluding controls; the pattern of results was the same.

3.4.2 Results

3.4.2.1 *Data Screening and Cleaning*

Before analyses were conducted, the data were screened and cleaned. This included removing questionnaires with incomplete responses (30 participants were removed), with incorrect activity responses (i.e. negotiation task was not completed correctly; 16 participants were removed) and with unmatched responses (between pairs and pre and post activity; six participants were removed). Data points were visually inspected to check for clear input errors and frequencies, and descriptives were examined to ensure all scores fell within the expected range (i.e. no clear univariate outliers) and that they ‘made sense’, given the answer scales provided. Data from four participants (i.e. two pairs) was excluded from further analyses since their joint negotiation scores were found to lie outside the possible range. Any errors were corrected, or responses deleted, if they were unexpected or unexplained.

3.4.2.1.1 Missing Data

The data were inspected to ensure that missing data were not systematic or over-represented. No variables were found to have a particularly large amount of missing data, nor did any specific cases. Where there were instances of missing data that were identified as random (note this occurred only in the individual difference variables), and these constituted only a small proportion of the total number of data points (i.e. less than 10%), instead of list-wise deletion, the decision was made to replace these with the series mean as per Tabachnick et al. (2007) to avoid having to exclude participants from the analysis. Given that data were paired, if one participant were excluded from the analysis, this would require excluding the pair, and thus, the data from two participants would be lost.

3.4.2.1.2 Computing Variables

Items were reverse coded prior to computing scale variables and calculating the reliability and mean scores for each scale. Cronbach’s (1951) alpha was calculated and

inspected for each, and all scales were found to have acceptable to excellent internal reliabilities (i.e. 0.7–0.9). Mean scale scores were then calculated for each variable.

3.4.2.1.3 Data Structure

Measures of dispersion (i.e. skewness and kurtosis) were also examined. It was found that both the Adapted Interpersonal Relationship Quality (AIRQ) subscale (interpersonal relationship quality measure) and the dependent variable, joint negotiation score, were negatively skewed (skewness statistic for AIRQ = -2.33 and for joint negotiation score = -1.68). These results revealed that generally participants scored highly on both variables, as supported by their relatively high mean scores. The decision was made to *not* transform these scales since this direction of skewness makes logical sense. For example, it is expected that pairs would not score 0 on the negotiation task. Further, it is recommended to leave variables untransformed where possible, to clarify the interpretation of results (Tabachnick et al., 2007).

3.4.2.2 Intra-Class Correlation

Before testing the research model, it was necessary to ensure that the four different university samples resembled each other and that they could therefore be combined for analysis. To check this aspect, the intra-class correlation coefficient (ICC; see Bartko, 1976) on the dependent variable (joint negotiation score) was examined. That is, the variance components were examined to ascertain whether they were nested in universities. The ICC was calculated based on the proportion of between-university variance to total-university variance. This check was performed to ensure that variation in joint negotiation score occurred at the individual level, and not at the university level. ICC = 0.027, which indicated that 2.7% of the variance in joint negotiation score can be attributed to university membership. Since this coefficient fell below 0.05, it was considered acceptable (Maas & Hox, 2005) to examine the four universities in combination.

3.4.2.3 Manipulation Checks

Both type of play and instrumental motive were manipulated in the experimental design. Manipulation checks were used to assess the success of the experimental manipulations. An independent samples *t*-test was used to determine whether there was a significant difference in the mean ‘play manipulation check’ score for those in the structured versus unstructured play conditions. It was found that those in the structured play condition found the activity to be *more playful* than those in the unstructured play condition, and this difference was significant ($M_{StructuredPlay} = 6.04$, $SD = 0.77$, $M_{UnstructuredPlay} = 5.77$, $SD = 0.95$), $t(268) = -0.2.58$, $p = 0.01$.

Manipulation checks also aimed to assess whether those in the instrumental motive condition believed that the LEGO building activity was engaged in for instrumentally motivated reasons. That is, did participants in this condition believe that building LEGO together would give a strategic advantage in the subsequent negotiation task? An independent samples *t*-test was used to determine whether there was a significant difference in the mean ‘motive manipulation check’ score for those in the instrumental motive versus no-motive condition, and no significant differences were found. That is, participants in the instrumental motive condition were *not* more likely to believe that building LEGO with their partner would give an advantage in the negotiation task ($M_{Motive} = 2.91$, $SD = 1.32$, $M_{No-Motive} = 3.02$, $SD = 1.33$), $t(266) = -0.68$, $p = 0.50$.

3.4.2.4 Assumptions

The assumptions of multiple regression were checked before proceeding with the analysis. First, the sample size of 270 (135 pairs) was deemed to be large enough, according to Tabachnick et al. (2007), who have recommended a sample of $N > 50 + (8 * \text{number of independent variables})$. According to this, N should be more than 66. Note that the number of pairs (135) and the total sample size (270) both exceed this recommended amount.

Multicollinearity did *not* occur as the independent variables (type of play and motive conditions) were not correlated above 0.9 ($r = -.06$), and singularity did *not* occur as no independent variable was a combination of other independent variables (Pallant, 2020).

As described above, two variables (relationship quality and negotiation score) were negatively skewed and not normally distributed (relationship quality skewness statistic = -2.7 ; negotiation score skewness statistic = -1.97). Visual inspection of the Normal P-P plots of the regression standardised residual and the scatterplots supported this. Further, the Kolmogorov–Smirnov and Shapiro–Wilk tests of normality were both significant ($p < .05$) for both variables. However, generalised linear models, the model type used in this analysis, fit non-linear models and thus allow response variables from non-normal distributions. Further, because of the large sample size and potential difficulty in interpreting transformed variables, again, the decision was made to leave the variables as is with no transformation. Note, however, that the main analysis was also performed on these two variables under log transformation and the findings were robust.

The data were also explored and searched for outliers. Specifically, it was checked whether there were any multivariate outliers in joint negotiation performance per experimental condition. Thus, 10 participants (five pairs) were classified as outliers (fell outside 1.5 times the interquartile range) and an additional 16 participants (eight pairs) were classified as extreme values (fell outside three times the interquartile range; Pallant, 2020). The interquartile range was calculated using Tukey's Hinges ($Q3-Q1$), and outliers and extreme cases were removed from further analysis.

3.4.2.5 Dyadic Data

As discussed above, the issue of non-independence of dyadic responses in negotiation research is very important and cannot be ignored (Turel, 2010). In this dataset, the joint negotiation score for each member of the negotiation pair is dependent on their partner, and

each member of every pair receives the same joint score. Multilevel modelling and Actor–Partner Independence Models (or similar) are not appropriate in this context because the outcome variable in both these cases must be *individual*-level negotiation performance, to identify and capture the effects of each individual of the pair on their own and on their partner’s negotiation performance. Given that the research model is based on joint negotiation performance, data at the individual level for this outcome were not directly of interest.

To address the issue of interdependence of data, data were analysed at the Level 2 or pair/dyadic level. This approach has been used by other negotiation researchers (e.g. Liu et al., 2016) and is appropriate for two reasons. First, both parties are influenced together by the same external factor, in this case, the experimental condition, resulting in interdependent scores (Turel, 2010). Second, this study was interested in the experimental condition, relationship quality, positive affect, and negotiation performance of both parties *as a single unit*. Therefore, the scores of both parties had to be aggregated ‘to form constructs pertaining to the dyad’ (Turel, 2010, p. 116).

In this case, perceptions of relationship quality and the level of positive affect *of the pair*, experienced after *engaging in play together*, was captured by consensus among both negotiators, and was calculated using the average score for the dyad. However, this approach is only appropriate when there is a high level of within-pair agreement, determined using the r_{wg} inter-rater agreement statistic (Turel, 2010). r_{wg} was calculated using the tool developed by Biemann et al. (2012), and aggregation was considered appropriate when r_{wg} exceeded 0.7 (Turel, 2010). For the Relationship Quality subscale (and taking into consideration the heavily skewed distribution of the data), $r_{wg} = 0.83$ and for positive affect (and taking into consideration the symmetrical nature of the data), $r_{wg} = 0.84$. Therefore, it was appropriate to aggregate the data. After aggregation analysis examined Level 2 effects only (i.e. variability between negotiation pairs, not within).

Level 2 (dyadic/pair level) multivariate outliers were identified using the method above and excluded as per Aguinis et al. (2013) who argued:

Identification techniques [of outliers] are first applied at the highest level of analysis... this top down approach [is recommended] based on practical consideration given that it allows the researcher to pinpoint a smaller number of groups whose lower level data points are worth examining. (p. 283)

The sample size for further analysis was 120 pairs (240 participants).

3.4.2.6 Main Effects

Generalised linear models were used for the analyses as the assumptions of normality were violated, and they can be used as a form of non-linear model (Gurka & Edwards, 2011). However, the analyses were also conducted using standard general linear regression, and the findings across both methods of analysis were robust. The results for each proposed research model (testing alternative explanatory mechanisms) are presented separately.

As can be seen in the correlation table below (Table 3), positive affect was significantly negatively related to joint negotiation performance, and relationship quality was significantly positively related to joint negotiation performance. This supports findings reported in the main body of the thesis.

To test Hypothesis 1, that structured social play will have a stronger positive effect on joint negotiation performance compared with unstructured social play, an independent samples *t*-test was conducted to compare the joint negotiation score in the structured and unstructured play conditions. There were 59 pairs in the structured play condition (joint negotiation score $M = 1539.92$, $SD = 70.10$) and 61 pairs in the unstructured play condition (joint negotiation score $M = 1469.34$, $SD = 153.98$), and the difference in the mean joint negotiation score between groups was significant, $t(118) = 3.21$, $p = 0.00$.

To examine the effect of instrumental motive on negotiation performance, an independent samples *t*-test was conducted to compare the joint negotiation score in the motive and no-motive conditions. There were 61 pairs in the motive condition (joint negotiation score $M = 1509.26$, $SD = 107.89$) and 59 pairs in the no-motive condition (joint negotiation score $M = 1498.64$, $SD = 141.13$), and the difference in the mean joint negotiation score between groups was not significant $t(118) = -0.464$, $p = 0.64$.

3.4.2.6.1 Relationship Quality

Hypothesis 2 proposed that compared to unstructured social play, structured social play will have a stronger indirect positive effect on negotiation performance via relationship quality, such that this type of play increases the quality of the relationship between negotiators, which, in turn, enhances negotiation performance. In investigating relationship quality as the proposed mechanism, the dependent variable was the pair's joint negotiation score and the predictors were the type of play condition, motive condition and relationship quality. A two-by-two between subjects design was employed, and when joint negotiation score was predicted, it was found (see Table 4) that the type of play, $F(1, 116) = 9.09$, $B = 65.88$, $p = 0.00$, and relationship quality, $F(1, 116) = 4.31$, $B = 38.83$, $p = 0.04$, were significant predictors. Motive was not a significant predictor, $F(1, 116) = 0.17$, $B = -9.09$, $p = 0.68$). The overall model fit was $R^2 = 0.11$. Given that motive did not have a significant main effect, the interaction term between play and motive conditions was not retained in the final model.

Table 3.*Study 1b Correlation Table*

	Age	Gender	Playfulness	Extraversion	Agreeableness	Machiavellianism	Positive Affect	Relationship Quality	Joint Negotiation Performance
Age	-	-.09	.04	.05	-.02	-.15*	.24**	.19**	-.06
Gender		-	.02	.01	-.04	-.12	.03	.06	.00
Playfulness			-	.53**	.18**	-.07	.34**	-.05	-.06
Extraversion				-	.14*	-.11	.46**	-.08	-.11
Agreeableness					-	-.28**	.16*	.03	-.10
Machiavellianism						-	-.10	-.17*	.06
Positive Affect							-	.10	-.13*
Relationship Quality								-	.16*
Joint Negotiation Performance									-

* Correlation is significant at the .05 level

** Correlation is significant at the .01 level

Table 4

Study 1b: Main Effects Results with Relationship Quality as Proposed Mediator

Predictor	DV: Relationship Quality					DV: Joint Negotiation Score				
	<i>F</i>	<i>B</i>	<i>t</i>	<i>Sig</i>	95% CI	<i>F</i>	<i>B</i>	<i>t</i>	<i>Sig</i>	95% CI [Lower, Upper]
Intercept	14162.40	6.33	67.98	.00	[6.15, 6.51]	109.38	1227.77	10.25	.00	[990.40, 1465.14]
Structured Play Condition	1.12	.11	1.06	.29	[−.10, .33]	9.09	65.88	3.01	.00	[22.59, 109.18]
Unstructured Play Condition										
Instrumental Motive Condition	.04	.02	.20	.84	[−.19, .23]	.17	−9.09	−.42	.68	[−52.18, 34.01]
Non-Instrumental Motive Condition										
Relationship Quality	-	-	-	-	-	4.31	38.83	2.08	.04	[1.79, 75.87]
Model Fit	R ² = .01					R ² = .11				

The results show that the intercept for the structured play condition is 1293.65, and this is significantly higher than that for the unstructured play condition ($t = 3.01, p = 0.00$, 95% CI for the difference is 22.59 to 109.18 points higher). As can be observed from the positive Beta value for the structured play condition, the results indicate that being in the structured play condition *increased* joint negotiation score by 65.88, compared with being in the unstructured play condition. The relationship quality coefficient of 38.83 represents the average gain in joint negotiation score for each unit increase in relationship quality for those in the play condition, and this is in the expected positive direction.

Both play type and relationship quality were found to significantly predict joint negotiation performance. However, it was found that neither the type of play condition, $F(1, 117) = 1.12, B = 0.11, p = 0.29$, nor the motive condition, $F(1, 117) = 0.04, B = 0.02, p = 0.84$, was a significant predictor of relationship quality. Therefore, the results provide support only for Hypothesis 1, the main direct effect of type of play on negotiation. Hypothesis 2 was partially supported; improved relationship quality increased joint negotiation score, but type of play did not significantly affect relationship quality.

3.4.2.6.2 Positive Affect

Hypothesis 3 proposed that compared to unstructured social play, structured social play will have a stronger indirect positive effect on negotiation performance via positive affect, such that this type of play increases the positive affect of negotiators, which, in turn, enhances negotiation performance. In investigating positive affect as the proposed mechanism, the dependent variable was the pair's joint negotiation score and the predictors were the type of play, motive condition and positive affect. When joint negotiation score was predicted, it was found (see Table 5) that the play condition, $F(1, 116) = 11.41, B = 73.44, p = 0.0$, and positive affect, $F(1, 116) = 4.98, B = -53.24, p = 0.03$, were significant predictors. Motive was not a significant predictor, $F(1, 116) = 0.03, B = -3.65, p = 0.87$. The

overall model fit was $R^2 = 0.12$. Given that motive did not have a significant main effect, the interaction term between play and motive conditions was not retained in the final model.

Table 5

Study 1b: Main Effects Results with Positive Affect as Proposed Mediator

Predictor	DV: Positive Affect					DV: Joint Negotiation Score				
	<i>F</i>	<i>B</i>	<i>t</i>	<i>Sig</i>	95% CI	<i>F</i>	<i>B</i>	<i>t</i>	<i>Sig</i>	95% CI [Lower, Upper]
Intercept	6708.11	3.37	46.29	.00	[3.23, 3.51]	415.41	1652.90	20.03	.00	[1489.44, 1816.36]
Structured Play Condition	.49	.06	.70	.48	[−.11, .23]	11.41	73.44	3.38	.00	[30.38, 116.49]
Unstructured Play Condition										
Instrumental Motive Condition	1.06	.09	1.03	.31	[−.08, .25]	.03	−3.65	−.17	.87	[−46.81, 39.51]
Non-Instrumental Motive Condition										
Positive Affect	-	-	-	-	-	4.98	−53.24	−2.23	.03	[−100.49, −5.99]
Model Fit	$R^2 = .01$					$R^2 = .12$				

The results show that the intercept for the structured play condition is 1726.34, and this is significantly higher than that for the unstructured play condition ($t = 3.38, p = 0.00$, 95% CI for the difference is 30.38 to 116.49 points higher). As can be observed from the positive Beta value for the structured play condition, the results indicate that being in the structured play condition *increased* joint negotiation score by 73.44, compared with being in the unstructured play condition. The positive affect coefficient of -53.24 represents the average loss in joint negotiation score for each unit increase in positive affect for those in the play condition. This is in the opposite direction to the predicted relationship.

Although both type of play condition and positive affect were found to significantly predict joint negotiation performance, when positive affect was predicted, it was found that neither the play type condition, $F(1, 117) = 0.49, B = 0.06, p = 0.48$, nor the motive condition, $F(1, 117) = 1.06, B = 0.09, p = 0.31$, was a significant predictor. Therefore, the results provide support only for the main effect or direct relationship of type of play on negotiation.

3.4.2.7 Moderated Mediation

Hypothesis 4a proposed that instrumental motive (compared to non-instrumental motive), will more strongly moderate the mediating effect of relationship quality between structured social play (compared to unstructured social play) and negotiation performance, such that the indirect positive effect of structured social play on negotiation performance via relationship quality becomes stronger when play is genuine and not instrumentally motivated. In focussing on an alternate mediator variable, Hypothesis 4b proposed that instrumental motive (compared to non-instrumental motive), will more strongly moderate the mediating effect of positive affect between structured social play (compared to unstructured social play) and negotiation performance, such that the indirect positive effect of structured social play on negotiation performance via positive affect becomes stronger when play is genuine and not instrumentally motivated.

To determine whether moderated mediation has taken place, the following must be satisfied: (a) simple mediation should occur, that is, play will have a direct effect on joint negotiation score and an indirect effect on this score via relationship quality and positive affect; (b) simple moderation should occur, that is, both play and motive, and their interaction term, will predict relationship quality and positive affect; and (c) the combined mediation and moderation models should be found to be significant (Hayes, 2013). Given the results presented in the previous section, it can be concluded that moderated mediation did *not* occur because (a) although type of play significantly influenced joint negotiation score, there was no significant relationship between play and relationship quality or play and positive affect, and thus no indirect effect of play on joint negotiation score via relationship quality or positive affect and (b) the effects of play, motive and the play by motive interaction term on relationship quality and positive affect were found to be non-significant.

To test first-stage moderated mediation, PROCESS Macro for SPSS Model 7 was used (Hayes, 2013). The analyses were performed on the dyadic data, with age, gender, playfulness, extraversion and agreeableness included as control variables. The analyses were conducted on a piecemeal basis (i.e. positive affect and relationship quality were analysed in separate models)

Hypothesis 4a. Relationship Quality

With relationship quality acting as the mediator between play condition and negotiation performance, and including motive condition as a first- stage moderator, support for first-stage moderated mediation was *not* found. Play condition was not a significant predictor of relationship quality ($p = .08$) nor was motive condition ($p = .25$). The interaction term at the first stage (play condition $\times$ motive condition) was therefore also not significant, $\Delta R^2 = .02$, $\Delta F(1, 116) = 2.04$, $p = .16$. When predicting negotiation performance, play

condition (i.e., the direct effect) was a significant predictor ($p = .00$), as was relationship quality ($p = .04$). However, the indirect effects were found to be non-significant.

Hypothesis 4b. Positive Affect

3.4.2.8 With positive affect acting as the mediator between play condition and negotiation performance, and including motive condition as a first- stage moderator, support for first- stage moderated mediation was not found. Play condition was not a significant predictor of positive affect ($p = .32$), nor was motive condition ($p = .22$). The interaction term at the first stage (play condition $\times$ motive condition) was therefore also not significant, $\Delta R^2 = .00$, $\Delta F(1, 116) = .51$, $p = .48$. When predicting negotiation performance, play condition (i.e., the direct effect) was a significant predictor ($p = .00$), as was positive affect ($p = .03$). However, the indirect effects were found to be non-significant. Supplementary Exploratory Analyses

Given that the results did not provide support for the mechanisms or moderator proposed, additional analyses were conducted to further explore the potential relationship between play and negotiation. It is important to emphasise here that these are post-hoc analyses, conducted after theorising and data collection. Although HARKing (Hypothesising After Results are Known) has several associated problems, arguments have recently been made in support of Tharking (Transparently HARKing in the discussion section; Hollenbeck & Wright, 2017). That is, ‘tharking can promote the effectiveness and efficiency of both scientific inquiry and cumulative knowledge creation... [and that] all empirical papers should include a subsection that reports post hoc exploratory data analysis’ (Hollenbeck & Wright, 2017, p. 5).

In this light, these post hoc analyses investigated whether individual-level trait playfulness of both players (as a trait variable substitute for play condition) and Machiavellianism (as a trait variable substitute for instrumental motive condition, chosen

because a defining feature of Machiavellians is being highly goal-directed and strategic), would have an effect on relationship quality, positive affect and negotiation performance.

The Actor–Partner Interdependence Model (APIM; e.g. as used in Kenny & Ledermann, 2010) was used to investigate the relationships between individual level playfulness, Machiavellianism, both predicted mechanisms and negotiation performance for both the self (actor effects) and the negotiation partner (partner effects). The APIM analyses interdependent data within interpersonal relationships, as is the case in negotiating pairs (Cook & Kenny, 2005). In the case of non-independent observations, data is analysed at the dyadic level. However, when investigating the impact of individual variation in each outcome variable on both the self (actor) and other (partner) member of the pair, the individual unit measures are retained, but are treated as being nested within the dyad. Therefore, the variables included in this analysis were *individual level* playfulness, Machiavellianism, positive affect, relationship quality and individual negotiation score.

Given that the analysis performed was exploratory in nature, outliers were not excluded and the sample size was 135 pairs. The pair members were treated as indistinguishable. The program developed by Stas et al. (2018) was used to run the analyses. The analyses, performed on latent constructs, used structural equation modelling with maximum likelihood estimation using the program lavaan (Rosseel, 2012). The tests of coefficients were Z-tests. Effect sizes for actor and partner effects are partial correlations. Betas use the overall standard deviation across all persons for standardisation.

3.4.2.8.1 Direct Effect of Playfulness on Negotiation Performance

The focus of this analysis was the investigation of the effect of playfulness on individual negotiation performance. The lavaan model converged after 54 iterations. The intercept (the predicted score on individual negotiation performance when playfulness equals zero) for indistinguishable pair members was equal to 824.672 and was statistically

significant, $p < .001$, 95% CI [721.24, 928.11]. The actor effect was equal to -24.678 , $p = .004$, 95% CI $[-41.61, -7.75]$. The standardised actor effect was -0.164 (partial $r = -.173$). The partner effect was equal to 7.437 , which was not statistically significant, $p = .389$, 95% CI $[-9.49, 24.37]$, and the overall standardised effect was 0.049 (partial $r = .052$). Therefore, it can be said that actor playfulness negatively affected individual negotiation score and there was no significant partner effect.

3.4.2.8.2 Relationship Quality

First, the effect of playfulness on relationship quality was investigated. The lavaan model converged after 20 iterations. Although the intercept (the predicted score on relationship quality when playfulness equals zero) for indistinguishable pair members was equal to 6.212 and was statistically significant, $p < .001$, 95% CI $[5.36, 7.06]$, there were no significant actor or partner effects.

Next, the effect of relationship quality on individual negotiation performance was examined. The lavaan model converged after 59 iterations. It was found that the intercept (the predicted score on individual negotiation performance when relationship quality equals zero) for indistinguishable pair members was equal to 657.391 and was statistically significant, $p < .001$, 95% CI $[526.68, 788.1]$. The actor effect was equal to -10.786 , $p = .270$, 95% CI $[-29.97, 8.39]$. The standardised actor effect was -0.063 (partial $r = -.068$). The partner effect was equal to 23.990 , which is statistically significant, $p = .014$, 95% CI $[4.81, 43.17]$, and its overall standardised effect was 0.140 (partial $r = .152$). Therefore, it can be said that for a pair, the partner's assessment of relationship quality positively affected the individual's own negotiation score, but there was no actor effect.

3.4.2.8.3 Positive Affect

First, the effect of playfulness on positive affect was investigated. The lavaan model converged after 22 iterations. It was found that the intercept (the predicted score on positive

affect when playfulness equals zero) for indistinguishable pair members was equal to 2.109 and was statistically significant, $p < .001$, 95% CI [1.54, 2.68]. The actor effect was equal to 0.28, $p < .001$, 95% CI [0.19, 0.37]. The standardised actor effect was 0.359 (partial $r = .346$). The partner effect was equal to -0.001 , which is not statistically significant, $p = .991$, 95% CI $[-0.09, 0.09]$, and its overall standardised effect was -0.001 (partial $r = -.001$). Therefore, it can be said that actor playfulness positively affected own individual positive affect and there was no partner effect.

Second, the effect of positive affect on individual negotiation performance was investigated. The lavaan model converged after 59 iterations. Although the intercept (the predicted score on individual negotiation performance when positive affect equals zero) for indistinguishable members was equal to 851.616 and is statistically significant, $p < .001$, 95% CI [753.06, 950.17], there were no significant actor or partner effects.

3.4.2.8.4 Machiavellianism

Lastly, Machiavellianism (as a trait proxy for instrumental motive condition) and its effect on individual negotiation performance was investigated. The lavaan model converged after 57 iterations. The intercept (the predicted score on individual negotiation performance when Machiavellianism equals zero) for indistinguishable pair members was equal to 698.694 and is statistically significant, $p < .001$, 95% CI [634.43, 762.96]. The actor effect was equal to 15.327, $p = .042$, 95% CI [0.53, 30.12]. The standardised actor effect was 0.124 (partial $r = .124$). The partner effect was equal to -2.566 , which is not statistically significant, $p = .734$, 95% CI $[-17.36, 12.23]$, and the overall standardised effect was -0.021 (partial $r = -.021$). Therefore, it can be said that actor Machiavellianism positively affected individual negotiation score but there was no partner effect.

3.4.2.8.5 Moderating Role of Playfulness

Supplementary analyses were conducted using the PROCESS macro Model 1 developed by Hayes (2013) to investigate the potential moderating role of (individual trait) playfulness on the relationship between play condition and negotiation performance. It was predicted that a higher individual-level playfulness score would strengthen the positive relationship between the structured social play condition and negotiation performance. This prediction was supported, because the interaction term between play condition and playfulness was found to be a significant and positive predictor of negotiation score, $B = 40.25$, $\Delta R^2 = .02$, $\Delta F(1, 229) = 4.80$, $p = < .05$. This is an interesting finding that suggests that individual-level trait playfulness can enhance the positive relationship between engaging in structured social play and subsequent negotiation performance.

3.4.3 Discussion

The aim of Study 1b was to investigate the impact of two different types of social play, structured and unstructured, on joint negotiation performance among stranger dyad pairs. Two resources, psychological affect and relationship quality, were proposed as psychological mechanisms linking play and outcomes, and instrumental motive was posited as a potential boundary condition. Hypothesis 1 proposed that structured social play would have a stronger positive effect on joint negotiation performance. This hypothesis was supported. Hypothesis 2 proposed that structured social play would have an indirect positive effect on negotiation performance via relationship quality. This hypothesis was not supported. Hypothesis 3 proposed that structured social play would have an indirect positive effect on negotiation performance via positive affect. The results did not support this hypothesis. Hypotheses 4a and 4b proposed that instrumental motive would act as a first-stage moderator in the relationship between structured social play, personal resources and negotiation performance. Neither of the conditional indirect effect hypotheses was supported.

Although this experimental study did not provide full support for the proposed hypotheses, it still made important contributions. First, this study differentiated between social and independent play and then introduced two new types of social play (structured and unstructured). Next, it identified the key features of each type of social play and examined their impact on negotiation. Second, this research demonstrates the novel application of COR theory in the negotiation context and is the first to propose that play can be used as a resource in itself that can then be invested to generate additional resources and potentially protect from resource loss, which, in particular, applies to psychological and relational resources. This study also investigated unique interpersonal and instrumental aspects of play and provides some support for the dual-concern theory of negotiation and emotion contagion principles, particularly in discussion of how relational and emotional resources can be shared and used within a negotiation context. Empirically, this research addresses the need for experimental designs in play at work. However, it had some limitations, which are discussed in section 3.5.7.

3.5 General Discussion

There are, arguably, two perspectives on the role of play at work. The first considers play as an activity that diminishes resources that should otherwise be devoted to task performance (Abramis, 1990; D'Abate, 2005; Glynn & Ibarra, 1988). A contrasting perspective suggests that play can improve job performance and, on balance, produces more positive than negative outcomes. Consider then, the widely accepted practice of clients being invited to a golf course, large sporting events or a restaurant and the subsequent business deals that occur. In many cultures, elements of social play, business and negotiation are intertwined. However, no empirical investigation has been conducted on the different types of social play and on how and when these may be used to enhance negotiation.

To address this gap, this study introduced and measured the impact of two different types of social play. Structured social play was defined as having clear, predefined rules, boundaries and outcomes, which creates a sense of accomplishment among players. In contrast, unstructured social play was defined as being more spontaneous in nature, with its processes and outcomes being ill-defined and the main objective being purely to have fun. Motivated by COR theory as the overarching perspective, a theoretical model was developed and tested, which specifies how and when these two different types of social play can enhance negotiation performance. The potential ‘dark’ side of play was investigated, as were important interpersonal and instrumental aspects of play that are unique to an organisational setting. That is, can play worsen negotiation performance and can the perception of instrumentally motivated play have a detrimental effect?

Evidence from the experimental study partially supported the hypotheses. It was found that structured social play had a direct positive effect on integrative negotiation performance in stranger dyadic pairs. However, the proposed conditional indirect effect relationships were not supported. This study is the first to use an experimental design to test the impact of different types of social play on work-related outcomes. Although the hypotheses were not fully supported, this research contributes to current knowledge and paves the way for future research in this area.

3.5.1 Direct Effect of Social Play on Negotiation

In the experimental design, before completing a two-person negotiation task, dyadic pairs of strangers were given either structured or unstructured social play instructions. Those in the structured play condition were told to work together to build a LEGO tower and that the goal of their task was to build the tallest structure they could. By setting a clear, measurable, objective goal to the task, participants were able to measure the success of the outcomes of their social play activity. In comparison, those in the unstructured play condition were told to

work together but that they could build whatever they liked, their only objective being to have fun, creating an ambiguous end-point of the social play task.

3.5.1.1 Hypothesis 1

The first hypothesis examined the direct effect of two different types of social play, structured and unstructured, on negotiation performance. This study argued that the value of social play lies in its ability to transform the context of negotiation from competitive to cooperative. Although it is believed that both types of social play will have the desired effects, it is proposed that structured social play will have a stronger positive effect on joint negotiation performance. Structured social play is particularly beneficial because it involves an activity with specific rules and outcomes, in which players have a clear objective and purpose in mind, allowing their focus to subconsciously shift to enhancing their relational, psychological and negotiation outcomes. Through the nature of the structured social play task, players had to work together to achieve their goal. This encouraged collaboration and contributed to the development of a sense of accomplishment, which results in a gain in self-confidence and greater task achievement. This assessment may then carry over into the negotiation task, whereby both parties continue working together with the belief that they can achieve a better outcome for the team. Applying this in the negotiation context, negotiators then worked together to maximise their joint gains in the negotiation task. *This hypothesis was supported.* It was found that those in the structured social play condition performed significantly better on the joint negotiation task compared with those in the non-structured social play condition.

In comparison, participants in the unstructured social play condition did not have any direction or ‘purpose’ to their play. Perhaps this will not be an issue if partners are already friends or acquainted, but for social play to have the magnitude of desired social cohesion effect observed in structured social play activities, there needs to be some starting point, or

common goal, to bring the two strangers together. This is noted in the example of a round of golf, whereby all players know the rules of the game and how to proceed. However, those in the unstructured play condition may have spent time working independently or were unsure of how to commence the task. Given the limited time specified for the play activity, this aspect may have been detrimental. There was also no way to measure the ‘success’ of the building activity in the unstructured play condition, and participants may have perceived the instruction to ‘just have fun’ as contrived or inauthentic, which may have also negatively affected negotiation performance. Indeed, drawing on the literature on fun at work, it has been shown that employees who construe organisationally sponsored or imposed playful activities as ‘manufactured fun’ experience increased negative emotions and stress (Karl & Peluchette, 2006b; Owler et al., 2010). Similarly, play can have negative consequences when participants are not interested in engaging in play (Gin Choi et al., 2013), experience discomfort as a result of ‘official’ or ‘managed’ fun (Plester et al., 2015) and do not like ‘being told how and when to have fun’ (Owler et al., 2010, p. 348).

Another potential factor worth considering is the impact of *successful* task completion (i.e. in unstructured type play, they successfully build a tall tower). Probably, for structured social play to have a positive effect on negotiation, the play outcome must be considered successful by both parties. In the case of even a non-competitive game of golf, one would have to display competent performance (and thus be contributing to the ‘outcome’ of a good game). Task accomplishment could be the key to unlocking a more successful negotiation performance because, if the pair’s performance in the play activity is considered unsuccessful (i.e. in this case, if they fail to build a tower that stands tall), or if one or both members of the pair view the other as incompetent, they could be less likely to work together to achieve an integrative negotiation outcome.

3.5.2 Mediating Role of Personal Resources: Two Proposed Mechanisms

Although negotiators may initially feel that they are entering into a competitive exercise, engaging in social play together may have the potential to alter the quality of the relationship between them from one that is characteristic of strangers, to one characteristic of friends (indicating an increase in relational resources). It may also improve their mood (indicating an increase in psychological resources), so that they take a more positive, collaborative and cooperative approach to the task.

3.5.2.1 Hypothesis 2

The second hypothesis proposed that structured social play would have an indirect positive effect on negotiation performance via relationship quality, such that structured social play would increase the quality of the relationship between negotiators, which, in turn, would enhance negotiation performance. *The results did not support this hypothesis.*

The argument that structured social play would enhance relationship quality was not supported. This finding is inconsistent with those of prior research, which has shown that play increases trust (Hunter et al., 2010), bonding and social interactions (Hunter et al., 2010; Roy, 1959; Sørensen & Spoelestra, 2011), social cohesion (Roy, 1959), a sense of solidarity (Locke, 1989) and interactions with others (Yarnal & Qian, 2011) and creates a friendly atmosphere (Sørensen & Spoelestra, 2011). A possible explanation is that for social play to have a positive impact, it must be entered into organically and naturally. As discussed in section 3.5.1.1, perhaps being told when and how to play takes away the very ‘playful’ essence of play activities. Therefore, participants may have viewed the LEGO building activity to be just another in a series of tasks for them to complete as part of the study. Further, participants were allocated into ‘stranger’ pair dyads. Although this was necessary for the purpose of this experiment, perhaps the power of social play lies in its ability to

strengthen the relationship between two people who consciously choose to play together, be this for strategic or non-strategic reasons.

Although structured social play did not have a significant effect on relationship quality, relationship quality was shown to be a significant predictor of negotiation performance. A significant positive relationship was found between relationship quality and negotiation performance such that, as ratings of the quality of the relationship among the pair increased, so too did their joint point score. This positive relationship was in the expected direction. This finding provides support for the dual-concern model of negotiation, which argues that an integrative agreement is more likely to be reached when negotiators care both for their own and for their negotiation partners' outcomes (Pruitt, 1983; Pruitt & Rubin, 1986).

These findings showed that if the relationship between negotiators is similar to that of friends, if both partners feel positively about the interpersonal relationship and view their negotiation partner favourably and if they care for the other person's outcomes (as well as their own), they will work together to reach a mutually beneficial solution, rather than seeking to maximise their own gains. These results supported previous findings that a close or positive interpersonal relationship will benefit the negotiation process and lead to an integrative agreement (e.g. De Dreu, 2004; Kong et al., 2014; Valley et al., 1995, 1998).

3.5.2.2 Hypothesis 3

The third hypothesis proposed that structured social play would have an indirect positive effect on negotiation performance via positive affect, such that structured social play would increase the positive affect of negotiators, which, in turn, would enhance negotiation performance. *The results did not support this hypothesis.*

The finding that structured social play did not increase positive affect is inconsistent with that of prior studies (e.g. Proyer & Ruch, 2011; Webster & Martocchio, 1992; Yarnal &

Qian, 2011). One explanation may be that the full range of emotional experience because of play may not have been captured within the laboratory paradigm. Perhaps participants experienced other positive emotions after engaging in play but capturing only one measure of affect (i.e. the PANAS Scale) may have left unexamined other emotions that negotiators experience or express within the negotiation context.

Although structured social play did not have a significant effect on positive affect, positive affect was shown to be a significant predictor of negotiation performance. A significant negative relationship was found between positive affect and negotiation performance, such that as ratings of positive affect among the pair increased, their joint point score decreased, indicating a less successful negotiation performance. This relationship was not in the expected direction and contradicts prior studies, which showed that positive affect did improve negotiation performance (e.g. Carnevale, 2008; Forgas, 1998; Kopelman et al., 2006) as explained by the affect infusion model (Forgas, 1995), which argues that emotions influence thoughts, and that negotiators adopt negotiation strategies that are congruent to their affective state (Forgas, 1998).

This result may be explained in terms of participants being distracted from the task at hand and not regaining focus after the play activity. There may have been a spillover effect from the perceived frivolity of the play activity into the negotiation task, resulting in participants not taking the activity seriously. Previous research has investigated the negative impact of negative emotions in the context of negotiation (e.g. for a review, see Brett & Thompson, 2016; see also Friedman et al., 2004; Kopelman et al., 2006; Shao et al., 2015; Wang et al., 2012). However, previous research has not shown a negative relationship between positive emotions and negotiation.

Based on the propositions of COR theory, it was argued that structured social play would increase positive affect (a psychological resource), which would, in turn, enhance

negotiation performance. However, perhaps there is a curvilinear relationship between resource gain and outcomes. The *too-much-of-a-good-thing principle* (Pierce & Aguinis, 2013) may be applicable to the relationship between affect and negotiation, such that the benefits of increased positive affect will reach a point of inflection, resulting in an inverted U-shape curvilinear relationship. In this case, an increase in psychological resources is useful up to a certain point, but an excess in positive affect may in fact be detrimental, particularly if it causes distraction from the task at hand. Another possible explanation lies in the experimental investigation of play, emotion and negotiation. Specifically, the simulated social play activity may not have led to the authentic experience of positive affect, and while mild positive emotions may have been experienced by participants, these may not have been experienced strongly enough to truly affect negotiation performance.

3.5.3 Moderating Role of Instrumental Motive

3.5.3.1 Hypotheses 4a and 4b

Hypotheses 4a and 4b proposed that instrumental motive would act as a first-stage moderator in the relationship between structured social play, personal resources and negotiation performance, such that there would be a stronger relationship between structured social play and resources (relationship quality and positive affect) in the absence of instrumental motive. *Neither of the conditional indirect effect hypotheses was supported.* However, Study 1a revealed that instrumental motive had a significant effect and that those in the non-instrumental motive performed better on the negotiation task than those in the instrumental motive condition. Although this was not a significant interaction with the play condition, it is an interesting finding that provides some support for the notion that instrumental motive could have a harmful effect on negotiation.

Although there has been some discussion of play being instigated in the workplace for a higher-order purpose beyond simply just having fun (e.g. Linder et al., 2001), no study has

explored whether individuals engage in play with the specific instrumental motive of improving negotiation performance. Further, although employees may report negative reactions to organisationally imposed play activities that they believe to be inauthentic (e.g. Oowler et al., 2010), the literature has not considered the outcomes of instrumentally motivated play empirically. Perhaps the experimental design of the current study is responsible for the lack of significant findings. Perhaps for instrumental motive to have a detectable effect, it needs to be truly felt by the initiator and perceived by the target. There may also be limitations on measuring this phenomenon in a laboratory/experimental setting, because participants do not really believe that their negotiation partner is engaging in play with them for instrumental reasons. Indeed, the manipulation check questions confirmed this impression. Therefore, the lack of findings may be because of the experimental design, rather than because the phenomenon does not occur in the ‘real world’. Perhaps instrumental motive needs to be genuine (or genuinely perceived) to have an effect. This could be measured in a field setting or through a stronger experimental manipulation.

3.5.4 Supplementary Analyses

As per Hollenbeck and Wright’s (2017) recommendations, supplementary analyses were performed, which further explored the relationship between social play and negotiation performance among stranger dyads. The APIM (Kenny & Ledermann, 2010) was used for analysis. This is a statistical method commonly used in negotiation research to examine the influence of dyad members on each other (e.g. Aslani et al., 2016; Bronstein et al., 2012; for a discussion of different analysis techniques, see also Turel, 2010). This technique was utilised in investigating the influence of certain personality factors on the mediator and dependent variables. Specifically, the impact of playfulness (as a trait variable substitute for play condition) and Machiavellianism (as a trait variable substitute for instrumental motive condition) on individual-level perceived relationship quality, positive affect and individual

negotiation performance was investigated. The aim was to explore whether trait representations of each of the predictor variables, which are thought to be stable over time (George, 1991), and which may vary within dyads, can predict negotiation performance. APIM is used to measure both actor (i.e. own) and partner (i.e. one's negotiation partner's) effects on both own (actor) and the other's (partner's) outcomes.

The APIM produced some interesting results. First, it was found that the own level of playfulness negatively affected the individual negotiation score. That is, the more playful an individual was, the poorer they performed individually in the negotiation task. This finding, that one's own high level of playfulness has a detrimental impact on one's negotiation score, is an unexpected result. Perhaps this was because highly playful participants were not focused on the task at hand and did not take the negotiation task seriously. The APIM also investigated the impact of playfulness on the individual negotiation score, not the joint score. Perhaps individuals who were more playful were willing to 'sacrifice' their own score, if it meant the pair achieved a higher joint score. This would align with the proposed argument that play is used to encourage co-cooperativeness and collaboration, rather than seeking only to benefit one's own interests.

Second, it was found that the partner's assessment of relationship quality positively affected the individual's negotiation performance. That is, if one's partner views the relationship favourably, one is more likely to receive a higher individual negotiation score. This result supports the argument that increasing concern for the other party will lead to a more integrative agreement, as both parties seek to increase not only their own score but also the individual score of their partner. It could also be that the partner viewing the relationship positively meant they were more willing to concede and give one a higher individual points score, namely, that they were working for the 'good of the team', rather than seeking only to maximise their own outcomes.

Third, it was found that actor playfulness positively affected one's positive affect. This finding supports a body of previous research showing a positive relationship between both traits (e.g. Proyer & Ruch, 2011; Yarnal & Qian, 2011). Perhaps trait-level playfulness is a stronger predictor of positive affect, compared with imposed social play activities. Researchers could consider the potential negative impact of non-playful individuals feeling pressured to engage in certain play activities to succeed in the business world.

Fourth, the results showed that actor Machiavellianism positively affected one's individual negotiation score. Given that individuals high on Machiavellianism have been shown to manipulate others to benefit themselves (Ruiz-Palomino & Linuesa-Langreo, 2018), this finding is not surprising. Further, social manipulation is a defining feature of Machiavellianism and individuals scoring high on Machiavellianism often use influence tactics to achieve their personal goals (Christie & Geis, 1970). Therefore, individuals who score highly on the Machiavellianism measure are likely to seek only to maximise their own score. This result supports the argument that people may be instrumentally motivated to engage in play to improve their negotiation outcomes. However, perhaps Machiavellians are more successful in hiding their true (ulterior) motivation, to avoid being perceived as strategic by others.

Lastly, the moderating role of playfulness on the relationship between play condition and negotiation performance was investigated. It was found that the interaction between play condition and playfulness was a significant and positive predictor of negotiation score. This is an interesting finding that suggests that individual-level trait playfulness can enhance the positive relationship between engaging in structured social play and subsequent negotiation performance. Therefore, highly playful individuals will benefit *more* in a later negotiation task if they engage in a structured social play activity with their negotiation partner.

3.5.5 Theoretical Contributions

Although not all the hypotheses were supported, this research nonetheless makes some important theoretical contributions. First, it contributes to the literature on play by expanding existing knowledge of the different types as well as the outcomes of social play in a work-related setting. This research first differentiated between social and independent play and then introduced two new types of social play. In defining, describing and operationalising these two types of social play (structured and unstructured), this study was able to explore the strength of their relationships with various outcome variables. The current study also identified the key features of each type of social play and examined their impact on negotiation. Specifically, it was argued that structured social play, which has agreed-upon rules of engagement and measurable outcomes, leads players to develop feelings of accomplishment and confidence, resulting in higher levels of persistence and goal attainment in the negotiation task. In addition, by examining the effects of both types of social play on a work-related outcome, specifically, negotiation, this research adds to existing knowledge of the consequences of social play at work by introducing a novel outcome of social play. In doing so, this study is also the first to link the play and negotiation literatures. This is important because, although considerable anecdotal and observational support have both been provided for the impact of social play on negotiation (e.g. Janiak, 2003; Jansson & Ramström, 2005; Neo, 2001; Taminiau & Wiersma, 2016), this topic has not been examined in an experimental or empirical setting.

This research demonstrates the novel application of COR theory in the negotiation context. Although social play was not found to significantly affect relational or psychological resources, operationalised as perceptions of relationship quality and positive affect, there may be other resources that act as mechanisms linking social play and outcomes (these are discussed in Section 5.8). However, some support for the current theorising was shown in that

an increase in relational resources was found to improve negotiation performance. In addition, the finding that high levels of positive affect negatively influenced negotiation performance may be attributable to the fact that excessive positive affect may distract participants from the task at hand. Alternatively, participants may invest too many resources such that these are depleted when the negotiation task commenced. That is, high levels of positive affect may be considered a resource drain if they distract from the task and diminish negotiation performance. This finding also contributes to knowledge of the potential ‘dark’ side of play at work by showing how play can lead to worsened negotiation performance, which is harmful to individuals and organisations.

This research also considers an important interpersonal aspect of play in a work context and provides empirical support for the dual-concern theory of negotiation. Specifically, this research was able to show that increasing levels of concern for both the self and other, as operationalised by an increase in the perceived quality of the relationship between players, resulted in improved joint negotiation outcomes. This result supports arguments made by proponents of this theory (e.g. Pruitt, 1983; Pruitt & Rubin, 1986). It also supports previous research that has shown that friends are effective negotiators (Valley et al., 1995), and also that an integrative agreement is most likely to occur when negotiators trust each other and therefore share important and unique information (Kong et al., 2014) and have a high level of concern for both themselves and for the other party (De Dreu, 2004; L. Thompson, 1990).

These findings also support the argument that positive affect can be shared between negotiators as demonstrated by the high inter-rater agreement statistic (r_{wg}). In this study, r_{wg} for the positive affect rating between pair members was 0.84. This result indicates that each pair member provided a very similar rating of positive affect. Therefore, it can be surmised that affect was shared between pair members. However, these findings do not provide support

for the affect infusion model (Forgas, 1995), which suggests that negotiators in a positive mood are more likely to engage in cooperative negotiation tactics than those in a negative mood (Forgas, 1998). In showing that positive affect negatively impacted negotiation performance, the results contradict the arguments of this theory.

The supplementary analyses can also contribute to the discussion on the impact of different personality traits on negotiation. Although researchers have previously concluded that personality has little influence on negotiation (Bazerman et al., 2000; Rubin & Brown, 1975; L. Thompson, 1990), academics have nevertheless continued to study the potential impact of personality (e.g. DeRue et al. 2009; Dimotakis et al., 2012) and Brett and Thompson (2016) have argued that personality research in negotiation may be making a ‘comeback’. Therefore, studies such as the present one can provide important empirical data to show that personality can indeed affect negotiation.

3.5.6 Empirical Contributions

In terms of empirical contributions, experimental designs in play at work have been under-utilised. This is the first experimental research in the field of play at work, as most of the investigations in this area have been observational or anecdotal. Thus, this research is important and necessary because laboratory experiments can generate results with high levels of internal validity (Scandura & Williams, 2000) and are also more amenable to causal inference.

In addition, this research is the first to both define and operationalise two different types of social play, through the innovative use of LEGO building blocks. It was necessary to identify and implement a social play activity that met the proposed definition of play (as shown by the results of the manipulation check questions), was practical in a research setting and was applicable across cultures and settings. It is hoped that other researchers in the field will use and build on this technique.

These studies are also the first to directly examine the effects of social play on negotiation outcomes and thus contribute to the debate regarding the role of play at work. Systematic research on play and negotiation can also provide managers and organisations with indicators how and when play can be incorporated into the workplace to achieve desired outcomes.

3.5.7 Strengths and Limitations

This research has several aspects that merit recognition. Specifically, it employed a rigorous experimental design in a laboratory setting. This enabled it to exercise a high degree of control over the variables included in the study and to control extraneous variables. Participants were randomly allocated to conditions, which contributes to high internal validity and facilitates the discussion of causal relationships among variables (Bordens & Abbott, 2011). Several features of the experiment also contribute to its level of external validity. Specifically, it employed a large sample size ($n = 270$ individuals/135 pairs), which is particularly difficult in dyadic negotiation research since participant numbers are halved when performing level two (dyadic) analysis (Turel, 2010). The data were collected from several universities across three cities and two countries, which allows this research to make inferences about the cross-cultural applicability of the current findings. The sample comprised students at the undergraduate as well as postgraduate degree levels, it was split almost evenly by gender and participants' age ranged from 18 to 45 years, allowing the representation of a range of demographics.

However, to an extent, the strengths of the experimental nature of this research can also be considered weaknesses. Although negotiation research generally accepts that the intrinsic nature of the task and incentives offered will encourage engagement in experimental tasks (Barry et al., 2004), participants may not have truly committed to or engaged in the experimental activities. For example, without any real 'consequences' to the negotiation task,

participants may not have invested in reaching a negotiation outcome that benefited both parties. Perhaps playing with a real sum of money that was to be divided between the pair would have enabled such participant engagement. Indeed, the genuine experience of emotions, the development of close interpersonal relationships, the significant personal stakes involved and/or the contextualised social relationships that surround ‘real world’ negotiations may not be easily replicable in a classroom/laboratory setting.

Further, this study imposed several situations/scenarios on participants. Students were instructed regarding with whom they should partner and the type of play activity with which they should engage. They were advised about whether instrumental motive was involved and then were required to complete a specific (abstract in nature) negotiation task. In comparison, in ‘real life’, individuals choose the negotiations into which they enter and can often select their negotiation partner. In addition, as discussed above, the effect of motive may be stronger when it is truly experienced by negotiators, as opposed to being merely instructed.

3.5.8 Recommendations for Future Research

As the first to experimentally investigate the impact of social play on negotiation, this research paves the way for further investigation. Future research could consider additional types of play and their impact on negotiation, for example, independent, as opposed to social, play. Research conducted in the field would also be useful in exploring the effects of more organic and natural types of play. Structured social play could also be operationalised using different types of activities or apparatuses. For example, negotiating pairs could engage in an online or computer game before completing the negotiation task. The apparatus through which play exerts its influence may be relevant, particularly for certain generations. It would be interesting to explore whether it was the ‘hands-on’ nature of the LEGO building task that made it effective, or whether the results would carry over to different types of play.

Additional research is also required into the instrumental motive experimental manipulation. Theorising based on previous findings suggests that this is a valid, interesting and important avenue of research. However, the current experimental manipulation was unable to replicate or create what it believed to be a naturally occurring phenomenon. Indeed, this was shown in the manipulation check questions, whereby participants in the instrumental motive condition did not believe that their partner was playing with them for strategic reasons, to any greater extent than those in the non-instrumental motive condition. There may be other ways to manipulate perceived motive for engaging in play, or perhaps it is the very ‘genuine’ nature of the motive that explains its potential negative effect. In that case, a field experiment design might be more effective in detecting the impact of this variable.

Supplementary analyses revealed that highly playful individuals will benefit *more* in a later negotiation task if they engage in a structured social play activity with their negotiation partner. Therefore, the impact of individual-level playfulness and the interaction between state and trait operationalisation of play pose interesting questions for additional research, some of which are addressed in the following chapter. In addition, future research should consider the potential impact of the playfulness levels of each member of a negotiating pair, to determine whether the similarities of negotiators are an influential factor on the relationship between play and negotiation. Similarity-attraction theory could be evoked here, and this idea is explored in the following empirical studies (Chapter 4).

Given that each of the proposed mediators (relationship quality and positive affect) had independent effects on negotiation outcomes, it can be concluded that there must be other mediating processes in operation. Therefore, future research should investigate additional potential mediations in the relationship between social play and negotiation. Other relational resources might include trust, social bonding and/or social cohesion, and indeed, studies have shown that play increases each of these in a work context (Hunter et al., 2010; Roy, 1959;

Sørensen & Spoelestra, 2011). Alternative potential psychological resources might include protection from stress, fatigue and/or burnout (as shown by DesCamp & Thomas, 1993; Hunter et al, 2010; Sørensen & Spoelestra, 2011), or by increasing creativity, divergent thinking, problem-solving ability and/or cognitive flexibility (as shown by Glynn, 1994; Hunter et al, 2010; Jacobs & Statler, 2006; Russ & Wallace, 2013).

Analysing the impact of time on negotiation is an additional avenue for future research. Most of the research on negotiation performance has considered singular, standalone episodes of negotiation, but in the ‘real world’, important negotiations rarely occur over a single episode or one game of golf. The power of social play may rest in its ability to bring negotiators closer together over multiple instances of play (such as a weekly golf game). Therefore, future research can address the associations between play, relationships, emotions and negotiation across episodes and over time.

3.5.9 Conclusion

In the modern workplace, emphasis is placed on increasing productivity and work efficiency, which leads to increased pressure and longer working days. Although most people would be happy to play and have fun during the work day purely for the sake of enjoyment, empirical evidence also supports the benefits of play at work, and studies have shown that play is particularly important to younger generations (Lamm & Meeks, 2009). The presence of play at work is also increasing, as larger corporations, such as Google and Facebook, become known for their playful and ‘fun’ working environments (J. B. Stewart, 2013). However, despite anecdotal support that social play assists in negotiation (e.g. business deals occurring on the golf course), no systematic, empirical or academic examination of the link between play and negotiation outcomes has been conducted.

These studies are the first to define and then experimentally explore the effects of two different types of play activity (structured and unstructured social play) on negotiation. They

also applied COR theory as an overarching theoretical lens, allowing the exploration of the role of resource gain (both psychological and relational) as the mechanisms linking play and outcomes. The ‘dark side’ of play was also explored, by investigating how and when engaging in play with a negotiation partner could potentially worsen negotiation performance. Important interpersonal and instrumental aspects of play in a workplace setting were also considered, specifically, the role of instrumental motive and its potential detrimental effects if detected. Although this study did not find support for the proposed mediators and boundary condition, it is a valuable starting point because it provides evidence for the direct relationship between structured social play and negotiation and raises avenues for future research.

To further explore the role of play at work, and to fully understand its potential effects in a workplace setting, consideration must be given to the role of playfulness as a trait, a different, yet equally as important operationalisation of play. This aspect is touched upon in the supplementary analyses; however, play activities may or may not have the desired impact on work-related outcomes, depending on individual differences in playfulness. Perhaps individuals who are more playful are more likely to realise the benefits of a play activity, and for those who are less playful, play activities may ‘backfire’, particularly if they are appraised as being inauthentic or contrived. The successful (or potential detrimental) effects of play in this context may also depend on the similarity in playfulness levels of the negotiators (i.e. whether a negotiation will be more successful if both parties are highly playful). To address these topics, the empirical studies in Chapter 4 examine the impact of playfulness (as an individual trait) on two work-related outcomes and take a similarity-attraction theory perspective to investigate the effects of the similarity (or dissimilarity) of playfulness levels with others in a workplace setting.

Chapter 4: Empirical Study 2—Playfulness at Work: When Can It Help and When Can It Harm?

Although support was shown for positive main effect of play as an activity on negotiation performance, it is apparent that the role of play in a workplace setting is complex and multifaceted. A different facet of play, playfulness (as an individual difference), may have an important effect on outcomes in an organisational context, as may the similarity in playfulness levels of colleagues at work. The following empirical studies explore these issues, as well as address gaps identified in the literature review chapter. Specifically, the ‘dark side’ of play, novel moderators and mediators, and instrumental and interpersonal aspects of play are examined.

To address the gaps identified in the literature review, the empirical studies in this chapter use a field survey design to investigate play operationalised as a trait, or playfulness, and its impact on two work-related outcomes (in-role performance and counterproductive work behaviours [CWBs]). In doing so, it expands the current research program’s contribution to the field by exploring an alternate operationalisation of play. It also applies COR as an overarching theoretical lens, allowing the exploration of the role of personal resource gain (positive affect and leader–member exchange [LMX]) as the mechanisms linking playfulness and outcomes. This chapter also considers the ‘dark side’ of play by investigating how and when being playful at work can increase CWBs or worsen in-role performance. In addition, it considers important interpersonal and instrumental aspects of playfulness at work by investigating the impact of supervisor levels of playfulness, and in particular, whether ‘matched’ levels of playfulness (i.e. both are highly playful) will enhance the positive effects of playfulness in a workplace setting.

4.1 Introduction

As described in Chapter 1, many organisations consider play as core to their working culture. Thus, as the notion of playing at work increases in popularity, and there is increasing interest in playfulness at work in practice, researchers and organisations have sought to understand how and when playfulness leads to certain work-related outcomes (Mainemelis & Ronson, 2006).

Playfulness as an individual difference has been defined as ‘the predisposition to frame (or reframe) a situation in such a way as to provide oneself (and possibly others) with amusement, humour, and/or entertainment’ (Barnett, 2007, p. 955). If playfulness is considered a trait that remains stable as a characteristic over time (George, 1991), it is important that academics and practitioners understand the potential outcomes of playfulness, to determine when it can help or harm in a workplace setting. It is also important to study playfulness as an individual difference variable because in the organisational literature, personality can be used as a predictor of performance (e.g. Judge et al., 2002). Given the large quantity of time spend at work, the permeating nature of personality and its strong influence on performance, the potential impact of playfulness on outcomes at work is far-reaching and thus is worthy of investigation. Previous research has also suggested that ‘there exists a more general playful personality trait or style that transcends situations, contexts, tasks, and materials’ and that this style persists ‘across a wide variety of situations, processes and tasks’ (Barnett, 1991, p. 52). Given the potential importance and prevalence of playfulness as a trait in adults, this research is appropriate and necessary.

Many hold the traditional view that playfulness is a superfluous trait, serving only to distract from the task at hand (e.g. Dandridge, 1986), and people with this view would argue that playfulness at work should be discouraged. However, playfulness has been shown to have important benefits at the individual, team and organisational levels. Prior studies have

associated playfulness with individual-level benefits including improved job satisfaction (Yu et al., 2007), effective management of challenge and coping with failure (Guitard et al., 2005) and increased work engagement and innovation (Hurmelinna-Laukkanen et al., 2016). On a team level, studies have shown playfulness contributes to group cohesion and increased interactions with others (e.g. Guitard et al., 2005; Yarnal & Qian, 2011). Organisations that encourage a playful and fun approach to work experience decreased turnover (Tews et al., 2014) and higher applicant attraction (Tews et al., 2012), and their employees display increased organisational commitment and involvement (Abramis, 1990). In addition, employees who are playful are more likely to engage in organisational citizenship behaviours, that is, voluntarily going beyond job requirements to help others (Fluegge, 2008; Gin Choi et al., 2013; Lamm & Meeks, 2009), which contributes to an overall more friendly atmosphere in the workplace (Costea et al., 2005; Sørensen & Spolestra, 2011). Certain industries, such as creative industries and the information technology industry, particularly value playfulness (Mainemelis & Ronson, 2006).

Despite these findings, playfulness in adulthood remains a relatively unexplored topic of research, with the majority of studies focusing mainly on the potential evolutionary and developmental benefits of playfulness in children (Barnett, 1990) and animals (Oliveira et al., 2010). Playfulness in adults in a work context has only been rarely studied. Systematic research has not been conducted on the potential mechanisms and boundary conditions linking playfulness to outcomes, with, for example, previous research mainly explaining the relationship between playfulness and outcomes through cognitive mechanisms (e.g. Glynn & Webster, 1992), and failing to consider the potential role of affective or relational mechanisms. As a result, there is limited formal theory or empirical research to draw upon when explaining how and when playfulness can enhance or detract from work outcomes.

Research on playfulness in adulthood is lacking and inconsistent for three main reasons. First, playfulness behaviours are not generally encouraged in adulthood, and thus may be concealed or not considered worthy of investigation (Liebermann, 1977). Second, adults, particularly those at work, are considered serious, rational and logical, and thus, the study of playfulness may be perceived as lacking practical applicability (Shen et al., 2014). Lastly, as with play as an activity, playfulness as a trait has been defined and measured inconsistently (Proyer, 2017). Conceptualisation and measurement problems encountered in this area have largely been due to the fact that studies on playfulness in adults have shown overlap between it and broader personality traits, including extraversion and emotional stability (Proyer & Jehle, 2013), and the methods that have been used to measure playfulness have differed considerably (Van Vleet & Feeney, 2015a).

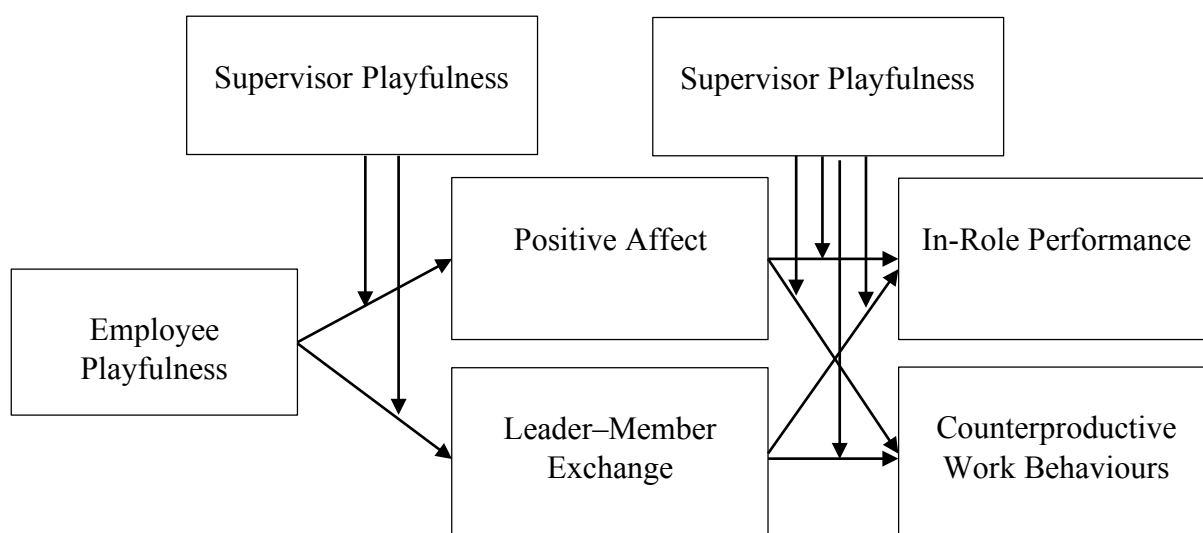
The literature has also previously displayed a biased view towards the positive aspects and has failed to consider the potential ‘dark side’ of playfulness at work. Specifically, the negative effects of playfulness on work-related outcomes has not previously been examined, and therefore, it is not known how or when playing at work may be harmful to the individual or to the organisation.

In this chapter, a theoretical framework, depicted in Figure 5, is proposed and tested, which explains how and when playfulness in adulthood and at work can help or harm. Specifically, this research takes an overarching COR theory (Hobfoll, 1989, 2001) perspective to argue that being playful can increase one’s relational (LMX) and psychological (positive affect) resources, which, in turn, will affect two work-related outcomes—in-role performance and engagement in CWBs. In this way, being highly playful at work, in addition to involving having fun, may also act as a resource, to acquire and manage further resources. This research also takes a similarity-attraction perspective to investigate the conditional indirect effects, specifically, the first- and second-stage moderating role of supervisors’ playfulness, in

proposing that the association between employee playfulness, resources and outcomes may be strengthened (or weakened) depending on supervisors' level of playfulness.

Figure 5

Proposed First- and Second-Stage Moderated Mediation Research Model



This research aims to address the several knowledge gaps raised above and makes important theoretical and empirical contributions. First, this research acknowledges that playfulness in adults at work is an understudied phenomenon and contributes to the literature by responding to calls for systematic empirical research into the measurement, prevalence and outcomes of playfulness in adulthood and in the workplace more specifically (Barnett, 2012; Van Vleet & Feeney, 2015a). This research applies methodological rigour, which contributes to existing knowledge of the measurement of playfulness at work. Enhancing understanding of playfulness and the ways it can be measured may also ‘help researchers identify and learn about the type of people who are most likely to engage in play ... [and can] enable researchers to examine interactions between playfulness and play behaviour in predicting outcomes’ (Van Vleet & Feeney, 2015a, p. 637).

This study also addresses previous inconsistencies and fragmentation in the literature by applying a rigorous overarching theoretical framework (COR theory, supplemented by

similarity-attraction theory) to explore the specific boundary conditions and mechanisms linking playfulness and outcomes. In applying COR theory in this context, this study is the first to integrate the literature on resource regulation and playfulness and is also the first to consider playfulness as a type of personal resource. Studying playfulness at work from a resource regulation perspective also opens the possibility that playing at work can lead to negative consequences because of resource loss, an idea that has not previously been considered. In applying similarity-attraction theory, first- and second-stage moderators (supervisor levels of playfulness) are framed as contingency factors that strengthen (or weaken) the proposed relationships. This theory has not yet been applied in the playfulness literature and adds to current knowledge by considering the impact of matched (or unmatched) playfulness levels between a focal employee and others they may work with.

This research also investigates the potential role of different types of mechanisms linking playfulness and outcomes, rather than the traditional cognitive mechanisms that have been studied in the past. Specifically, two distinct mechanisms are proposed and tested that can be used to explain how playfulness can lead to either positive or negative work-related outcomes. LMX is proposed as one mediator variable, whereby it is argued that playfulness increases LMX, which acts as a relational resource that can improve in-role behaviour but can also lead to CWBs. Positive affect is proposed as an alternative mediator variable, whereby it is argued that playfulness increases positive affect, which acts as a psychological resource that can enhance in-role behaviour but can also increase instances of CWBs.

The current study will also examine the impact of playfulness on work-related outcomes not previously examined. To address the current biased view towards the positive aspects of playfulness at work, this study takes a more balanced perspective and is the first to consider the potential negative effects or ‘dark side’ of playfulness. In doing so, it will expand existing knowledge and add to the current field by examining CWBs as a novel (and harmful)

outcome of playfulness at work. There are also important practical reasons to investigate CWBs, namely, organisations are becoming increasingly concerned with (un)ethical conduct (S. R. Martin et al., 2016). Therefore, it is important to determine the role of playfulness and the proposed psychological mechanisms in this type of behaviour.

In the sections that follow, the relevant research on playfulness, resources and in-role performance and CWBs is reviewed. A model of positive and negative outcomes of playfulness is explicated, which offers hypotheses that speak to the mediating effects of positive affect and LMX and the two-stage moderating effect of supervisor playfulness on two work-related outcomes.

4.2 Theoretical Framework and Hypotheses Development

This research frames the topic of playfulness at work from two theoretical perspectives. It applies COR theory as the overarching theoretical lens to investigate the mechanisms linking playfulness and outcomes, arguing that playfulness can be used to manage resources. Similarity-attraction theory is used to develop the argument surrounding supervisor levels of playfulness as the boundary condition that can strengthen or weaken the proposed mediation relationships.

4.2.1 Conservation of Resources as a Theoretical Framework

Playfulness is a personality variable on which individuals can rate from low to high (Glynn & Webster, 1992), suggesting that most people possess at least some amount of playfulness (Magnuson & Barnett, 2013). The pioneering work of Glynn and Webster (1992) defined playfulness as

a propensity to define (or redefine) an activity in an imaginative, non-serious or metaphoric manner to enhance intrinsic enjoyment, involvement and satisfaction.

[According to the authors,] playfulness is a multidimensional construct, encompassing

cognitive, affective, and behavioural components, which together constitute a continuum along which individuals range from high to low. (p. 85)

More recently, Mainemelis and Ronson (2006) when studying creativity in the workplace, suggested that playfulness is an individual's 'behavioural orientation' (p. 84) to performing an activity in a playful way. Further contributing to this trait perspective, Barnett (2007) suggested that playful individuals 'are typically funny, humorous, spontaneous, unpredictable, impulsive, active, energetic, adventurous, sociable, outgoing, cheerful, and happy, and are likely to manifest playful behaviour by joking, teasing, clowning, and acting silly' (p. 955).

Several theories have been used to explain the outcomes of playfulness at work discussed above. As described in Chapter 2, these include flow theory (Csikszentmihalyi, 1975), the stimulus-seeking perspective (Berlyne, 1960) and the cathartic perspective (Ellis, 1973). As outlined in the review article by Petelczyc and colleagues (2018), while these existing theories are insightful, they are limited in four important ways. First, these have focused mostly on understanding the outcomes of playfulness in the workplace and not on the conditions under which employees are more likely to be playful. Second, these theories have focused primarily on understanding positive outcomes and pay little attention to dysfunctional outcomes. Third, existing theories have provided limited direction about the mechanisms linking playfulness to either positive or negative consequences. Lastly, existing theories have not yet construed play as resource and thus have failed to recognise that play could be used as a resource to generate and maintain additional and current resources.

Taking a COR theory perspective can help to address these issues and identify how and when playfulness will either help or harm. Two key COR theory principles are relevant to the current research. These concern resource gain and resource loss. First, COR theory argues that resources are invested for further resource gain, and to protect or recover from resource

loss. Second, resource loss is more significant than resource gain (Halbesleben et al., 2014). Many propositions follow these principles: Having more resources and initial resource gain leads to future resource gain (resource gain spiral); having less resources and initial resource loss makes one more susceptible to future resource loss (resource loss spiral); and a lack of resources leads to actions defending and conserving remaining resources (Hobfoll, 1988, 1989). With resources being defined as ‘anything perceived by the individual to help attain his or her goals’ (Halbesleben et al., 2014, p. 5), and their value varying according to an individual’s experiences and current situation (Hobfoll, 1988). In the current study, playfulness is considered a personal resource that acts as a resource in itself but can also be invested to gain additional resources and to protect from resource loss.

4.2.2 How Playfulness Affects Two Work-Related Outcomes

4.2.2.1 Mediating Role of Personal Resources

In accordance with COR theory, it is predicted that playfulness will increase two types of personal resources (positive affect, psychological; and LMX, relational), which will then mediate the relationship between playfulness and work-related outcomes.

4.2.2.1.1 Positive Affect

Positive affect reflects the experience of a positive mood and refers to feelings of happiness, joy, excitement and energy (Egloff et al., 2003; Isen & Reeve, 2005). COR theory was used to motivate and inform the choice of positive affect as a key psychological mechanism in this study. As described by Isen and Reeve (2005), people in a positive mood actively monitor their current situation and then deploy their resources after choosing the appropriate behaviour for the situation (Isen & Reeve, 2005). In addition, positive affect builds resources such as problem-solving skills and creative thinking ability, which can be used to improve work-related outcomes (e.g. Isen, 2000; Isen & Reeve, 2005). Lastly, individuals at work often face a range of stressful situations, including important deadlines,

changing objectives and unfamiliar/difficult task requirements. It has been shown that positive affect can co-occur with stressful situations, and that it provides important coping functions, thereby offering protection from future resource loss. In this context, it is proposed that during a stressful period, positive affect may be used to provide psychological reprieve allowing the rejuvenation of diminished resources (Egloff et al., 2003; Lazarus et al., 1980).

The COR theory principle of the *primacy of resource loss* is applicable here. The premise of this argument is that individuals suffer more from resource loss, than they gain from resource generation (Hobfoll, 1988, 1989). Resource loss can harm well-being, leading to burnout (Shirom, 1989), depression (Kessler et al., 1988) and negative physiological outcomes (Melamed et al., 2006). Given this, individuals are motivated to engage in behaviour that prevents resource loss (Halbesleben et al., 2014). Therefore, it is proposed that employees will use playfulness not only to *protect* from the potential loss of affect as resource but also to gain affect as a resource.

Through its very definition, playfulness is inextricably linked to positive affect. Indeed, playfulness has been ‘variously defined as containing, causing, or arising from positive emotions’ (Yarnal & Qian, 2011, p. 67). Barnett (2007) has also explicitly defined that highly playful individuals are cheerful and happy, Glynn and Webster (1992) described playfulness as a tendency to approach activities in such a way as to increase one’s own enjoyment, Starbuck and Webster (1991) described it as a tendency to enjoy activities and Van Vleet and Feeney (2015a) defined playfulness as ‘a disposition to approach activities with the goal of having fun’ (p. 637). In support of the theoretical arguments presented above, several researchers have provided empirical evidence linking playfulness to increased psychological resources. For example, employees who play at work feel they are better able to meet job demands and experience an increased sense of competence (Abramis, 1990). Being playful has also been shown to increase an individual’s positive affect and optimism (Proyer

& Ruch, 2011; Webster & Martocchio, 1992; Yarnal & Qian, 2011). This positive affect can take a variety of forms including ‘happiness, joy, excitement, interest, amusement, serenity, and inspiration’ (Van Vleet & Feeney, 2015a, p. 640). Therefore, it is proposed that individuals who are more playful will also experience greater positive affect at work.

4.2.2.1.2 Leader–Member Exchange

Leader-member exchange theory focuses on the interpersonal relationships between leaders and their subordinates (i.e. members; Dansereau et al., 1975). A central principle of LMX is that differential relationships develop between leaders and various members within their team. These relationships ‘are characterised by the physical or mental effort, material resources, information, and/or emotional support exchanged between the two parties’ (Liden et al., 1997, p. 48). Low LMX relationships are more transactional or economic in nature and are limited to exchanges focused on work completion and formal job requirements. In comparison, high LMX relationships involve greater respect, support, care, and loyalty (Uhl-Bien & Maslyn, 2003), and are characterised by exchanges that extend beyond job requirements (Liden et al., 1997). High LMX relationships are developed with only a few subordinates and facilitate the provision of material (e.g. organisational resources) and non-material (e.g. psychological support) resources (Herman et al., 2012). Leader and member characteristics, performance, ability and competence influence the interactions between a leader and their subordinate and thus act as potential determinants of LMX (Dienesch & Liden, 1986).

COR theory proposes that resources can aid an individual in achieving a goal (Halbesleben et al., 2014). Here, the COR theory principle of *resource investment* is called upon, whereby resources are invested to recover or protect from resource loss, or to gain additional resources (Hobfoll, 2001). A demonstration of this principle is the finding that emotional exhaustion resulted in poorer in-role performance, but increased investment in

organisational citizenship behaviours (Halbesleben & Bowler, 2007). Through directing these behaviours at supervisors and colleagues, resources were returned (through reciprocity) and additional resource loss was halted. In the current study it is proposed that playfulness is used as a resource, invested to create high LMX relationships with one's supervisor, who then, through the norm of reciprocity, will prevent future loss and contribute to resource gain.

The theoretical arguments above are supported by previous empirical findings. For example, previous research has shown that playfulness positively affects interactions with others in a team environment (Yarnal & Qian, 2011). Further, playful individuals are more likely to engage in play as an activity—and research shows that play has a positive impact on bonding and social interaction (Hunter et al., 2010; Sørensen & Spoelestra, 2011), social cohesion (Roy, 1959), relationship development and the development of a sense of solidarity (Locke, 1989). Therefore, it is proposed (Hypothesis 1) that employees who are highly playful will be more likely to engage in play activities and that if they do so with the immediate supervisor, the social benefits of play will result in the development of higher LMX between the supervisor and subordinate.

Hypothesis 1a. Employee-reported playfulness will be directly related to an increase in positive affect

Hypothesis 1b. Employee-reported playfulness will be directly related to an increase in leader–member exchange.

4.2.2.2 Impact of Playfulness on In-Role Performance

This research will focus on the impact of playfulness on two specific work-related outcomes. These are in-role performance and CWBs. These outcomes variables were chosen because of their importance to practitioners as well as academics. First, given that ‘an organisation's profit, effectiveness, and survival’ (Ferris et al., 2010, p. 562) largely depends on the performance of its members, research that shows ways to improve in-performance and

minimise counterproductive behaviours will be valuable and useful to organisations. Second, these are two complex behavioural outcomes, both of which are affected by one's level of resources, through which the role of personality traits plays an important part.

4.2.2.2.1 In-Role Performance

The first work-related outcome variable to be discussed is in-role performance, referring to 'the set of behaviours that are relevant to the goals of the organisation or the organisational unit in which a person works' (Murphy, 1989, as cited in Ferris et al., 2010, p. 561). As outlined above and in the literature review in Chapter 2, being highly playful at work can lead to a range of positive outcomes related to in-role job performance. In particular, playfulness has been related to increased cognitive spontaneity (Glynn & Webster, 1992; Yu et al., 2007), creativity (Guitard et al., 2005; Yarnal & Qian, 2011) and task performance (Bozionelos & Bozionelos, 1999; Glynn & Webster, 1992, 1993; Webster & Martocchio, 1992; Yu et al., 2007). Highly playful individuals are also more likely to be engaged at work (Hurmelinna-Laukkanen et al., 2016) and to display innovative behaviour (Hurmelinna-Laukkanen et al., 2016; Yu et al., 2007). Despite the findings above, previous research has failed to specify how playfulness improves performance. To address this, this study proposes that positive affect acts as a psychological resource and LMX as a relational resource to be used by employees to enhance their in-role performance.

4.2.2.2.2 Positive Affect as a Mediator

According to COR theory, having more resources initially provides greater opportunity to invest those resources and gain additional resources, resulting in a resource gain spiral (Hobfoll, 2001). Positive affect acts as a resource that can be used to improve in-role performance in two ways. First, it is used for further resource gain. If an employee gains positive affect as a result of playfulness at work, this, in turn, will contribute to better performance as more resources become available, allowing the employee to concentrate on

the task at hand and to complete it to the best of their ability. Second, in addition to positive affect acting as a resource to acquire new resources, it can act to prevent resource loss. Specifically, positive affect, gained through playfulness, is used as psychological protection from stress and burnout. As argued by the cathartic theory of play, playfulness can also provide psychological ‘protection’ and an escape from everyday life. This effect occurs because play involves becoming fully absorbed in the activity, allowing employees to feel liberated and uninhibited (Van Vleet & Feeney, 2015b). The relationship between play and psychological resources, such as protection from fatigue and anxiety, has been described in the literature (e.g. Abramis, 1987; Decker, 2012; Hunter et al., 2010; Karl & Peluchette, 2006b). Further, given that play can be used to manage and protect from stress, more resources then become available to complete the task at hand, thereby improving performance.

To provide empirical support for the proposed relationship between positive affect and in-role performance, the findings of several researchers are discussed. It has been found that positive affect increases intrinsic motivation and enhances responsible work behaviour (Isen & Reeve, 2005), improves problem-solving and decision-making ability (Isen, 2000), increases job satisfaction (Kafetsios & Zampetakis, 2008) and creative ingenuity (Isen et al., 1987) and increases the likelihood of engaging in organisational citizenship behaviours (S. Williams & Shiaw, 1999). For a review of the research and findings in this area, see Lyubomirsky et al. (2005). Positive affect has also been shown to have a direct positive effect on in-role performance (Lin et al., 2014).

4.2.2.2.3 Leader–Member Exchange as a Mediator

According to COR theory, those greater starting resources are more likely to accumulate further resources. Therefore, it is argued that employees use playfulness as a resource to invest in their interpersonal relationships to gain additional resources, which

become available to them via high levels of LMX. High LMX is considered an additional resource, which is then reinvested to gain resources that can be directly beneficial to employees' in-role performance, such as access to financial resources, training opportunities or their leaders' social network.

Social exchange theories have previously been drawn upon to explain the outcomes of high LMX relationships. According to the norm of reciprocity, it is expected that another will reciprocate the actions of an individual following a valued exchange (Blau, 1964). Therefore, subordinates may feel they need to work hard to reciprocate the exchanges made by their leader. These positive exchanges may also result in increased liking of one's leader, motivating them to perform well in their job. Subordinates also gain access to resources typically categorised as either economic (e.g. material resources, such as training and development opportunities, better office facilities, a pay rise and a new computer) or socio-emotional (e.g. information resources, such as access to the supervisor's social network; additional information, such as regarding upcoming job opportunities; and/or emotional support; Schriesheim et al., 1999). Then, employees can use these resources to enhance their in-role performance, as they gain knowledge, skills, tools and experience that can assist them in their work.

Empirical research has also supported this theorising. For example, previous research has demonstrated a positive relationship between LMX and in-role performance (e.g. Rockstuhl et al., 2012). Further, meta-analyses of the literature, as described by S. R. Martin et al. (2016), showed consistent positive relationships between LMX, organisational citizenship behaviours and work and task performance. This discussion leads to the second hypothesis:

Hypothesis 2a. Employee-reported playfulness will be indirectly positively related to in-role performance via positive affect.

Hypothesis 2b. Employee-reported playfulness will be indirectly positively related to in-role performance via leader–member exchange.

4.2.2.3 Impact of Playfulness on Counterproductive Work Behaviours

The current study leads the way in investigating the potential negative or ‘harmful’ impact of playfulness and is the first to specifically consider the relationship between playfulness and CWBs. This is important because playfulness resulting in CWBs can cause damage at the individual, team and organisational levels. Personality may exert its influence on CWBs indirectly through people’s attitudes and moods (Cullen & Sackett, 2003). Given this, it is argued that playfulness will influence CWBs through moods and attitudes reflective of positive affect and LMX.

4.2.2.3.1 Counterproductive Work Behaviours

CWBs refers to ‘voluntary behaviour that violates significant organisational norms and in so doing threatens the well-being of an organisation, its members, or both’ (Robinson & Bennett, 1995, p. 556). The four main types of CWBs are production deviance, property deviance, political deviance and personal aggression.

It has been argued that personality traits (i.e. playfulness) may directly influence the occurrence of counterproductive behaviours because they reflect internal biological states that predispose individuals towards relatively stable patterns of behaviour in general (Cullen & Sackett, 2003). However, it has also been proposed that personality traits may exert their influence on CWBs indirectly, through their effect on individual’s attitudes and moods (Cullen & Sackett, 2003). From this perspective, it is argued that playfulness will affect CWBs through moods and attitudes reflective of positive affect and LMX.

4.2.2.3.2 Positive Affect as a Mediator

It is proposed that playfulness will lead to an increase in CWBs via positive affect, because of a drain of personal resources. According to COR theory, those with fewer

resources initially are more likely to experience future resource loss (Hobfoll, 2001). For example, playing excessively can cause initial resource loss (e.g. disliking from colleagues, lack of focus/time spent on work tasks) which may lead to greater subsequent resource loss (e.g. psychological stress, poor task performance). Further, following initial resource loss, one must invest resources to offset further resource loss. However, investment becomes more difficult and people become more defensive in how they invest and protect their remaining resources, resulting in a resource loss spiral (Halbesleben et al., 2014; Hobfoll, 2001).

Playfulness results in CWBs if employees dedicate their resources to non-work tasks and thus do not have sufficient levels of resources to be able to meet the quality and quantity demands of their work. For example, if an employee spends an hour over lunchtime playing basketball, they have physically reduced the time available to them to complete work tasks and may have potentially fatigued their brains and bodies. They may then be distracted and unable to concentrate on or complete their work tasks to an appropriate standard. This could lead to subsequent negative outcomes, such as negative peer evaluations and CWBs, including arriving late to the office to avoid disgruntled co-workers, since the individual must deal with the original resource loss as well as potential future losses.

In addition, previous research has shown that emotions influence intentions to engage in unethical behaviour at work (Lowe & Reckers, 2012), and that positive affect sometimes leads to unfavourable outcomes (e.g. Csikszentmihalyi, 1990; George & Zhou, 2002). The prediction that high positive affect can lead to increases in CWBs can be explained by the notion that individuals seek to maintain their positive mood. That is, individuals may continue to engage in playful behaviours at work if it results in them feeling good and may not return to their work tasks or the job at hand. Therefore, they would be engaging in CWBs associated with time wasting and task avoidance, as they continue to enjoy their playfulness and do not wish to return to serious work tasks or to halt their feelings of happiness.

4.2.2.3.3 Leader–Member Exchange as a Mediator

The COR theory argument regarding resource protection is applicable here. Specifically, individuals seek to protect the resources they have gained. If an employee invests playfulness as a resource into their interpersonal relationship with their supervisor, they will be motivated to protect that relationship (thereby protecting current and potential future resource gain). An employee would not jeopardise their relationship with their supervisor by engaging in CWBs, particularly if this relationship required significant resource investment in the first place.

This study argues that high LMX relationships will decrease or reduce instances of CWBs. This reasoning lies in the definition of a high LMX relationship and in the norm of reciprocity. Specifically, in high LMX relationships, subordinates feel obligated to reciprocate exchanges made by their leader by meeting work demands and not engaging in behaviours that could harm the leader or the organisation. However, in low LMX relationships, subordinates may perceive they have been treated unfairly by their leader and therefore may engage in counterproductive behaviours to harm the leader and organisation. Further, in accordance with COR theory, those in high LMX relationships would not risk their access to additional resources by engaging in CWBs. Therefore, it is expected that LMX will be negatively related to counterproductive behaviours. This argument is supported by findings of a recent meta-analysis that shows a negative relationship between LMX and counterproductive performance in 19 samples (S. R. Martin et al., 2016). Thus, the following hypothesis is proposed:

Hypothesis 3a. Employee-reported playfulness will be indirectly positively related to counterproductive work behaviours via positive affect.

Hypothesis 3b. Employee-reported playfulness will be indirectly negatively related to counterproductive work behaviours via leader–member exchange.

4.2.3 When Playfulness Leads to Certain Work-Related Outcomes

4.2.3.1 *First- and Second-Stage Moderating Roles of Supervisor Playfulness*

This research considers important interpersonal and instrumental aspects of playfulness at work by investigating the impact of supervisor levels of playfulness. Here, similarity-attraction theory (Byrne, 1971) is applied to help us understand the boundary conditions under which playfulness is likely to result in resource gain and to influence work-related outcomes. COR theory argues that individuals invest resources to protect and gain additional resources. In its application, COR theory describes *how* employees use resources, but it cannot explain when this use of resources will lead to certain behavioural outcomes. It is also insular and fails to take into consideration the playfulness levels of those around the focal employee and the impact different playfulness levels may have. Similarity-attraction theory adds to COR theory by describing *when* playfulness will act as a useful resource and how the playfulness levels of others can interact with the focal employee's level to lead to certain outcomes. Specifically, it is argued that an employee's supervisor's level of playfulness (and how similar the two levels are) will alter the strength of the relationship between the independent and proposed mediator (first-stage moderation) and outcome (second-stage moderation) variables.

Similarity-attraction theory argues that individuals are attracted to others who are similar, rather than dissimilar, to themselves (Byrne, 1971). This theory has not previously been applied in this field, but it can extend the arguments of COR theory presented above. Borrowing concepts from cognitive dissonance, social comparison and classical conditioning theories, this theory argues that individuals favour others who reinforce their existing thoughts and attitudes, resulting in positive feelings and relationships (Montoya et al., 2008). In addition, the trait of playfulness is more likely to be expressed if the work context allows it, which can occur through having a supervisor who is also highly playful and encourages and

facilitates the expression of this trait, thus creating a playful atmosphere at work. Further, a highly playful employee is more likely to gain psychological as well as relational resources if they can express their traits, or act in ways that align with their playful nature.

Personality traits are expressed in reaction to trait-relevant cues and result in intrinsic reward (Tett et al., 2013). In the case of this research, if an employee is highly playful and so is their supervisor, this creates a context of trait-relevant cues (e.g. the employee's supervisor initiates a game over lunch and the employee is likely to participate). This results in intrinsic reward for them both, as well as increases in psychological and relational resources for the employee. Conversely, if the employee is highly playful, but their supervisor is not, there will be less cues inviting the employee to express their playfulness or to behave in a playful manner. That is, a supervisor who is low on playfulness is less likely to initiate a play behaviour with the employee, and the employee would be unlikely to initiate one themselves, knowing it was not compatible with the supervisor's low level of playfulness.

The incorporation of extrinsic rewards into the expression of personality traits is also considered. A strong situation is one in which rewards and punishments for expressing traits overpower its intrinsic value (Tett et al., 2013). That is, if a highly playful employee's supervisor is also highly playful, this will create a strong situation in which playfulness expression is rewarded. If the supervisor is low in playfulness, playfulness will not be rewarded and may even be punished. Linking back to COR theory, rewards may include relational, psychological, economic or socio-emotional resources or even increased ratings of in-role performance. By contrast, punishment may include decreased access to relational, psychological, economic and socio-emotional resources, or perceptions of CWBs. Therefore, highly playful people will benefit most when trait-expressive behaviours are appreciated by those in a position (i.e. one's supervisor) to offer valued extrinsic rewards in the form of access to resources (Tett et al., 2013).

It is also important to consider how a given personality trait (and its associated trait-expressive behaviour) can influence perceptions and evaluations of work-related outcomes. For example, if an employee is highly playful but their supervisor is not, their supervisor may perceive that the subordinate is ‘slacking off’ or ‘joking around’ too much and not getting their work done. This would have a negative impact on affect and/or LMX, and the supervisor might report poor in-role employee performance and higher rates of counterproductive behaviours. However, if the supervisor is also playful and views play behaviour at work as a positive and valuable exercise, this would increase positive affect and LMX; the supervisor may also view the in-role performance of the employee as better and rate them lower on CWBs. The issue in this case is that in-role performance and CWBs are measured subjectively by the supervisor, and these performance ratings might be positively or negatively influenced based on compatibility or incompatibility of their playfulness levels, or by the extent to which the supervisor believes it is appropriate to engage in play at work.

Similarity-attraction theory can be used to describe when employee and supervisor levels of playfulness will interact and lead to certain outcomes. Specifically, there will be a stronger relationship between playfulness, resources and outcomes when both supervisor and subordinate are similar in their levels of playfulness. It is also expected that highly playful employees will be more likely to express their playfulness if their supervisor is also playful. When an employee and supervisor are both high in playfulness (or are both low), the employee is more likely to gain positive affect (psychological resource) and LMX (relational resource), which, in turn, can benefit in-role performance and diminish CWBs. Conversely, if the supervisor and subordinate are different in their levels of playfulness (i.e. one is high and one is low), the employee is less likely to gain these resources, which, in turn, can influence behaviour.

This study predicts a stronger relationship between employee-reported playfulness and in-role performance via psychological and relational resource gain if the supervisor is high (compared with low) on playfulness (first-stage moderation). That is, employees will be more likely to gain resources if their supervisor and they are both high in playfulness.

In addition, this study predicts a weaker relationship between employee-reported playfulness and in-role performance via psychological and relational resource gains if the supervisor is high (compared with low) on playfulness (second-stage moderation). That is, employees will be less likely to transfer resource ‘gain’ into improved in-role performance if their supervisor is high in playfulness. Thus, the following hypothesis is proposed:

Hypothesis 4a. The conditional indirect positive effects of employee-reported playfulness in predicting in-role performance via positive affect will be stronger under high supervisor-reported playfulness (first stage) and weaker under high supervisor-reported playfulness (second stage).

Hypothesis 4b. The conditional indirect positive effects of employee-reported playfulness in predicting in-role performance via leader–member exchange will be stronger under high supervisor-reported playfulness (first stage) and weaker under high supervisor-reported playfulness (second stage).

It is predicted that a stronger relationship will exist between employee-reported playfulness and CWBs, via psychological and relational resource gains, if the supervisor is high (compared with low) on playfulness (first-stage moderation). That is, an employee will be more likely to gain resources if both are high in playfulness.

Further, it is predicted that there will be a stronger relationship between employee-reported playfulness and CWBs, via psychological and relational resource gain, if the supervisor is high (compared with low) on playfulness (second-stage moderation). That is, employees will be more likely to engage in CWBs as a result of psychological resource gain

(i.e. a stronger positive relationship), and will be less likely to engage in CWBs (i.e. a stronger negative relationship) if their supervisor is also high in playfulness, which leads to the following hypothesis:

Hypothesis 5a. The conditional indirect positive effects of employee-reported playfulness in predicting counterproductive behaviours via positive affect will be stronger under high rather than low supervisor-reported playfulness both at the first and second stages.

Hypothesis 5b. The conditional indirect negative effects of employee-reported playfulness in predicting counterproductive behaviours via and leader–member exchange will be stronger under high rather than low supervisor-reported playfulness both at the first and second stages.

In this chapter, these proposed hypotheses were examined in three independent studies. First, Study 2a surveyed employee–supervisor dyads in the Philippines and investigated the relationship between playfulness and positive affect as well as the role of positive affect as the proposed psychological mechanism linking playfulness and in-role performance and CWBs. Second, Study 2b used crowdsourcing to survey 189 employee–supervisor dyads in the United States, and it expanded on Study 2a by investigating the role of LMX as well as positive affect as the proposed mechanisms linking playfulness and in-role performance and CWBs. Study 2b also introduced supervisor playfulness as a potential boundary condition. Lastly, Study 2c collected data from a larger sample (397 employee–supervisor dyads) in a different cultural context and tested the overall proposed research model.

4.3 Study 2a

Study 2a used a field survey design and examined the direct relationship between playfulness and positive affect and also tested positive affect as the proposed psychological

mechanism linking playfulness and supervisor-rated in-role performance and CWBs (Hypotheses 1a, 2a and 3a).

4.3.1 Method

4.3.1.1 Sample and Procedure

For Study 2a, survey data were collected from students enrolled in an MBA course in the Philippines. A total of 607 students were approached and 427 employee–supervisor matched surveys were received, representing a response rate of approximately 70%. Employees completed measures of demographic characteristics, playfulness and positive affect. The dependent variables—in-role performance and CWBs—were rated by the participants' immediate work supervisor. Participants completed questionnaires containing identity codes that enabled employee ratings to be matched with those of the corresponding supervisor. All participants were assured of confidentiality and were informed that they could withdraw from the study at any point in time.

The mean age of the employee sample was 29 years, and most participants were female (64% female and 36% male). Most of the sample (71.4%) had been working with their current organisation for up to 5 years and were employed on a permanent/regular basis (71.8%). Employees worked in a range of job types, including customer service (17.1%), accounting/finance (11%) and information technology (9.4%). A slight majority of supervisors were female (53%), and almost half (49.8%) were aged between 20 and 35 years. Over half of the supervisor sample (54.1%) had been working with their current organisation for 1–10 years.

4.3.1.2 Measures

All surveys were written in English as it is the language predominantly spoken in education and work contexts in the Philippines (Bernardo, 2004).

4.3.1.2.1 Playfulness

Playfulness was measured using Barnett's (2007) APS. This scale is comprised of 15 descriptors that load onto four factors (gregarious, uninhibited, comedic and dynamic), and has been used previously in the literature on play in adulthood (e.g. Barnett, 2012; Magnuson & Barnett, 2013; Proyer, 2017; Proyer & Rodden, 2013; Qian & Yarnal, 2011). The reliability of the scale in previous work is $\alpha = .89$, and studies have shown that it displays convergent validity with other playfulness questionnaires (e.g. the OLIW, Proyer, 2017; SMAP, Proyer, 2012; APS, Glynn & Webster, 1992). Participants rated themselves on each item on a scale from 0 (*very little*) to 9 (*a lot*) on their levels of characteristics such as 'clowns around', 'jokes/teases', 'outgoing' and 'spontaneous'. Scores across the items were added, and the mean was calculated to give each participant a global 'playfulness' score. The decision was made to use an overall score (rather than focus on the individual factors) to capture a more encompassing definition of playfulness. In this sample, the Cronbach's alpha of this scale was .93.

4.3.1.2.2 Positive Affect

Positive affect was measured using the PANAS Scale (Watson et al., 1988). This scale is widely used and has been shown to be internally consistent, with Cronbach's alphas ranging above 0.80 (Anderson & Thompson, 2004), and to be consistent over time (Watson et al., 1988). The scale had 10 items, and participants rated themselves from 1 (*very slightly or not at all*) to 5 (*extremely*) on a list of feelings and emotions, including 'interested', 'excited', 'inspired' and 'enthusiastic'. In this sample, the Cronbach's alpha of this scale was .92.

4.3.1.2.3 In-Role Performance

In-role performance was rated by the employees' supervisor and was measured using the scale developed by L. J. Williams and Anderson (1991). Responses to four items were given on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Example items include ‘This employee fulfils all the responsibilities specified in his/her job description’, ‘This employee conscientiously performs tasks that are expected of him/her’ and ‘This employee sometimes neglects aspects of the job that he/she is obligated to perform’ (reverse coded). In this sample, the Cronbach’s alpha of this scale was 0.95.

4.3.1.2.4 Counterproductive Work Behaviours

CWBs were also rated by the employees’ supervisor and were measured using the 14-item measure developed by Aquino et al. (1999). Example items include this employee ‘intentionally arrived late for work’ and ‘took undeserved breaks to avoid work’. Supervisors rated their agreement with each statement on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Although this scale was originally developed as a self-report measure, it has since been adapted to a supervisor-rated format, and in previous research, it has displayed a reliability coefficient of 0.65 (Bordia et al., 2008). The overall scale, encompassing two sub-dimensions (organisational and interpersonal deviance), was included in the analyses for a broader perspective on the potential negative outcomes of playfulness in a work context. In this sample, the Cronbach’s alpha of this scale was 0.93.

4.3.1.3 Control Variables

4.3.1.3.1 Demographics

Information was collected on demographic variables, including gender and age. These variables were controlled for to rule out the possibility that they were contributing to the results found. Participants were asked to select their gender as either ‘male’ or ‘female’ (coded as 0 = male, 1 = female) and to provide their age in years, as of their last birthday. Tenure was measured categorically from less than 1 year, 1–5 years, 6–10 years, 11–15 years, 16–20 years, 21–25 years, 26–30 years and over 30 years.

Although it has been found that there is limited association between playfulness and gender (e.g. Barnett, 2007; Glynn & Webster, 1992, 1993) and age (Glynn & Webster, 1992, 1993), these variables were still controlled for to ensure they did not affect the results.

4.3.1.3.2 Personality

Participants' personality traits were measured using the 44-item Big Five Inventory (John et al., 1991) and included as control variables. The alpha reliabilities of this scale have ranged from 0.75 to 0.90 and average above 0.80; three-month test–retest reliabilities have a mean of .85; and validity evidence includes convergent and divergent relations with other Big Five instruments as well as with peer ratings (John & Srivastava, 1999).

Participants rated themselves on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*) on items such as 'is talkative' (E), 'tends to find fault with others' (A, reverse coded), 'does a thorough job' (C), 'is depressed, blue' (N) and 'is original, comes up with new ideas' (O). In this sample, the following psychometric properties were observed for the Big Five personality traits: extraversion ($M = 4.66$, $SD = .78$, $\alpha = .66$), agreeableness ($M = 5.45$, $SD = .74$, $\alpha = .72$), conscientiousness ($M = 5.16$, $SD = .76$, $\alpha = .76$), neuroticism ($M = 3.38$, $SD = .85$, $\alpha = .74$) and openness to experience ($M = 5.15$, $SD = .70$, $\alpha = .66$).

To rule out alternative explanations, the Big Five personality traits (extraversion, agreeableness, conscientiousness, neuroticism and intellect/imagination) were controlled for. This was because, first, previous research has shown relationships between playfulness and each of the Big Five dimensions. Specifically, Barnett (2012) showed an association between extraversion and playfulness in men and women, and low conscientiousness was associated with playfulness in men. In addition, extraversion and agreeableness have been shown to affect engaging in play and having fun (Aldag & Sherony, 2001; Barnett, 2012; Karl et al., 2007; Lamm & Meeks, 2009).

Previous research has also found that personality (particularly conscientiousness) affects job performance and may act as a predictor of CWBs. Indeed, meta-analytic evidence from the Big Five literature has clarified that some personality dimensions show consistent relationships to CWBs and in-role performance (Barrick & Mount, 1991; Cullen & Sackett, 2003; Hurtz & Donovan, 2000).

4.3.2 Results

4.3.2.1 Data Screening and Cleaning

Before performing the statistical analyses, all negatively valenced items were re-coded and missing data were checked. There were some cases of missing data; however, since there was no pattern to the missing data and it represented less than 5% of total responses, the decision was made to replace missing values with the series mean (Roth, 1994).

The assumptions of normality, skew and kurtosis were checked visually using graphical methods, including probability Q-Q plots and histograms. The Q-Q plots showed an acceptable level of normality, and there were no outliers. However, it was found that data for this sample were skewed: positive affect (skewness statistic = $-.97$) and in-role performance (skewness statistic = -1.37) were negatively skewed, CWB was positively skewed (skewness statistic = 1.85) and playfulness was relatively normally distributed but with a slight negative skew (skewness statistic = $-.39$). Log and square-root transformations were applied to these variables; however, these did not dramatically improve the variables. The same pattern of results was found when using transformed and non-transformed variables. Given this, and the large sample size, the decision was made to analyse the variables in their original form to ease interpretation. The Preacher and Hayes (2004) approach to mediation was used, and analyses were conducted using the PROCESS macro (Model 4) for SPSS (Hayes, 2013).

It may be argued that owing to the sample size, it would be appropriate to perform a latent Structural Equation Model (SEM) to analyse this data, and indeed, this is also a topic of

debate in the literature (e.g. Hayes et al., 2017). However, the PROCESS macro, a regression-based approach, was used for the following reasons. First, a regression-based approach is more appropriate when estimating a larger number of parameters (Westland, 2010). Second, PROCESS is straightforward to use and has become the method of choice in many disciplines (Hayes & Rockwood, 2020). Lastly, PROCESS was chosen in this instance because it has been shown to often produce the same results as an SEM program (Hayes et al., 2017, Hayes & Rockwood, 2020).³

4.3.2.2 Hypotheses Testing

Before conducting the mediation analysis, descriptive statistics were analysed and a correlation matrix was produced to ensure that all variables were related to each other. Descriptive statistics and bivariate correlations are shown in Table 6. As can be observed in the correlation table, playfulness was significantly positively related to positive affect ($r = .43, p < .01$), which, in turn, was significantly positively related to supervisor-reported in-role performance ($r = .25, p < .01$) and significantly negatively related to supervisor-reported CWBs ($r = -.19, p < .01$).

³ As a robustness check, the mediation analyses were also performed using SEM (through SPSS AMOS software) and the pattern of results was the same.

Table 6*Study 2a Descriptive Statistics and Bivariate Correlations*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Gender	-	-	-										
2. Age	29.35	8.30	.11*	-									
3. Extraversion	4.66	.78	-.10*	-.05	(.66)								
4. Agreeableness	5.45	.74	.07	.09	.17**	(.72)							
5. Conscientiousness	5.16	.76	.04	.24**	.16**	.58**	(.76)						
6. Neuroticism	3.38	.85	.08	-.12*	-.21**	-.51**	-.61**	(.74)					
7. Openness to Experience	5.15	.70	-.10*	-.01	.27**	.37**	.30**	-.18**	(.66)				
8. Playfulness	6.06	1.38	-.07	-.04	.51**	.21**	.08	-.13**	.30**	(.93)			
9. Positive Affect	4.06	.66	-.04	.08	.30**	.37**	.33**	-.25**	.30**	.43**	(.92)		
10. In-Role Performance	5.90	1.11	.01	.16**	.10*	.14**	.20**	-.18**	.11*	.09	.25**	(0.95)	
11. Counterproductive Work Behaviours	1.84	0.91	-.01	-.05	-.08	-.16**	-.18**	.16**	-.05	-.03	-.19**	-.41**	(0.93)

Note. Cronbach alpha reliabilities are reported along the diagonal.

* $p < .05$; ** $p < .01$.

Then, a confirmatory factor analysis was conducted to evaluate the relationships between manifest indicators (i.e. observed measures or scale items) and latent variables (i.e. factors). A confirmatory factor analysis allows us to determine whether manifest indicators can be reduced to a smaller number of latent factors, which represent underlying broader theoretically derived concepts. First, a four-factor model was tested, including the following latent constructs: employee playfulness, employee-rated positive affect, supervisor-rated employee in-role performance and supervisor-rated employee CWBs. Each manifest indicator included an error term with a weighting of 1. One manifest indicator of each proposed latent construct was given a regression weight of 1. A two-way covariance relationship was specified between all latent factors.

Given the large number of scale items (and therefore the large number of parameters to be estimated) and potential underlying multidimensional structure of the variables, item parcelling was applied. Although item parcelling is a somewhat controversial approach (Meade & Kroustalis, 2005), it has become more popular among management researchers in recent years (L. J. Williams & O'Boyle, 2008). For additional discussion on the parcelling approach, see Little et al. (2002), Matsunaga (2008) and Marsh et al. (2013). Parcelling occurs when individual scale item responses are combined into subscale 'parcel scores' prior to analysis (typically through summing or averaging item responses), which are then included as the lowest-order indicator variable in the confirmatory factor analysis (Bandalos & Finney, 2001). Item parcelling has a range of advantages, including increased reliability, higher communality and better model fit (Meade & Kroustalis, 2005). Moreover, items are more likely than parcels to be non-normally distributed, which may violate SEM assumptions (L. J. Williams et al., 2009).

The parcelling of items was informed by theoretical and empirical means. At the highest level, items were parcelled according to theoretically derived sub-dimensions.

Specifically, Barnett's (2007) APS has four sub-dimensions (gregarious, uninhibited, comedic and dynamic), and the CWB scale has two sub-dimensions (organisational and interpersonal deviance; Aquino et al., 1999). Therefore, it is theoretically justifiable to 'parcel' scale items according to these sub-dimensions (note that a theoretical reason for parcelling items is essential; Little et al., 2013). To capture the second-order factors of these dimensions and to identify sub-dimensions of the positive affect and in-role performance subscales, factor analysis was used to identify the items to be allocated to parcels, as performed elsewhere in the literature (see Restubog et al. 2010; Wang et al., 2018). Specifically, items with the highest and lowest factor loadings for each latent construct were combined, then the second highest and lowest and so on. This resulted in the following: employee playfulness comprising four parcels (two items, four items, five items and four items), positive affect comprising three parcels (three, three and four items), in-role performance comprising two parcels (two items each) and CWBs comprising six parcels (i.e. the interpersonal deviance subscale was divided into three second-order parcels of two items each, and the organisational deviance subscale was divided into three second-order parcels of two items, three items and three items). An aggregated mean was calculated for each parcel.

The results showed that the hypothesised four-factor model has good fit to the sample data based on commonly accepted thresholds, ($\chi^2 = 254.21$, $df = 83$, $p = .00$). It was noted that the chi-square test was significant; however, this index of model fit it is rarely used in isolation in applied research because it is highly sensitive to sample size (T. A. Brown & Moore, 2012). Therefore, additional goodness-of-fit indices, including the comparative fit index (CFI), root mean square error of approximation (RMSEA) and standardised root mean residual (SRMR), were used to evaluate the model fit (CFI = .96, RMSEA = .06 and SRMR = .04). According to L. J. Williams et al. (2009), a model can be considered a good fit if the CFI value exceeds 0.95 (which in this case, it does) and/or the RMSEA is below 0.08

(which in this case, it is); further, some researchers recommend using both indices together when evaluating a model. In addition, the SRMR as an indicator of model fit is increasing in popularity among management researchers, and a value of less than 0.10 for this measure is considered to indicate good fit (which in this case, it is). The estimates of all regression weights were significant at the $p < .001$ level, and the standardised regression weight of most items was above 0.70 (the range was 0.68 to 0.97). Since no items were less than 0.30, none was considered for deletion.

To determine discriminant validity, one-factor and three-factor alternative models were also tested. In the one-factor model, each manifest indicator was loaded onto a single factor. This included four employee playfulness ‘parcel’ indicators, three employee positive affect ‘parcel’ indicators, two supervisor-rated in-role performance ‘parcel’ indicators and six supervisor-rated CWB parcel indicators. The results showed that the one-factor model has poor model fit ($\chi^2 = 2622.19$, $df = 89$, $p = .00$, CFI = .46, RMSEA = .23 and SRMR = .22). Given these statistics, the proposed four-factor model is a superior fit for the data.

In the three-factor model, manifest indicators were loaded onto three factors: employee playfulness, positive affect and workplace behaviours (comprising in-role performance and CWBs). This model also included four employee playfulness ‘parcel’ indicators, three employee positive affect ‘parcel’ indicators and eight workplace behaviour ‘parcel’ indicators (comprising two supervisor-rated in-role performance parcel indicators, and six supervisor-rated CWB parcel indicators). The results showed that the three-factor model has poor model fit ($\chi^2 = 853.15$, $df = 85$, $p = .00$, CFI = .84, RMSEA = .15 and SRMR = .08).

Chi-square difference tests were performed between the four-factor base model and the two alternative models. Comparing the base model with the one-factor model, the difference in degrees of freedom = 6 and the chi-square difference = 2367.98. Examining a

chi-square distribution table, $Df = 6$ and critical value at $p = .001$ is 22.46. The obtained chi-square difference is greater than the critical value; therefore, it is significant. Comparing the base model with the three-factor model, the difference in degrees of freedom = 2 and the chi-square difference = 598.94. Examining a chi-square distribution table, $Df = 2$ and critical value at $p = .001$ is 13.82. The obtained chi-square difference is greater than the critical value; therefore, it is significant. Given these statistics, the proposed four-factor model has a better fit than the alternative models.

4.3.2.2.1 Hypothesis 1a

Hypothesis 1a predicted that playfulness would be positively related to positive affect. A simple linear regression was used to test the main effect of playfulness in predicting positive affect, and a significant regression equation was found, $B = .21$, $F(1, 425) = 97.18$, $p = .00$, with an R^2 of .19. Therefore, *Hypothesis 1a was supported*.

4.3.2.2.2 Hypothesis 2a

Hypothesis 2a proposed that employee-reported playfulness would be indirectly related to in-role performance via positive affect. The simple mediation model was assessed using the bootstrap procedure developed by Preacher and Hayes (2004, 2008). Analyses were conducted using PROCESS Model 4. Bootstrapping analyses using 5,000 bootstrap re-samples was used, and mediation is said to have occurred (and is significant) if the 95% confidence interval for the indirect effect does not contain zero (Preacher & Hayes, 2004).

The covariates of age, gender and Big Five personality traits were controlled for in all analyses. However, supplementary analyses were also conducted without any control variables and the results did not change. In addition, playfulness predicted positive affect over and above the contribution of control variables. It was found that the P value for all F -tests of overall significance was less than .05 (see Table 7 below), and therefore, the null-hypothesis is rejected and it is concluded that the models provide a better fit than the intercept-only

model. It was also found that the R^2 value was significantly different from zero. Results based on 5,000 bootstrapped samples indicate that the direct effect of employee-rated playfulness on supervisor-rated in-role performance was not significant, *direct effect* = $-.02$, $SE = .05$, 95% CI $[-.12, .07]$. Playfulness had a significant indirect effect on in-role performance through positive affect, *indirect effect* = $.06$, Boot Standard Error (SE) = $.02$, 95% CI $[.03, .10]$.

Therefore, *Hypothesis 2a was supported*. The results also showed that positive affect was a significant positive predictor of in-role performance ($B = .37, p = .00$).

4.3.2.2.3 Hypothesis 3a

Hypothesis 3a proposed that employee-reported playfulness would be indirectly related to CWBs via positive affect. The covariates of age, gender and Big Five personality traits were controlled for. The Model Summary statistics revealed that the P value for all F -tests of overall significance was less than $.05$ (see Table 7). It was also found that the R^2 value was significantly different from zero. Results based on 5,000 bootstrapped samples indicate that the direct effect of employee-rated playfulness on supervisor-rated CWBs was not significant, *direct effect* = $.06$, $SE = .04$, 95% CI $[-.02, .14]$. Playfulness had a significant indirect effect on CWBs through positive affect, although this was not in the expected direction, *indirect effect* = $-.04$, Boot SE = $.01$, 95% CI $[-.07, -.01]$ ⁴. The results also showed that positive affect was a significant negative predictor of CWBs ($B = -.24, p = .00$).

Therefore, *Hypothesis 3a was partially supported*.

⁴ See also Table 11 below for summary of direct and indirect effect statistics for Studies 2a, 2b and 2c.

Table 7*Study 2a: Model Summary*

Model	<i>R</i>	<i>R</i> ²	MSE	<i>F</i>	<i>P</i>
Outcome: Positive Affect	.56	.31	.30	22.84	.00
Outcome: In-Role Performance	.33	.11	1.13	5.34	.00
Outcome: Counterproductive Work Behaviours	.26	.07	.81	3.17	.00

4.3.3 Discussion

The results of Study2a supported Hypothesis 1a and 2a and partially supported Hypothesis 3a. It was found that employee-reported playfulness was directly related to positive affect and was indirectly related to in-role performance via positive affect. These relationships were in a positive direction. That is, playfulness increased positive affect, which, in turn, improved in-role performance. Here, it is argued that playfulness acts as a resource, which is invested to protect and gain additional resources. In this case, an employee invests playfulness to increase levels of positive affect (a psychological resource), which, in turn, is reinvested and used to improve in-role performance.

However, although the indirect relationship of playfulness on CWBs via positive affect was significant, this was found to occur partially in the opposite-to-expected direction. It was hypothesised that playfulness would increase positive affect (this assertion was supported) and that positive affect would increase instances of CWBs, due to a drain of resources. It was predicted that employees who were high in playfulness and positive affect may ‘drain’ their resources if they dedicate these to non-work tasks (seeking to maintain their levels of happiness through play activities, such as lunchtime basketball) and thus do not have sufficient levels of resources to be able to meet the quality and quantity demands of their work. However, this was not the case—rather, an increase in positive affect reduced ratings of CWBs. This reduction may have occurred because instead of playfulness and positive affect

acting as resource ‘drains’, they were reinvested to *avoid* or *minimise* CWBs, and therefore, as above, should instead be considered resource ‘gains’.

However, this study has some limitations, which offers the opportunity to build on these findings. More research is required to further explore the relationship between playfulness, positive affect and CWBs because the results did not fully support the hypothesised relationships. This research would benefit from the examination of an additional mediator, specifically one of a relational nature, to extend the findings on the relationship between playfulness, resource and outcomes. The introduction of a boundary condition can also extend these findings by considering *when* playfulness will have a positive or negative impact. Investigating the role of supervisor levels of playfulness will also allow us to explore important intrapersonal aspects of playfulness. In addition, are these findings generalisable to a wider population? The sample used in Study 2a consisted of MBA students from the Philippines, studying part-time. It could be argued that since these individuals are pursuing postgraduate qualifications, they may already be better performers at work than others. Therefore, it would be useful to conduct this research in a Western, solely working population.

4.4 Study 2b

Study 2b extended the findings of Study 2a, first, through constructive replication, whereby the same relationships as above were tested in a different population. A different outcome measure (for in-role performance) was also used. Constructive replication is under-utilised in the organisational behavioural sciences (Köhler & Cortina, 2019), and this is a limitation of past research that this study aimed to address. In addition to examining the relationships between playfulness, positive affect and work outcomes (Hypotheses 1, 2a and 3a), Study 2b offered an empirical extension to Study 2a by sampling from a different population, specifically a Western (from the USA), full-time working population. The sample

was recruited using CloudResearch, a crowdsourcing website similar to MTurk. Recruiting participants using this method offers several benefits, including easy access to a large, stable and diverse participant pool (Berinsky et al., 2012; Christenson & Glick, 2013; Mason & Suri, 2012). Study 2b further extended the findings of Study 2a by also investigating the role of LMX, as the proposed relational mechanism linking playfulness and outcomes (Hypotheses 2b and 3b). This allowed further exploration of the relationship between playfulness, resource regulation and outcomes. Study 2b also introduced supervisor playfulness as a potential boundary condition both at the first and second stages (Hypotheses 4a, b and 5a, b), and in doing so, investigated an important interpersonal aspect of playfulness at work.

4.4.1 Method

4.4.1.1 Sample and Procedure

Participants were recruited through CloudResearch, a crowd-funding site associated with MTurk and TurkPrime. Using a crowdsourcing site such as this is becoming an increasingly popular method of participant recruitment in the social science field (Stritch et al., 2017). This method of recruitment provides many opportunities, and empirical findings have shown that this is a valid and effective method of data collection (Buhrmester et al., 2011; Paolacci, & Chandler, 2014). For example: It provides access to a large pool of diverse participants; it is affordable and cost-effective; it gives the researcher control to selectively recruit participants (e.g. based on certain demographic characteristics or employment factors); participants are generally diligent because of the incentive structure of such sites; it has technical advantages, that is, it provides researchers with a platform to conduct research outside the bounds of a physical laboratory or elsewhere online (e.g. cross-cultural, longitudinal studies); and it facilitates mitigating some experimenter bias and social desirability because of the lack of face-to-face contact (Paolacci & Chandler, 2014; Shank, 2016). Further, the results of experimental studies conducted online have been shown to

parallel those of the same studies conducted with undergraduates in a laboratory setting (Mason & Suri, 2012). This method of recruitment was also chosen because it allowed the specification of US, full-time working employees, thereby extending the findings of Study 2a by testing the proposed relationships in a Western context.

It was specified that all participants had to be in the United States, currently employed and working a minimum of 26 hours per week. From the 365 participants invited to complete the Time 1 survey, 224 acceptable responses were received. Responses were rejected if (a) the survey was not completed (83 surveys), (b) details for the employees' supervisor were not provided (35 surveys) and (c) if the participant failed the integrity checks (e.g. the same response was provided for all answers; the employee had already completed the survey; 23 surveys). Therefore, participants had to meet each of these criteria for their responses to be included in the final analyses.

Each respondent's supervisor was contacted at Time 2, and 35 supervisors did *not* submit a complete response. Therefore, in total, 189 employees and their immediate supervisors completed a survey across two measurement periods, approximately one month apart. At Time 1, employees reported their demographic characteristics, playfulness, positive affect and LMX, while their immediate supervisor reported own demographic characteristics and playfulness (predictor variables). At Time 2, supervisors provided behavioural ratings of their employees' in-role performance and CWBs (outcome variables). The measures of predictor and outcome variables were separated, and a co-rater was used, to minimise the effects of common method variance (Podsakoff et al., 2003). Participants were only invited to complete the Time 2 questionnaire if they had completed the Time 1 questionnaire. Responses at Time 1 and Time 2 were matched using unique ID codes created by participants to ensure that the same respondent completed the questionnaire at both time points. Integrity checks included assessing how long each respondent spent on the survey, asking attention check

questions and ensuring each participant could only respond to the survey once (which was enforced through blocking identical IP addresses).

To test for sampling bias (both sample selection and attrition biases) between participants who completed Time 1 and Time 2 surveys (thereby ruling out that participants and non-participants were somehow systematically different; Cuddeback et al., 2004), correlation analyses were used to identify selection biases in the demographic profiles of both samples. Specifically, the intra-class correlation coefficient (ICC) was examined. An ICC below 0.05 indicates that the two samples are similar and that variation in the relevant demographics is not due to group membership (i.e. participants and non-participants; Maas & Hox, 2005). No significant differences were found when comparing both employee and supervisor gender, age and tenure (employee gender, ICC = .00; employee age, ICC = .05; employee tenure, ICC = .01; supervisor gender, ICC = .00; supervisor age, ICC = .00; supervisor tenure, ICC = .00). To test the robustness of these findings, chi-square tests were also conducted. The outcome variables included were demographic characteristics (age, gender and tenure), both for employees and for supervisors, and the grouping variable was participants (i.e. a matched supervisor survey was completed at Time 2) and non-participants (i.e. the supervisor did *not* return a Time 2 survey). Again, no significant differences were found between the two groups on any of the employee/supervisor demographic variables, that is, the Pearson chi-square statistic was not significant ($p > .05$) for all demographic variables (employee gender, $\chi^2 = .00$, $p = .99$; employee age, $\chi^2 = 52.32$, $p = .21$; employee tenure, $\chi^2 = 102.28$, $p = .29$; supervisor gender, $\chi^2 = 1.19$, $p = .28$; supervisor age, $\chi^2 = 43.90$, $p = .43$; supervisor tenure, $\chi^2 = 118.49$, $p = .23$).

Further, to reduce the chance of attrition, participants were offered a relatively large monetary reward (compared with other incentives offered through the crowdsourcing site) for completing the Time 1 survey and having their supervisor complete the Time 2 survey. The

final sample size was 189 responses (with matched Time 1 and Time 2 surveys completed and returned). Of the final employee sample, 51.3% were female and the mean age was 36.30 years. Further, 98% of the sample reported that they worked full-time, and the majority (79%) reported that they worked in non- or lower management roles. Employee participants had been working with their current organisation for 5 years, on average, and worked in a range of job types. The most popular job types included administrative (15%), management/business/financial (16%), sales/marketing (15%), engineering/computing (11%) and 'other professional' (12%). The least popular job types included construction (2%), healthcare practitioner (5%), maintenance and repair (1%), labourer (3%), other (5%), production operations (3%), protective services (1%), logistics/distribution (2%), service work (4%) and technician (5%).

The final supervisor sample comprised 41.3% females and the mean age was 45.67 years. Most (99%) of the sample work full-time (this aligns with the specifications set by CloudResearch), and the majority (81%) work in middle or top management roles. The supervisor sample reported a mean tenure of 9.5 years ($SD = 8.9$ years) with their current organisation, and on average, they had been working with the focal employee for 4 years.

4.4.1.2 Measures

The independent (employee playfulness) and mediator (positive affect and LMX) variables were measured using self-report. The moderator (supervisor playfulness) and dependent variables (in-role performance and CWBs) were rated by the focal employee's immediate work supervisor.

4.4.1.2.1 Employee Playfulness

As in Study 2a, playfulness was measured using Barnett's (2007) 15-item APS. At Time 1, participants rated themselves on a 7-point Likert scale from 1 (*not at all*) to 7 (*to a very great extent*) on the extent to which numerous characteristics described them. Items

included ‘humorous’, ‘impulsive’, ‘funny’ and ‘sociable’. Although this scale has four sub-dimensions (gregarious, uninhibited, comedic and dynamic), scores across the items were added and the mean was calculated to give each participant a global ‘playfulness’ score to capture a more encompassing definition of playfulness. In this sample, Cronbach’s alpha for this scale was .92.

4.4.1.2.2 Supervisor Playfulness

Barnett’s (2007) APS was also used to measure supervisor’s levels of playfulness. At Time 1, participants rated themselves on a 7-point Likert scale from 1 (*not at all*) to 7 (*to a very great extent*). Items included ‘cheerful’, ‘friendly’, ‘outgoing’ and ‘impulsive’. In this sample, Cronbach’s alpha for this scale was .91.

4.4.1.2.3 Positive Affect

Positive affect was measured using the PANAS Scale (Watson et al., 1988) where employees self-rated on 10 items at Time 1, using a 7-point Likert scale (from 1 = *not at all* to 7 = *extremely*). Participants were asked to rate the extent to which they felt the particular emotion during the past week. Sample items included ‘attentive’, ‘strong’, ‘determined’ and ‘proud’. In this sample, Cronbach’s alpha for this scale was .92.

4.4.1.2.4 Leader–Member Exchange

In addition to the variables measured in Study 2a, Study 2b collected data on LMX, which was included in this study as an alternate mechanism linking playfulness and outcomes. LMX was measured at Time 1 using the 7-item scale developed by Liden et al. (1993). LMX data were captured from the subordinate’s point of view and included questions such as ‘My supervisor understands my problems and needs’ and ‘I would describe my working relationship with my supervisor as very effective’. Participants indicated their agreement with each statement on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Previous research found high test–retest reliability on measuring LMX at 6 weeks ($\alpha = .86$) and 6 months

($\alpha = .90$) later (Liden et al., 1993). This measure has also consistently shown criterion-related validity (Liden et al., 1993). In this sample, Cronbach's alpha for this scale was .92.

4.4.1.2.5 In-Role Performance

Employees' in-role performance (as assessed by their supervisor at Time 2) was measured using the scale developed by Tsui et al. (1997). This 6-item scale includes items such 'This employee's quantity of work is higher than average' and 'This employee strives for higher quality work than required'. Supervisors indicated their agreement with each statement on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). An alternate measure of in-role performance was used as an example of constructive replication. Specifically, the test on the relationships between the proposed variables was conducted more than once, by the same researcher (dependent replication), but included differences in design (in this case, an alternate dependent variable measure and not that used in the original test), with the objective of targeting variability due to differences in measurement error (Köhler & Cortina, 2019). In this sample, Cronbach's alpha for this scale was .91.

4.4.1.2.6 Counterproductive Work Behaviours

CWBs were rated on a scale from one (*strongly disagree*) to seven (*strongly agree*) by the employees' supervisor at Time 2 using an adaption of the measure developed by Aquino et al. (1999). The original version of the scale was adapted to enable it to be used by the supervisor. This scale had 17 items in three subscales (interpersonal, organisational and production deviance). Sample items include 'This employee teased a co-worker in front of other employees' and 'This employee purposely ignored my instructions'. In this sample, Cronbach's alpha for this scale was .94.

4.4.1.3 Control Variables

Information was collected on demographic variables, including gender and age, and as in Study 2a, these demographic variables were controlled for in the analyses.

In this study, personality was measured using a more recent scale, the Mini-IPIP Scale (Donnellan et al., 2006), which captures the factors of extraversion, agreeableness, conscientiousness, neuroticism and intellect/imagination. The Mini-IPIP is a 20-item short form of the 50-item International Personality Item Pool—Five-Factor Model measure (Goldberg, 1999). Research has shown that the Mini-IPIP has consistent and acceptable internal consistencies (at or above .60) and a similar pattern of convergent, discriminant and criterion-related validity with other Big Five measures (Donnellan et al., 2006).

Participants rated their agreement on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*) regarding several statements, including ‘I am the life of the party’ (E), ‘I sympathise with others’ feelings’ (A), ‘I get chores done right away’ (C), ‘I have frequent mood swings’ (N) and ‘I have a vivid imagination’ (I). These variables were controlled for in all following analyses. In this sample, the following psychometric properties were observed for the Big Five personality traits: extraversion ($M = 4.16$, $SD = 1.48$, $\alpha = .86$), agreeableness ($M = 5.40$, $SD = 1.29$, $\alpha = .85$), conscientiousness ($M = 5.36$, $SD = 1.20$, $\alpha = .80$), neuroticism ($M = 2.98$, $SD = 1.32$, $\alpha = .81$) and intellect/imagination ($M = 5.35$, $SD = 1.14$, $\alpha = .77$).

4.4.2 Results

4.4.2.1 Data Screening and Cleaning

Before performing the statistical analyses, all negatively valenced items were re-coded, variable scores were calculated and missing data were checked. If there was no pattern of missing data and the occurrences were low (less than 10%), missing values were replaced with the series mean. The assumptions of normality, skew and kurtosis were checked statistically and visually using graphical methods, including probability Q-Q plots, stem-and-leaf plots and histograms. It was found that all variables displayed an acceptable level of normality and there were no outliers. The variables (except CWBs) were slightly negatively skewed; however, because the skewness statistics did not exceed -1 , this was deemed

acceptable (Allen & Bennett, 2010). All kurtosis statistics also fell within the range of -1 to 1 and thus were deemed acceptable (Allen & Bennett, 2010). However, the measure of CWBs, was found to be positively skewed (skewness statistic = 1.68) and displayed kurtosis (kurtosis statistic = 2.87). However, results were compared with and without transforming this variable (log transformation was applied) and no significant differences were found. Therefore, the decision was made to retain the untransformed variable to ease interpretability and applicability of results.

The PROCESS macro for SPSS (Hayes, 2013) was used. Model 4 was used to test the indirect relationships (Hypotheses 1 and 2), and Model 58 was used to test the first- and second-stage moderated mediation (Hypotheses 3 and 4). Before conducting the analysis, descriptive statistics were analysed and a correlation matrix was produced to ensure that all variables were related to each other. Descriptive statistics and bivariate correlations are presented in Table 8. PROCESS was used in this instance (rather than SEM) because the subsequent models to be tested involved complicated regression pathways (i.e. two mediators and first- and second-stage moderators) that not all SEM programs offer; specifically, the estimation of interactions between latent variables is controversial.

Table 8*Study 2b: Descriptive Statistics and Bivariate Correlations*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender	-	-	-												
2. Age	36.30	9.20	.08	-											
3. Extraversion	4.16	1.48	-.04	.05	(.86)										
4. Agreeableness	5.40	1.29	.27**	.10	.28**	(.85)									
5. Conscientiousness	5.36	1.20	.10	.22**	.18*	.35**	(.80)								
6. Neuroticism	2.98	1.32	.03	-.23**	-.33**	-.32**	-.46**	(.81)							
7. Intellect/ Imagination	5.35	1.14	-.01	.02	.29**	.39**	.22**	-.39**	(.77)						
8. Employee Playfulness	4.62	1.00	-.09	.04	.63**	.30**	0.12	-.37**	.43**	(.92)					
9. Supervisor Playfulness	4.49	1.02	.03	.06	.15*	.21**	.15*	-.15*	0.10	.36**	(.91)				
10. Positive Affect	4.65	1.17	-.06	.04	.38**	.31**	.39**	-.52**	.29**	.55**	.27**	(.92)			
11. Leader–Member Exchange	5.41	1.05	-.01	.08	.22**	.30**	.33**	-.31**	.23**	.31**	.19*	.39**	(.92)		
12. In-Role Performance	5.78	.85	.05	.12	.20**	.32**	.41**	-.30**	.37**	.33**	.33**	.31**	.49**	(.91)	
13. Counterproductive Work Behaviours	1.64	.82	-.13	-.16*	-.04	-.30**	-.35**	.29**	-.30**	-0.05	-.16*	-.14	-.37**	-.47**	(.94)

Note. Cronbach alpha reliabilities are reported along the diagonal.

* $p < .05$. ** $p < .01$.

As in Study 2a, a confirmatory factor analysis was conducted to evaluate the relationships between manifest indicators and latent variables. The following latent constructs were included to create a six-factor hypothesis model: employee playfulness, supervisor playfulness, employee-rated positive affect, employee-rated LMX, supervisor-rated employee in-role performance and supervisor-rated employee CWBs. Each manifest indicator included an error term with a weighting of 1. One manifest indicator of each proposed latent construct was given a regression weight of 1. A two-way covariance relationship was specified between all latent factors. Given the large number of scale items, and the potential underlying multidimensional structure of the variables, item parcelling was applied. Parcelling occurs when individual scale item responses are combined into subscale ‘parcel scores’ prior to analysis (Bandalos & Finney, 2001), and it offers a range of advantages (Meade & Kroustalis, 2005, L. J. Williams et al., 2009).

As in Study 2a, item parcelling was informed both by theoretical and statistical methods. Theoretically, previous research has shown that Barnett’s (2007) APS has four sub-dimensions (gregarious, uninhibited, comedic and dynamic), and the CWB scale has three sub-dimensions (organisational, interpersonal and production deviance; Aquino et al., 1999). Therefore, it is justifiable to ‘parcel’ scale items according to these sub-dimensions (Little et al., 2013). This was supplemented by factor analysis, which was used to identify items to be allocated to parcels (as per Restubog et al., 2010). Specifically, items with the highest and lowest factor loadings for each latent construct were combined, then the second highest and lowest and so on. This resulted in the following: employee playfulness with three parcels (five items, two items and eight items), supervisor playfulness with three parcels (four, two and nine items), positive affect consisting of four parcels (three, two, three and two items), LMX with three parcels (three, two and two items), in-role performance consisting of two parcels (three items each) and CWBs with three parcels (interpersonal deviance subscale = three

items, production deviance subscale = six items and organisational deviance subscale = eight items). An aggregated mean was calculated for each parcel. No error terms or manifest indicators were correlated.

The results showed that the six-factor model has good fit to the sample data based on commonly accepted thresholds ($\chi^2 = 201.96$, $df = 104$, $p = .00$). It was noted that the chi-square test was significant; however, this index of model fit is rarely used in isolation in applied research because it is highly sensitive to sample size (T. A. Brown & Moore, 2012). Additional goodness-of-fit indices, including the comparative fit index (CFI), root mean square error of approximation (RMSEA) and standardised root mean residual (SRMR) were therefore used to provide an evaluation of the model fit (CFI = .96, RMSEA = .07 and SRMR = .05). According to L. J. Williams et al. (2009), a model can be considered a good fit if the CFI value exceeds 0.95 and/or the RMSEA is below 0.08; further, some researchers have recommended using both indices together when evaluating a model. In addition, the SRMR as an indicator of model fit is increasing in popularity among management researchers and a value of less than 0.10 for this measure is considered to indicate good fit (which in this case, it is). The estimates of all regression weights were significant at the $p < .001$ level, and all but one item displayed a standardised regression weight above 0.70 (range = 0.65 to 0.96). Since no items were less than 0.30, none was considered for deletion.

To determine discriminant validity, one and three-factor alternative models were also tested. In the one-factor model, each manifest indicator was loaded onto a single factor. This included three employee playfulness indicators, three supervisor playfulness indicators, four employee positive affect indicators, three employee LMX indicators, two supervisor-rated in-role performance indicators and three supervisor-rated CWB indicators. The results showed that the one-factor model has poor model fit ($\chi^2 = 1308.76$, $df = 119$, $p = .00$, CFI = .43, RMSEA = .23 and SRMR = .17).

In the three-factor model, manifest indicators were loaded onto three factors: playfulness (predictor variables, both employee and supervisor playfulness), resources (positive affect and LMX) and workplace behaviours (in-role performance and CWBs). This model included six playfulness parcels (three each for employee playfulness and supervisor playfulness), seven resource parcels (four for positive affect and three for LMX) and five workplace behaviour parcels (two for supervisor-rated in-role performance and three for supervisor-rated CWBs). Latent factors were correlated with a double-headed arrow. The results showed that the three-factor model has poor model fit ($\chi^2 = 963.60$, $df = 116$, $p = .00$, CFI = .59, RMSEA = .20 and SRMR = .18). Given these statistics, the proposed six-factor model is a superior fit for the data.

Chi-square difference tests were performed between the six-factor base model and the two alternative models. Comparing the base model with the one-factor model, the difference in degrees of freedom = 15 and the chi-square difference = 1106.80. Examining a chi-square distribution table, $Df = 15$, critical value at $p = .001$ is 37.70. The obtained chi-square difference is greater than the critical value, and therefore, it is significant. Comparing the base model with the three-factor model, the difference in degrees of freedom = 12 and the chi-square difference = 761.64. Examining a chi-square distribution table, $Df = 12$, critical value at $p = .001$ is 32.91. The obtained chi-square difference is greater than the critical value, and therefore, it is significant. Given these statistics, the proposed six-factor model has a better fit than the alternative models.

4.4.2.2 Hypotheses Testing

As in Study 2a, before conducting the mediation analysis, descriptive statistics were analysed and a correlation matrix was produced, as presented in Table 8. Here, it is shown that employee playfulness was significantly positively related to positive affect ($r = .55$, $p < .01$), which, in turn, was significantly positively related to in-role performance ($r = .31$,

$p < .01$) but was not significantly related to CWBs. As can also be observed from the correlation table, employee playfulness was significantly positively related to LMX ($r = .31$, $p < .01$), which, in turn, was significantly positively related to in-role performance ($r = .49$, $p < .01$) and significantly negatively related to CWBs ($r = -.37$, $p < .01$). Employee playfulness was significantly and positively related directly to in-role performance ($r = .33$, $p < .01$), but was not directly significantly related to CWBs.

4.4.2.2.1 Hypotheses 1a and 1b

Hypotheses 1a and 1b predicted that employee playfulness would be positively related to positive affect and LMX. A linear regression was performed, employee playfulness was entered as the independent variable and positive affect and LMX were entered as dependent variables in two separate analyses. Gender, age and Big Five traits were included as control variables. It was found that employee-reported playfulness was positively associated with positive affect ($B = .52$, $p = .00$). It was also found that employee-reported playfulness was positively associated with LMX ($B = .23$, $p = .01$). Therefore, *Hypotheses 1a and 1b were supported.*

4.4.2.2.2 Hypothesis 2a

Hypothesis 2a predicted that the relationship between employee-reported playfulness and in-role performance would be mediated by positive affect. As in Study 2a, the simple mediation model was assessed using the bootstrap procedure developed by Preacher and Hayes (2004, 2008) and the covariates of age, gender and Big Five personality traits were controlled for. PROCESS Model 4 was used to test the hypotheses, and Hypothesis 2 was tested on a piecemeal basis (i.e. positive affect and LMX were included as mediator variables in separated analyses).⁵

⁵ The analyses were also conducted integrating positive affect and LMX in one model (i.e. not piecemeal), and the pattern of results was the same.

It was found that the P value for all F -tests of overall significance was less than .05 (see Table 9); therefore, the models provide a better fit than the intercept-only model. It was found that the R^2 value was significantly different from zero. It was also found that employee-reported playfulness was positively associated with positive affect; however, positive affect was not significantly associated with supervisor-reported in-role performance ($B = .08$, $p = .19$). Results based on 5,000 bootstrapped samples indicate that the direct effect of employee-rated playfulness on supervisor-rated in-role performance was significant, *direct effect* = .16, $SE = .08$, 95% CI [.00, .32]. However, there was no significant indirect effect of playfulness on in-role performance through positive affect. Therefore, *Hypothesis 2a was not supported*.

Table 9

Study 2b Model Summary

Model	R	R^2	MSE	F	P
Outcome: Positive Affect	.69	.48	.75	20.46	.00
Outcome: Leader–Member Exchange	.46	.21	.91	5.89	.00
Outcome: In-Role Performance	.62	.38	.46	12.29	.00
Outcome: Counterproductive Work Behaviours	.52	.28	.51	7.56	.00

As a robustness check on these findings, the analyses were then conducted excluding control variables. Given the positive and significant correlations between employee playfulness, positive affect and in-role performance, it was not expected that the indirect relationship would be non-significant. PROCESS Model 4 was used, and the control variables were excluded. In this instance, it was found that playfulness was a significant predictor of positive affect, $B = .65$, $p = .00$, 95% CI [.51, .79]. Playfulness, $B = .16$, $p = .02$, 95% CI [.02, .29], and positive affect, $B = .19$, $p = .00$, 95% CI [.07, .30], were both significant predictors of in-role performance. The direct effect of playfulness on in-role performance was

significant, *direct effect* = .16, $p < .05$, 95% CI [.02, .29], as was the indirect effect via positive affect, *indirect effect* = .12, 95% CI [.04, .21].

4.4.2.2.3 Hypothesis 2b

Hypothesis 2b predicted that the relationship between employee-reported playfulness and in-role performance would be mediated by LMX. This was assessed using the bootstrap procedure developed by Preacher and Hayes (2004, 2008), and the covariates of age, gender and Big Five personality traits were controlled for.

It was found that the P value for all F -tests of overall significance was less than .05 (see Table 9); therefore, the models provide a better fit than the intercept-only model. It was also found that the R^2 value was significantly different from zero. It was found that employee-reported playfulness was positively associated with LMX and that LMX was positively associated with supervisor-reported in-role performance ($B = .27$, $p = .00$). Results based on 5,000 bootstrapped samples indicate that the direct effect of employee-rated playfulness on supervisor-rated in-role performance was significant, *direct effect* = .14, $SE = .07$, 95% CI [.00, .28]. There was a significant indirect effect of playfulness on in-role performance through LMX, *indirect effect* = .06, Boot $SE = .03$, 95% CI [.02, .13]. Therefore, *Hypothesis 2b was supported*.

4.4.2.2.4 Hypothesis 3a

Hypothesis 3a predicted that the relationship between employee-reported playfulness and CWBs would be mediated by positive affect. PROCESS Model 4 was used to conduct the analyses, and the covariates of age, gender and Big Five personality traits were controlled for. Hypothesis 3 was also tested on a piecemeal basis (i.e. positive affect and LMX were included as mediator variables in separate analyses).⁶

⁶ The analyses were also conducted integrating positive affect and LMX in one model (i.e. not piecemeal) and excluding control variables. The pattern of results was the same.

It was found that the P value for all F -tests of overall significance was less than .05 (see Table 9 above) and that the R^2 value was significantly different from zero. As above, playfulness was positively associated with positive affect ($B = .54, p = .00$). However, positive affect was not significantly associated with CWBs ($B = .03, p = .62$). Results based on 5,000 bootstrapped samples indicate that the direct effect of employee-rated playfulness on supervisor-rated CWBs was not significant, *direct effect* = .06, $SE = .08$, 95% CI $[-.10, .23]$. There was no significant indirect effect of playfulness on CWBs through positive affect. Therefore, *Hypothesis 3a was not supported.*

4.4.2.2.5 Hypothesis 3b

Hypothesis 3b predicted that the relationship between employee-reported playfulness and CWBs would be mediated by LMX. PROCESS Model 4 was used to conduct the analyses, and the covariates of age, gender and Big Five personality traits were controlled for.

It was found that the P value for all F -tests of overall significance was less than .05 (see Table 9 above) and that the R^2 value was significantly different from zero. As above, playfulness was positively associated with LMX ($B = .23, p = <.05$) and LMX was significantly negatively associated with CWBs ($B = -.21, p = .00$). Results based on 5,000 bootstrapped samples indicate that the direct effect of employee-rated playfulness on supervisor-rated CWBs was not significant, *direct effect* = .13, $SE = .07$, 95% CI $[-.02, .27]$. There was a significant indirect effect of playfulness on CWBs through LMX, *indirect effect* = $-.05$, Boot $SE = .02$, 95% CI $[-.10, -.01]$ ⁷. Therefore, *Hypothesis 3b was supported.*

4.4.2.2.6 Hypothesis 4

The proposed research model is a first- and second-stage moderated-mediation model (Model D; Edwards & Lambert, 2007). Hypotheses 4a and 4b proposed that the conditional

⁷ See also Table 11 below for summary of direct and indirect effect statistics for Studies 2a, 2b and 2c.

indirect effects of employee-reported playfulness in predicting in-role performance via positive affect and LMX would be stronger under high supervisor-reported playfulness (first stage) and weaker under high supervisor-reported playfulness (second stage). PROCESS Model 58 was used to conduct the analyses, and the covariates of age, gender and Big Five personality traits were controlled for. The analyses were conducted on a piecemeal basis (i.e. positive affect and LMX were analysed in separate models).⁸

- *Hypothesis 4a. Positive Affect as Mediator*

With positive affect acting as the mediator between employee playfulness and in-role performance and including supervisor playfulness as both a first- and second-stage moderator, no significant results were found. Employee playfulness was not a significant predictor of positive affect ($p = .22$) and the interaction term at the first stage (employee playfulness $\times$ supervisor playfulness) was also not significant, $\Delta R^2 = .00$, $\Delta F(1, 178) = 0.66$, $p = .42$. When predicting in-role performance, the following predictors were not significant: employee playfulness ($p = .29$); employee positive affect ($p = .13$) and the second-stage interaction term of employee positive affect $\times$ supervisor playfulness, $\Delta R^2 = .01$, $\Delta F(1, 177) = 1.49$, $p = .22$. The direct effect of playfulness on in-role performance was also not significant ($p = .29$).

- *Hypothesis 4b. LMX as Mediator*

First- and second-stage moderation was supported. At the first stage, the conditional effect of employee playfulness on LMX was significant at high levels of supervisor playfulness, $effect = .40$, 95% CI [.13, .67], but not at low levels of supervisor playfulness, $effect = .12$, 95% CI [-.10, .34]. See Figures 6 and 7 for the graphical representations of these relationships. At the second stage, the conditional effect of LMX on in-role performance was significant both at low and high levels of supervisor playfulness, but was stronger at low

⁸The analyses were also conducted integrating positive affect and LMX in one model (i.e. not piecemeal) and excluding control variables. The pattern of results was the same.

levels: low levels of supervisor playfulness $effect = .38$, 95% CI [.24, .51]; high levels of supervisor playfulness $effect = .17$, 95% CI [.04, .29]. The conditional indirect effect of employee playfulness on in-role performance via LMX was supported for high supervisor playfulness, $effect\ via\ LMX = .07$, 95% CI [.01, .15], but not for low supervisor playfulness, $effect\ via\ LMX = .05$, 95% CI [−.03, .13]. Therefore, Hypothesis 4 (regarding LMX) was supported.

Figure 6

Study 2b: Moderating Effect of Supervisor Playfulness on Relationship between Employee Playfulness and Leader–Member Exchange (First-Stage Moderation)

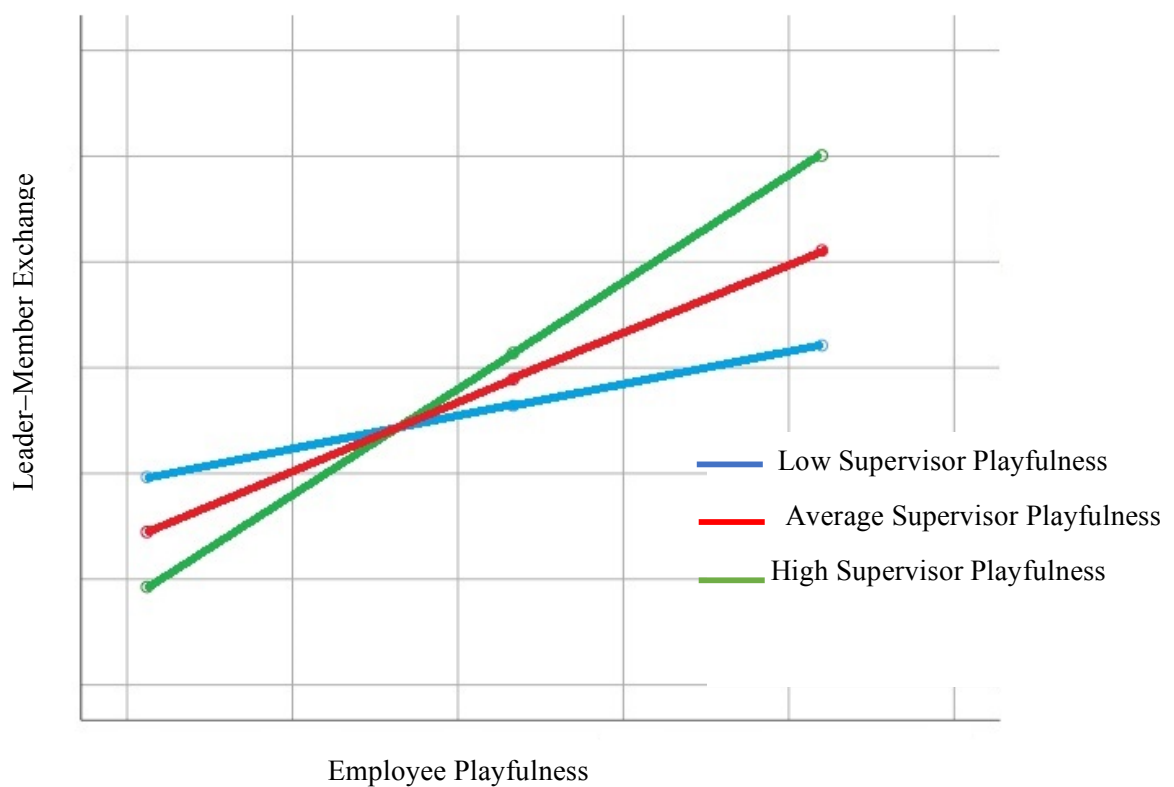
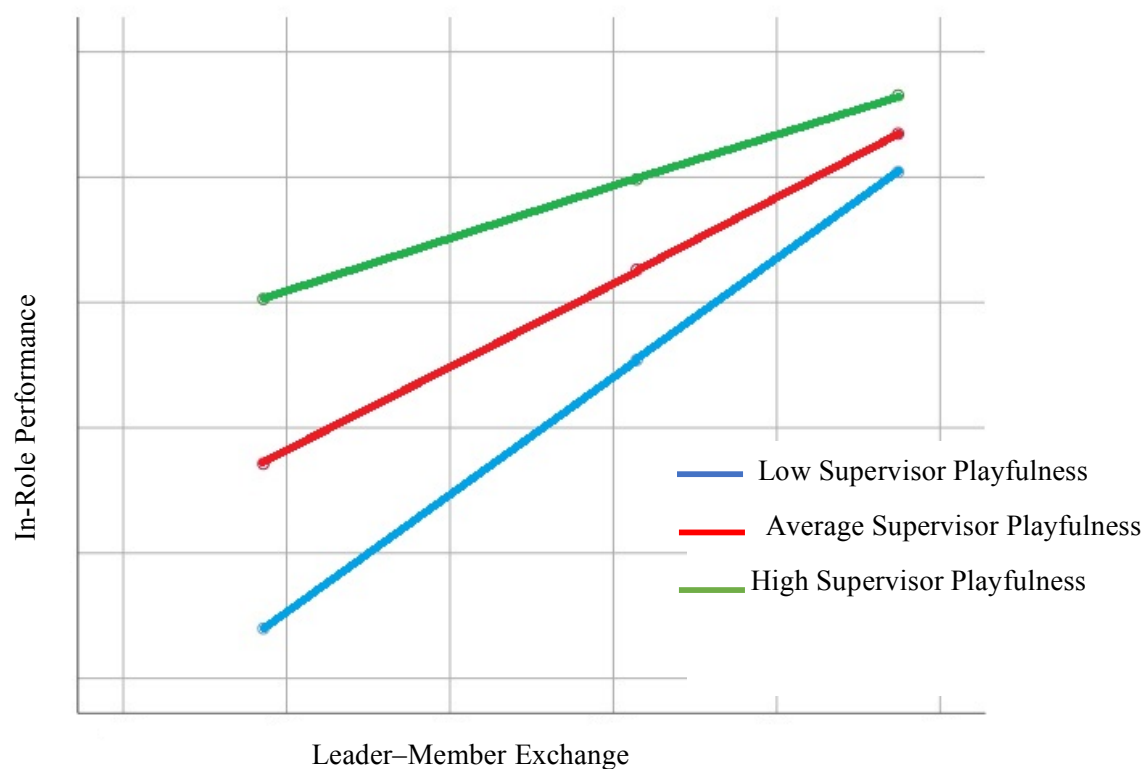


Figure 7

Study 2b: Moderating Effect of Supervisor Playfulness on Relationship between Leader–Member Exchange and In-Role Performance (Second-Stage Moderation)



4.4.2.2.7 Hypotheses 5a and 5b

Hypotheses 5a and 5b proposed that the conditional indirect effects of employee-reported playfulness in predicting counterproductive behaviours via positive affect will be stronger under high rather than low supervisor-reported playfulness both at the first and second stages. PROCESS Model 58 was used to conduct the analyses, and the covariates of age, gender and Big Five personality traits were controlled for. The analyses were conducted on a piecemeal basis (i.e. positive affect and LMX were analysed in separate models).⁹

⁹The analyses were also conducted integrating positive affect and LMX in one model (i.e. not piecemeal) and excluding control variables. The pattern of results was the same.

- *Hypothesis 5a. Positive Affect as Mediator*

With positive affect acting as the mediator between employee playfulness and CWBs and including supervisor playfulness as both a first- and second-stage moderator, no significant results were found. Employee playfulness was not a significant predictor of positive affect ($p = .22$) and the interaction term at the first stage (employee playfulness $\times$ supervisor playfulness) was also not significant, $\Delta R^2 = .00$, $\Delta F(1, 178) = 0.66$, $p = .42$. When predicting CWBs, the following predictors were not significant: employee playfulness ($p = .24$); employee positive affect ($p = .15$) and the second-stage interaction term of employee positive affect $\times$ supervisor playfulness, $\Delta R^2 = .01$, $\Delta F(1, 177) = 1.73$, $p = .19$. The direct effect of playfulness on CWBs was also not significant ($p = .24$).

- *Hypothesis 5b. LMX as Mediator*

First-stage moderation was supported. As demonstrated above, at the first stage, the conditional effect of employee playfulness on LMX was significant at high, but not at low levels of supervisor playfulness. At the second stage, the conditional effect of LMX on CWBs was found to be non-significant. The conditional indirect effect of employee playfulness on CWBs via LMX was supported for high supervisor playfulness, *effect via LMX* = $-.09$, 95% CI $[-.18, -.02]$, but not for low supervisor playfulness, *effect via LMX* = $-.02$, 95% CI $[-.07, .02]$. Therefore, Hypothesis 5b was partially supported.

4.4.2.3 Supplementary Analyses

Supplementary analyses were conducted to investigate the moderating role of supervisor playfulness on the direct relationship between employee playfulness and work-related outcomes. These analyses were conducted post-hoc, in accordance with Hollenbeck and Wright's (2017) article, which argued that Tharking (Transparently HARKing in the Discussion section) can 'promote the effectiveness and efficiency of both scientific inquiry

and cumulative knowledge creation' (p. 5). Post-hoc exploratory analyses can provide useful information and are encouraged as long as these are performed transparently.

4.4.2.3.1 In-Role Performance

PROCESS Model 1 was used to test the proposed moderating role of supervisor playfulness on the relationship between employee playfulness and in-role performance. The analyses were performed including and excluding control variables (age, gender and Big Five), and the pattern of results was the same. No significant results were found, $\Delta R^2 = .00$, $\Delta F(1, 178) = 0.02$, $p = .88$.

4.4.2.3.2 Counterproductive Work Behaviours

PROCESS Model 1 was used to test the proposed moderating role of supervisor playfulness on the relationship between employee playfulness and CWBs. The analyses were performed including and excluding control variables (age, gender and Big Five), and the pattern of results was the same. No significant results were found, $\Delta R^2 = .01$, $\Delta F(1, 178) = 2.23$, $p = .14$.

4.4.3 Discussion

The findings of Study 2b provide partial support for the hypotheses. Hypotheses 1a and 1b predicted that employee playfulness would be positively related to positive affect and LMX. These hypotheses were supported. This result tells us that playfulness can be used as a resource, invested by individuals to gain additional resources, specifically, a gain in psychological resources, as indicated by higher levels of positive affect or feeling happy at work, and a gain in relational resources, as indicated by higher LMX or a closer relationship with one's supervisor. This is an aspect of playfulness that has not been considered and gives some insight into why employees may choose to be playful in a work context, despite the traditionally held belief that work and play should be kept separate.

Hypotheses 2a and 2b proposed that employee-reported playfulness would be indirectly related to in-role performance via positive affect and LMX. These hypotheses were partially supported. In this sample, it was found that playfulness predicted in-role performance via LMX (in a positive direction), but not via positive affect. The results also showed that playfulness had a significant positive direct effect on in-role performance. This tells us that playfulness can indeed be beneficial in an organisational setting, particularly in the context of strengthened relationships at work (as evidenced by the increase in LMX translating to improved work performance).

Hypotheses 3a and 3b proposed that employee-reported playfulness would be indirectly related to CWB via positive affect and LMX. Again, these hypotheses were partially supported. A significant indirect effect was found of playfulness on CWBs through LMX (in the predicted negative direction). However, the indirect relationship with positive affect acting as the mediator was found to be non-significant. This is an interesting finding that adds to the above findings and indicates that playfulness can be beneficial at work, particularly through the development of a closer relationship with one's supervisor.

Hypotheses 4a and 4b proposed that the conditional indirect effects of employee-reported playfulness in predicting in-role performance via positive affect and LMX would be stronger under high supervisor-reported playfulness (first stage) and weaker under high supervisor-reported playfulness (second stage). These hypotheses were partially supported. First- and second-stage moderation was supported, but only when LMX was included as the mediator.

Hypotheses 5a and 5b proposed that the conditional indirect effects of employee-reported playfulness in predicting counterproductive behaviours via positive affect and LMX will be stronger under high rather than low supervisor-reported playfulness both at the first and second stages. In this sample, hypothesis 5a was not supported. With LMX acting as the

mediator (hypothesis 5b), first-stage, but not second-stage, moderation was supported. These findings are particularly important and relevant for managers, who previously may have discouraged playful practices in the workplace.

These findings support the theoretical argument motivated by COR theory that playfulness can be invested as a resource for increasing LMX between an employee and their supervisor. High LMX is a (relational) resource, but it also gives access to additional resources (e.g. material, financial and additional relational resources). These resources are then reinvested to positively affect in-role performance and negatively affect counterproductive behaviours. However, the benefits of playfulness are more likely to be realised if the employee and supervisor have matched high levels of playfulness. If their playfulness levels are incompatible, there is a weaker relationship between playfulness and resource gain and improved work outcomes. This finding also gives an insight into important interpersonal and instrumental aspects of play that might be unique to the work context. In particular, employees may choose to engage in play with their supervisor, even if they do not particularly like them, or would not otherwise choose to engage with them in this manner, because they realise that it might be beneficial to them in other ways. In this way, play at work is engaged in with one's supervisor for instrumental reasons, not just hedonic ones. This, it is argued, is a unique feature of play at work.

Additional research is required since this study does not replicate the findings in Study 2a, nor does it support the hypotheses regarding positive affect acting as a psychological mechanism linking playfulness and outcomes. It is an interesting finding that the indirect relationship between playfulness and in-role performance via positive affect was significant when control variables were excluded from the analysis. This finding was not surprising, given that playfulness was significantly positively related to positive affect, which, in turn, was significantly positively related to in-role performance (the correlation between positive

affect and CWBs was not significant). This tells us that playfulness and positive affect were not able to predict in-role performance over and above the included control variables.

In addition, although using crowdsourcing websites certainly has benefits (discussed in section 4.4), this method of data collection has also attracted some criticism. For example, there have been suggestions of a developing population of ‘professional survey takers’, researchers have no control over the environment in which surveys are completed and there is no way of verifying participants’ identities (Palan & Schitter, 2018). There was also an element of trust in that participants were asked to contact their managers and share the initial survey link. Although measures were put in place to check that supervisors were filling out the survey (and not the focal employee or a colleague)—for example, verification questions were included in the survey—there was no way to monitor or control this aspect directly. In addition, Study 2b was conducted in a Western context, but it is also important to investigate whether these findings will be replicated in an Eastern context.

4.5 Study 2c

The results of Study 2b did not support all the hypotheses, perhaps because of the sample used. For example, arguments have been made against the use of crowdsourcing websites, such as CloudResearch, and it was taken on good faith that employees and supervisors truthfully filled out their portions of the survey. Study 2c aimed to extend the findings of Study 2b by recruiting a larger sample size (with almost double the number of participants) and by utilising a more trustworthy survey design (i.e. face-to-face distribution of pen-and-paper surveys, sent directly back to the researchers). By collecting data in the Philippines, it also investigated the proposed relationships in an Eastern setting.

More concise measurement scales for some variables were also used to facilitate measurement precision and constructive replication, one of the most useful, but least employed, forms of replication. (Köhler & Cortina, 2019).

Study 2c tested the overall research model, investigating the effect of employee playfulness on positive affect and LMX (mediators), and in-role performance and CWBs (dependent variables). Supervisor levels of playfulness were investigated as both a first- and second-stage moderator.

4.5.1 Method

4.5.1.1 Sample and Procedure

Participants were part-time postgraduate students from the Philippines who were engaged in full-time work. With the permission of course coordinators and lecturers, research assistants distributed survey packets (containing a self-report survey and a letter describing the nature of the study) to MBA students. The self-report questionnaires contained identity codes to enable each employee's ratings to be matched with subsequent surveys. Participants were assured of confidentiality and informed that they could withdraw from the study at any point in time. Questionnaires were prepared in English because this language is spoken by the vast majority of the Filipinos, especially in educational and organisational settings (Bernardo, 2004). Upon completion of the surveys, participants (employees and their supervisors) received a coffee voucher (PhP100 or US\$2) as a token for participating in the study. To examine the extent to which the focal variables exerted a significant influence on work-related outcomes, outcome variables were assessed at Time 2, one month later.

At Time 1, questionnaires were distributed to 500 part-time students. In this survey, employees self-reported their demographic characteristics, playfulness, positive affect and LMX, while their immediate supervisor self-reported their demographic characteristics and levels of playfulness. Four hundred and fifty participants returned the surveys, yielding a response rate of 90%.

At Time 2 (one month later), each of the 450 participants received a second self-report survey, along with a behavioural rating form to be completed by their immediate supervisor

that assessed the participants' in-role performance and CWBs. Participants and supervisors both returned their completed form using pre-paid reply envelopes sent directly to the researchers. Among student subordinates, 417 completed and returned their self-report surveys (yielding a 92.67% response rate). Completed supervisor surveys were received from 399 supervisors (yielding an 88.67% response rate). Twenty self-reported surveys and two supervisor surveys were excluded because of wrong or missing identity codes. The two data collection waves resulted in 397 independent matched employee–supervisor dyads.

In terms of demographic profile, 64.6% of employees were female and the average age was 35.14 years. Tenure varied from 0 to 30 years as follows: 15% of the sample had been at their current organisation for less than 1 year, 50% had been there 1–5 years, 21% for 6–10 years, 6.5% for 11–15 years, 4% for 16–20 years, 2.5% for 21–25 years and 1% for 26–30 years. Employees worked in a range of sectors, including accounting and finance (13%), marketing (14%), information technology (12%) and general management (13%).

As regards demographic characteristics of the supervisor sample, 53.3% were female and 87% were 31 years and older. Supervisors' reported tenure was as follows: 28.5% had been at their current organisation for 1–5 years, 35% had been there 6–10 years, 12% for 11–15 years, 10% for 16–20 years, 7% for 21–25 years, 3.5% for 26–30 years and 3% for over 30 years.

4.5.1.2 Measures

The independent (employee playfulness) and mediator (positive affect and LMX) variables were measured using self-report. The moderator (supervisor playfulness) and dependent (in-role performance and CWBs) variables were rated by the focal employee's immediate work supervisor, with co-raters and a time-lagged design being used to minimise common methods variance (Podsakoff et al., 2003).

4.5.1.2.1 Employee Playfulness

Employee playfulness was measured using the SMAP (Proyer, 2012). This test, which comprised five items, displays good internal consistency (0.89) and gave a test–retest correlation of 0.74 when testing 12–16 weeks later (Proyer, 2012). At Time 1, participants rated themselves on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*) on the extent to which numerous descriptions applied to them. These included ‘I am a playful person’, ‘I frequently do playful things in my daily life’ and ‘Sometimes, I completely forget about the time and am absorbed in a playful activity’. Scores across the items were added, and the mean was calculated to give each participant a ‘playfulness’ score. This measure, rather than Barnett’s (2007) scale, was used for constructive replication, whereby findings are replicated using different operationalisations of the same construct. In this sample, Cronbach’s alpha for this scale was 0.87.

4.5.1.2.2 Supervisor Playfulness

Supervisor playfulness was also measured using the SMAP (Proyer, 2012). At Time 1, supervisors rated themselves on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*) on the extent to which several descriptions applied to them, including ‘Good friends would describe me as a playful person’ and ‘It does not take much for me to change from a serious to a playful frame of mind’. In this sample, Cronbach’s alpha for the 5-item scale was .54. Since this value is relatively low, the decision was made to remove one item from the scale, which improved the reliability to Cronbach’s alpha = 0.58.

4.5.1.2.3 Positive Affect

Positive affect was measured using the PANAS Scale (Watson et al., 1988) where employees self-rated on 10 items at Time 1, using a 7-point Likert scale (from 1 = *not at all* to 7 = *extremely*). Participants were asked to rate the extent to which they felt the particular

emotion during the past week. Sample items include ‘attentive’, ‘strong’, ‘determined’ and ‘proud’. In this sample, Cronbach’s alpha for this scale was .93.

4.5.1.2.4 Leader–Member Exchange

LMX was measured at Time 1 using the 7-item scale developed by Liden et al. (1993). LMX data were captured from the subordinates’ point of view and included statements such as ‘My supervisor understands my problems and needs’ and ‘I would describe my working relationship with my supervisor as very effective’. Participants indicated their agreement with each statement on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). In this sample, Cronbach’s alpha for this scale was .88.

4.5.1.2.5 In-Role Performance

Employees’ in-role performance (as assessed by their supervisor at Time 2) was measured using the scale developed by L. J. Williams and Anderson (1991). This four-item scale has the following items: ‘This employee adequately completes assigned duties’, ‘This employee fulfils responsibilities specified in their job description’, ‘This employee performs tasks that are expected of him/her’ and ‘This employee meets formal performance requirements of the job’. In this sample, Cronbach’s alpha for this scale was .95.

4.5.1.2.6 Counterproductive Work Behaviours

CWBs were rated by the employees’ supervisor at Time 2. In this study, the focus was on interpersonal deviance as a specific type of CWB because this allows us to make more precise statements concerning the impact of playfulness on certain CWBs. It was predicted that interpersonal deviance is most likely to be affected by playfulness since it refers to a work-related outcome that effects other employees, as does LMX and being playful in the workplace. Supervisors rated on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*) using four items from the measure developed by Aquino et al. (1999). The original version of the scale was adapted to enable it to be used by an employee’s supervisor. The items include

‘This employee swore at a co-worker’ and ‘This employee teased a co-worker in front of other employees’. In this sample, Cronbach’s alpha for this scale was .85.

4.5.1.3 Control Variables

Information was collected on demographic variables, including gender and age, and as in Studies 2a and 2b, these demographic variables were controlled for in the analyses.

Included as control variables, participants’ personality was measured using the 44-item Big Five Inventory (John et al., 1991) which assessed the five personality dimensions of extraversion, agreeableness, conscientiousness, neuroticism and openness to experience. This is a popular test that has displayed good reliability and validity (John & Srivastava, 1999). Participants rated themselves on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*) on items such as ‘is talkative’ (E), ‘tends to find fault with others’ (A, reverse coded), ‘does a thorough job’ (C), ‘is depressed, blue’ (N) and ‘is original, comes up with new ideas’ (O).

However, in this study openness to experience was *not* included in further analyses, for several reasons. First, research has shown that openness to experience consistently displays low correlations with job performance (Barrick et al., 2001) and it yields the lowest convergent validity with other measures of personality (Donnellan et al., 2006). It is the least predictive and most controversial of the dimensions (Griffin & Hesketh, 2004). Research has also shown that individuals from East Asia return significantly different Openness scores to those from other regions (Schmitt et al., 2007). Since this sample resides in Asia, openness will potentially have a larger impact on work outcomes in this context compared with a Western context, and thus may mask the true effects of playfulness. In this sample, the following reliability statistics (Cronbach’s alpha) were observed for the Big Five personality traits: extraversion ($\alpha = .63$), agreeableness ($\alpha = .61$), conscientiousness ($\alpha = .77$) and neuroticism ($\alpha = .75$).

To rule out alternative explanations, the remaining Big Five personality traits were controlled for because, first, previous research has shown relationships between playfulness and each of the Big Five dimensions (e.g. Aldag & Sherony, 2001; Barnett, 2012; Karl et al., 2007; Lamm & Meeks, 2009). Previous research has also found that personality affects job performance and may act as a predictor of CWBs. Indeed, meta-analytic evidence from the Big Five literature has highlighted that some personality dimensions show consistent relationships to CWBs and in-role performance (Barrick & Mount, 1991; Cullen & Sackett, 2003; Hurtz & Donovan, 2000).

4.5.2 Results

4.5.2.1 Data Screening and Cleaning

Before performing the statistical analyses, all negative items were re-coded, variable scores were calculated and missing data were checked. If there was no pattern of missing data, and missing cases constituted less than 10% of responses, missing values were replaced with the series mean. The assumptions of normality, skew and kurtosis were checked statistically and visually using graphical methods including probability Q-Q plots and histograms. The following variables displayed slight negative skew: employee-reported playfulness (skewness statistic = $-.39$), positive affect ($-.52$), LMX ($-.88$) and supervisor-rated in-role performance (-1.3). Supervisor-rated playfulness and CWBs displayed slight positive skew (skewness statistic = $.66$ and 1.28 for the two variables respectively). Some slight positive kurtosis was shown for the variables of employee-rated positive affect (kurtosis statistic = 2.29), LMX (1.61), supervisor-rated playfulness ($.29$), CWBs (1.39) and in-role performance (2.26). Employee-rated playfulness displayed slight negative kurtosis (kurtosis statistic = $-.02$). However, these skewness and kurtosis statistics were all deemed as acceptable as per thresholds discussed by Allen and Bennett (2010). Therefore, it was determined that all variables displayed an acceptable level of normality and there were no outliers. In addition,

the variance inflation factor (VIF statistic) for all variables was examined to ensure the assumption of multicollinearity was not violated. All predictor variables were found to have a VIF of less than 2, and therefore, this assumption was not violated (a VIF value of 1–10 indicates no multicollinearity).

The PROCESS macro for SPSS (Hayes, 2013) was used. Model 4 was used to test the indirect relationships (H2 and H3), and Model 58 was used to test the first- and second-stage moderated mediation (H4 and H5). Before conducting the analysis, descriptive statistics were analysed and a correlation matrix was produced to ensure that all variables were related to each other. Descriptive statistics and bivariate correlations are presented in Table 10. Also included below (Table 11) is a summary of the regression direct and indirect effect statistics for Studies 2a, b and c.

Table 10*Study 2c Descriptive Statistics and Bivariate Correlations*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	-	-	-											
2. Age	35.14	8.78	.07	-										
3. Extraversion	4.68	.74	-.07	-.06	(.63)									
4. Agreeableness	5.46	.73	.08	.09	.15**	(.61)								
5. Conscientiousness	5.14	.76	.04	.20**	.17**	.60**	(.77)							
6. Neuroticism	3.39	.86	.09	-.10*	-.23**	-.53**	-.61**	(.75)						
7. Employee Playfulness	4.52	1.24	-.08	-.05	.21**	-.01	-.10*	.01	(.87)					
8. Supervisor Playfulness	4.29	.86	-.09	-.11*	.33**	-.04	-.06	-.09	.34**	(.58)				
9. Positive Affect	4.07	.69	-.05	.05	.25**	.36**	.32**	-.26**	.14**	.12*	(.93)			
10. Leader–Member Exchange	5.51	.88	.01	.16**	.23**	.38**	.35**	-.21**	.27**	.08	.43**	(.88)		
11. In-Role Performance	5.89	1.11	-.00	.15**	.11*	.12*	.19**	-.16**	-.03	.04	.24**	.20**	(.95)	
12. Counterproductive Work Behaviours	2.04	1.14	-.02	-.08	-.03	.02	-.00	.02	.17**	.16**	.16**	.05	-.26**	(.85)

Note. Cronbach alpha reliabilities are reported along the diagonal.

* $p < .05$; ** $p < .01$.

Table 11.*Studies 2a, b and c Regression Direct and Indirect Effect Statistics*

Path	Study 2a			Study 2b			Study 2c		
	<i>B</i>	<i>SE</i>	<i>95% CI</i>	<i>B</i>	<i>SE</i>	<i>95% CI</i>	<i>B</i>	<i>SE</i>	<i>95% CI</i>
In-Role Performance									
<i>Positive Affect</i>									
Play → IRP (direct)	-.02	.05	[-.12, .07]	.16	.08	[.00, .32]	-.06	.05	[-.14, .03]
Play → IRP (indirect)	.06	.02	[.03, .10]	.12	.06	[.04, .21]	.02	.01	[.00, .04]
<i>Leader-Member Exchange</i>									
Play → IRP (direct)	-	-	-	.14	.07	[.00, .28]	-.07	.05	[-.17, .02]
Play → IRP (indirect)	-	-	-	.06	.03	[.02, .13]	.04	.01	[.01, .07]
Counterproductive Work Behaviours									
<i>Positive Affect</i>									
Play → CWB (direct)	.06	.04	[-.02, .14]	.06	.08	[-.10, .23]	.15	.05	[.06, .25]
Play → CWB (indirect)	-.04	.01	[-.07, -.01]	.01	.04	[-.06, .09]	.02	.01	[.00, .04]
<i>Leader-Member Exchange</i>									
Play → CWB (direct)	-	-	-	.13	.07	[-.02, .27]	.17	.05	[.07, .27]
Play → CWB (indirect)	-	-	-	-.05	.02	[-.10, -.01]	.00	.01	[-.02, .03]

As in Studies 2a and 2b, a confirmatory factor analysis was conducted to evaluate the relationships between manifest indicators and latent variables. The following latent constructs were included in creating a six-factor hypothesis model: employee playfulness, employee-rated positive affect, employee-rated LMX, supervisor playfulness, supervisor-rated employee in-role performance and supervisor-rated employee CWBs. Each manifest indicator included an error term with a weighting of 1. One manifest indicator of each proposed latent construct was given a regression weight of 1. A two-way covariance relationship was specified between all latent factors. No error terms or manifest indicators were correlated.

Item parcelling was used owing to the large number of parameters to be estimated, and factor analysis was used to identify the items to be allocated to parcels (as per previous studies, Restubog et al., 2010; Wang et al., 2018). Items with the highest and lowest factor loadings for each latent construct were combined, then the second highest and lowest and so on. This resulted in the following: employee playfulness comprising two parcels (two items and three items), positive affect comprising four parcels (two, two, three and three items), LMX comprising three parcels (three, two and two items), supervisor playfulness comprising two parcels (one item and three items), in-role performance comprising two parcels (two items each) and CWBs comprising two parcels (two items each). An aggregated mean was calculated for each parcel.

The results showed that the model has good fit to the sample data based on commonly accepted thresholds. First, it is noted that the chi-square test was significant ($\chi^2 = 152.37$, $df = 75$, $p < .01$); however, this index of model fit is rarely used in isolation in applied research since it is highly sensitive to sample size (T. A. Brown & Moore, 2012). Additional goodness-of-fit indices, including the comparative fit index (CFI), root mean square error of approximation (RMSEA) and standardised root mean residual (SRMR), were used to provide an evaluation of model fit (CFI = .98, RMSEA = .05 and SRMR = .03). According to L. J.

Williams et al. (2009), a model can be considered a good fit if the CFI value exceeds 0.95 and/or the RMSEA is below 0.08; further, some researchers recommend using both indices together when evaluating a model. In addition, the SRMR as an indicator of model fit is increasing in popularity among management researchers and a value of less than 0.10 for this measure is considered to indicate good fit. The estimates of all regression weights were significant at the $p = .001$ level, and all items displayed a standardised regression weight at or above 0.70. No items were less than 0.30 and thus were not considered for deletion. The range of standardised regression weights was 0.70 to 0.96. No error terms were correlated as this can result in a reduction in parameter value replication (Hermida, 2015).

To determine discriminant validity, one-factor and three-factor alternative models were also tested. In the one-factor model, each manifest indicator was loaded onto a single factor. This included two employee playfulness indicators, two supervisor playfulness indicators, four employee positive affect indicators, three employee LMX indicators, two supervisor-rated in-role performance indicators and two supervisor-rated CWB indicators. The results showed that the one-factor model has poor model fit ($\chi^2 = 2102.43$, $df = 90$, $p = .00$, CFI = .43, RMSEA = .24 and SRMR = .17).

In the three-factor model, manifest indicators were loaded onto three factors: playfulness (predictor variables, both employee and supervisor playfulness), resources (positive affect and LMX) and workplace behaviours (comprising in-role performance and CWBs). This model included four playfulness parcels (two each for employee playfulness and supervisor playfulness); seven resource parcels (four for positive affect and three for LMX) and four workplace behaviour parcels (two each for supervisor-rated in-role performance and supervisor-rated CWBs). The results showed that the three-factor model has poor model fit ($\chi^2 = 1566.70$, $df = 87$, $p = .00$, CFI = .58, RMSEA = .15 and SRMR = .21).

Chi-square difference tests were performed between the six-factor base model and the two alternative models. Comparing the base model with the one-factor model, the difference in degrees of freedom = 15 and the chi-square difference = 1950.06. Examining a chi-square distribution table, $Df = 15$, critical value at $p = .001$ is 37.70. The obtained chi-square difference is greater than the critical value and is therefore significant. Comparing the base model with the three-factor model, the difference in degrees of freedom = 12 and the chi-square difference = 1414.33. Examining a chi-square distribution table, $Df = 12$, critical value at $p = .001$ is 32.91. The obtained chi-square difference is greater than the critical value; therefore, it is significant. Overall, given these statistics, the proposed six-factor model has a better fit than the alternative models.

4.5.2.2 Hypotheses Testing

Before conducting further analysis, descriptive statistics were analysed and a correlation matrix was produced, as shown in Table 10. As can be observed from the table, employee playfulness was significantly positively related to positive affect ($r = .14$, $p < .01$), which, in turn, was significantly positively related to in-role performance ($r = .24$, $p < .01$), and CWBs ($r = .16$, $p < .01$). As can also be noted from the correlation table, employee playfulness was significantly positively related to LMX ($r = .27$, $p < .01$), which, in turn, was significantly positively related to in-role performance ($r = .20$, $p < .01$) but was not significantly negatively related to CWBs.

4.5.2.2.1 Hypotheses 1a and 1b

Hypotheses 1a and 1b predicted that employee playfulness would be positively related to positive affect and LMX. A linear regression was performed with control variables included in the analysis (employee playfulness entered as the independent variable; positive affect and LMX entered as dependent variables). It was found that employee-reported playfulness was positively associated with positive affect ($B = .14$, $p < .01$). It was also

found that employee-reported playfulness was positively associated with LMX ($B = .27$, $p = .00$). Therefore, *Hypotheses 1a and 1b was supported*.

4.5.2.2.2 Hypothesis 2a

Hypothesis 2a predicted that the positive relationship between employee-reported playfulness and in-role performance would be mediated by positive affect. As in the previous studies, the simple mediation model was assessed using the bootstrap procedure developed by Preacher and Hayes (2004, 2008) and the covariates of age, gender, tenure and Big Five personality traits were controlled for. PROCESS Model 4 was used to test the following hypotheses (H2a, H2b). The following analyses were conducted in a piecemeal fashion (i.e. positive affect and LMX were analysed as mediators in separate models).¹⁰ It was found that the P value for the F -test of overall significance was less than .05 (see Table 12 below); therefore, the models provide a better fit than the intercept-only model. It was also found that the R^2 value was significantly different from zero. It was found that employee-reported playfulness was positively and significantly associated with positive affect ($B = .06$, $p = .02$) and that positive affect was also positively and significantly associated with in-role performance ($B = .32$, $p = .00$).

¹⁰ Note that the analyses were also run integrating positive affect and LMX into one model and excluding control variables. The same pattern of results was shown.

Table 12*Study 2c Model Summary*

Model	<i>R</i>	<i>R</i> ²	MSE	<i>F</i>	<i>P</i>
Outcome: Positive Affect	.46	.21	.39	12.60	.00
Outcome: Leader–Member Exchange	.54	.29	.57	19.39	.00
Outcome: In-Role Performance (PA mediator)	.31	.10	1.13	4.60	.00
Outcome: In-Role Performance (LMX mediator)	.29	.08	1.15	3.83	.00
Outcome: Counterproductive Work Behaviours (PA mediator)	.26	.07	1.25	3.08	.00
Outcome: Counterproductive Work Behaviours (LMX mediator)	.21	.04	1.28	1.93	.05

To increase the power of the test, the number of bootstrap samples was increased (Davidson & MacKinnon, 2000) from 5,000 to 10,000. Results based on 10,000 bootstrapped samples indicate that the direct effect of employee-rated playfulness on supervisor-rated in-role performance was not significant, *direct effect* = $-.06$, *SE* = $.05$, 95% CI [$-.14$, $.03$]. There was a significant indirect effect of playfulness on in-role performance via positive affect, *indirect effect* = $.02$, Boot *SE* = $.01$, 95% CI [$.00$, $.04$]. Therefore, *Hypothesis 2a* was supported.

4.5.2.2.3 Hypothesis 2b

Hypothesis 2b predicted that the positive relationship between employee-reported playfulness and in-role performance would be mediated by LMX. It was found that the *P* value for the *F*-test of overall significance was less than $.05$ (see Table 12), and therefore, the models provide a better fit than the intercept-only model. It was also found that the *R*² value was significantly different from zero. It was found that employee-reported playfulness was significantly positively associated with LMX ($B = .19$, $p = .00$) and that LMX was

significantly positively associated with supervisor-reported in-role performance ($B = .20$, $p = .01$).

Results based on 10,000 bootstrapped samples indicate that the direct effect of employee-rated playfulness on supervisor-rated in-role performance was not significant, *direct effect* = $-.07$, $SE = .05$, 95% CI $[-.17, .02]$. However, playfulness had a significant indirect effect on in-role performance via LMX, *indirect effect* = $.04$, Boot $SE = .01$, 95% CI $[.01, .07]$. Therefore, *Hypothesis 2b was supported*.

4.5.2.2.4 Hypothesis 3a

Hypothesis 3a predicted that the relationship between employee-reported playfulness and CWBs would be mediated by positive affect. PROCESS Model 4 was used to conduct the analyses, and the covariates of age, gender, tenure and Big Five personality traits were controlled for. The following analyses were conducted in a piecemeal fashion (i.e. positive affect and LMX were analysed as mediators in separate models).¹¹ It was found that the P value for the F -test of overall significance was less than $.05$ (see Table 12) and that the R^2 value was significantly different from zero. Playfulness was significantly positively associated with positive affect ($B = .06$, $p = .02$). Positive affect was also significantly positively associated with CWBs ($B = .29$, $p = .00$).

Results based on 10,000 bootstrapped samples indicate that the direct effect of employee-rated playfulness on supervisor-rated CWBs was significant, *direct effect* = $.15$, $SE = .05$, 95% CI $[.06, .25]$. Employee playfulness also had a significant indirect effect on CWBs via positive affect, *indirect effect* = $.02$, Boot $SE = .01$, 95% CI $[.00, .04]$. Therefore, *Hypothesis 3a was supported*.

¹¹ Note that the analyses were also run integrating positive affect and LMX into one model and excluding control variables. The same pattern of results was shown.

4.5.2.2.5 Hypothesis 3b

Hypothesis 3b predicted that the relationship between employee-reported playfulness and CWBs would be mediated by LMX. PROCESS Model 4 was used to conduct the analyses, and the covariates of age, gender and Big Five personality traits were controlled for. It was found that the P value for the F -test of overall significance was .05 (see Table 12) and thus is not considered significant. As above, playfulness was significantly positively associated with LMX ($B = .19, p = .00$). However, LMX was not found to be significantly associated with CWBs ($B = .02, p = .04$).

Results based on 10,000 bootstrapped samples indicate that the direct effect of employee-rated playfulness on supervisor-rated CWBs was significant, *direct effect* = .17, $SE = .05$, 95% CI [.07, .27]. However, there was no significant indirect effect of employee playfulness on CWBs via LMX, *indirect effect* = .00, Boot $SE = .01$, 95% CI [−.02, .03]¹². Therefore, *Hypothesis 3b was not supported*.

4.5.2.2.6 Hypotheses 4a and 4b

The proposed research model is a first- and second-stage moderated-mediation model (Model D; Edwards & Lambert, 2007). Hypotheses 4a and 4b proposed that the conditional indirect effects of employee-reported playfulness in predicting in-role performance via positive affect and LMX would be stronger under high supervisor-reported playfulness (first stage) and weaker under high supervisor-reported playfulness (second stage). PROCESS Model 58 was used to conduct the analyses, mediators were entered on a piecemeal basis and the covariates of age, gender, tenure and Big Five personality traits were controlled for.¹³

- *Positive Affect as Mediator (Hypothesis 4a)*

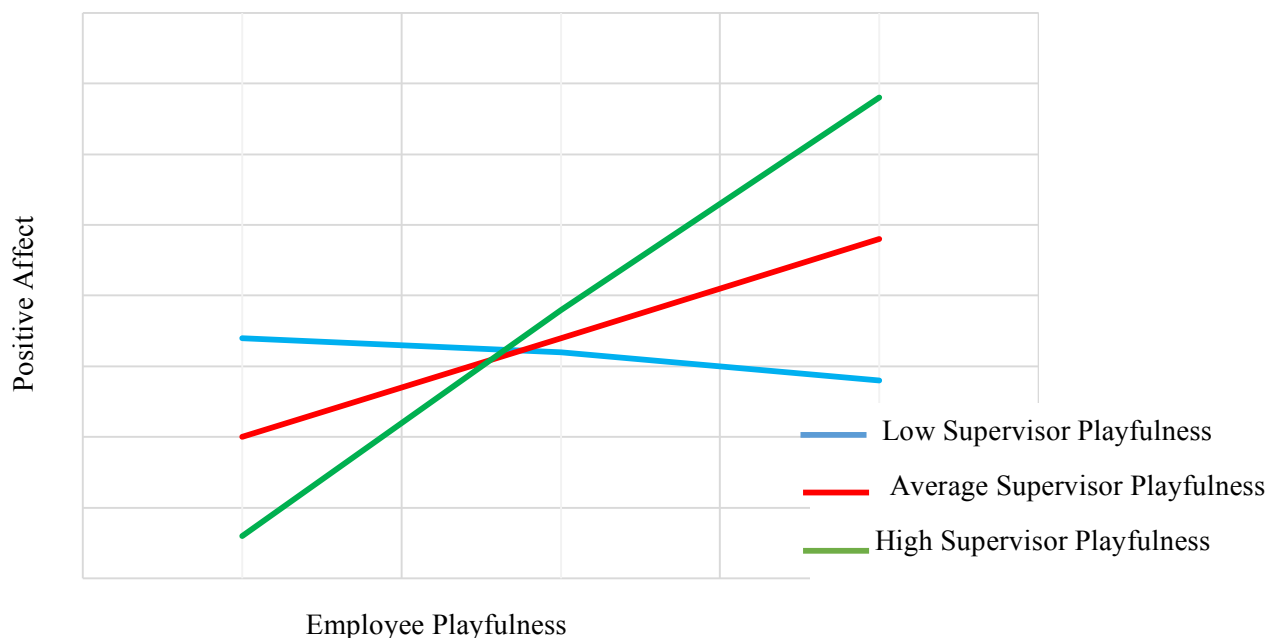
¹² See also Table 11 below for summary of direct and indirect effect statistics for Studies 2a, 2b and 2c.

¹³ Note that the analyses were also run integrating positive affect and LMX into one model and excluding control variables. The same pattern of results was shown.

With positive affect acting as the mediator between employee playfulness and in-role performance, and including supervisor playfulness as both a first- and second-stage moderator, first-stage moderation was supported, $\Delta R^2 = .02$, $\Delta F(1, 384) = 7.95$, $p = .01$. At the first stage, the conditional effect of employee playfulness on positive affect was significant at high levels of supervisor playfulness, $effect = .12$, $p = .00$, 95% CI [.05, .20], but not at low levels of playfulness, $effect = -.01$, $p = .73$, 95% CI [-.08, .06]. See Figure 8 for the graphical representation of this relationship. Second-stage moderation was not supported, $\Delta R^2 = .00$, $\Delta F(1, 383) = .04$, $p = .84$. The indirect effect of the overall model was significant at high levels of supervisor playfulness, $indirect\ effect = .04$, 95% CI [.01, .09], but not at low levels, $indirect\ effect = -.00$, 95% CI [-.03, .02].

Figure 8

Study 2c: Moderating Effect of Supervisor Playfulness on Relationship between Employee Playfulness and Positive Affect (First-Stage Moderation)



- *LMX as Mediator* (Hypothesis 4b)

With LMX acting as the mediator between employee playfulness and in-role performance, and including supervisor playfulness as both a first- and second-stage moderator, first-stage moderation was supported, $\Delta R^2 = .02$, $\Delta F(1, 384) = 11.89$, $p = .00$. At the first stage, the conditional effect of employee playfulness on LMX was significant at high levels of supervisor playfulness, $effect = .30$, $p = .00$, 95% CI [.21, .38]. See Figure 9 for the graphical representation of this relationship. Second-stage moderation was not supported, $\Delta R^2 = .00$, $\Delta F(1, 383) = .66$, $p = .42$. The indirect effect of the overall model was significant at high levels of supervisor playfulness, $indirect\ effect = .07$, 95% CI [.02, .14], but not at low levels, $indirect\ effect = .01$, 95% CI [−.00, .04].

Figure 9

Study 2c: Moderating Effect of Supervisor Playfulness on Relationship between Employee Playfulness and Leader–Member Exchange (First-Stage Moderation)



4.5.2.2.7 Hypotheses 5a and 5b

Hypotheses 5a and 5b proposed that the conditional indirect effects of employee-reported playfulness in predicting counterproductive behaviours via positive affect and LMX will be stronger under high rather than low supervisor-reported playfulness both at the first

and second stages. PROCESS Model 58 was used to conduct the analyses, mediators were entered on a piecemeal basis and the covariates of age, gender and Big Five personality traits were controlled for.¹⁴

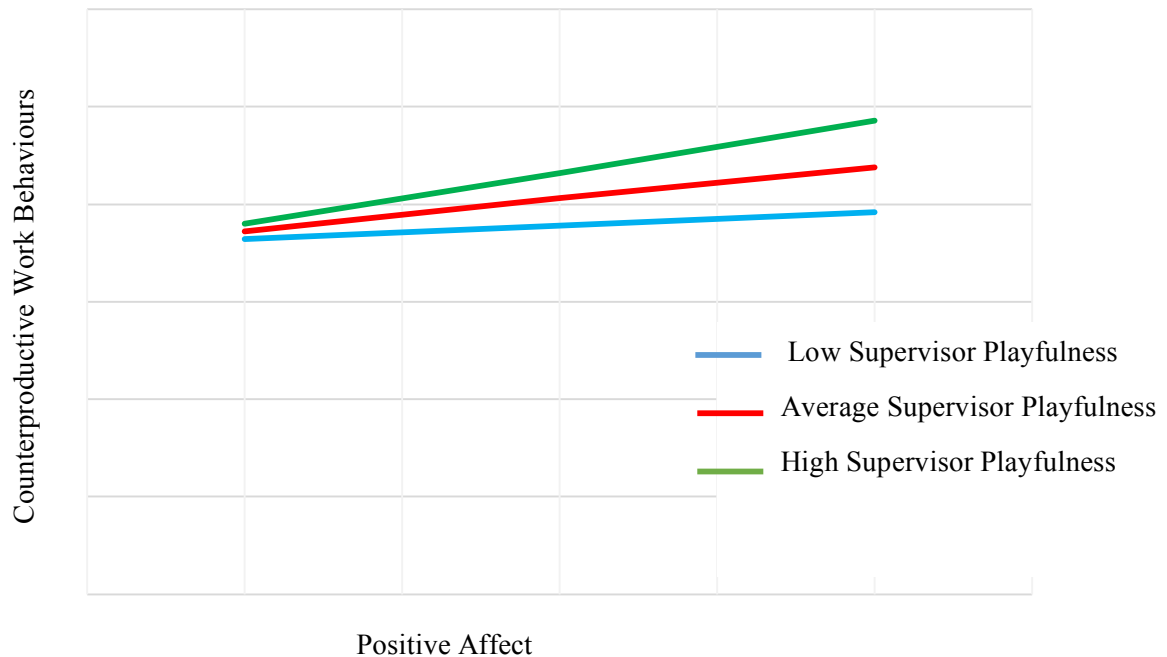
- *Positive Affect as Mediator (Hypothesis 5a)*

With positive affect acting as the mediator between employee playfulness and CWBs, and including supervisor playfulness as both a first- and second-stage moderator, first- and second-stage moderation was supported. At the first stage, the conditional effect of employee playfulness on positive affect was significant at high levels of supervisor playfulness, $effect = .12, p = .00, 95\% CI [.05, .20]$, but not at low levels of playfulness, $effect = -.01, p = .73, 95\% CI [-.08, .06]$; $\Delta R^2 = .02, \Delta F(1, 384) = 7.95, p = .00$. At the second stage, the conditional effect of positive affect on CWBs was significant at high levels of supervisor playfulness, $effect = .38, p = .00, 95\% CI [.18, .59]$, but not at low levels, $effect = .01, p = .45, 95\% CI [-.15, .35]$; $\Delta R^2 = .01, \Delta F(1, 383) = 4.02, p = .<.05$. See Figure 10 for the graphical representation of this relationship. The indirect effect of the overall model was significant at high levels of supervisor playfulness, $indirect\ effect = .05, 95\% CI [.01, .12]$, but not at low levels, $indirect\ effect = -.00, 95\% CI [-.02, .01]$.

¹⁴ Note that the analyses were also run integrating positive affect and LMX into one model and excluding control variables. The same pattern of results was shown.

Figure 10

Study 2c: Moderating Effect of Supervisor Playfulness on Relationship between Positive Affect and Counterproductive Work Behaviours (Second-Stage Moderation)



- *LMX as Mediator (Hypothesis 5b)*

With LMX acting as the mediator between employee playfulness and CWBs, and including supervisor playfulness as both a first- and second-stage moderator, first-stage moderation was supported, $\Delta R^2 = .02$, $\Delta F(1, 384) = 11.89$, $p = .00$. At the first stage, the conditional effect of employee playfulness on LMX was significant at high levels of supervisor playfulness, $effect = .30$, $p = .00$, 95% CI [.21, .38], and low levels of supervisor playfulness, $effect = .09$, $p < .05$, 95% CI [.01, .18]. However, the effect was stronger (and displayed a better significance value) at high levels of supervisor playfulness. Second-stage moderation was not supported, $\Delta R^2 = .00$, $\Delta F(1, 383) = .43$, $p = .51$. The indirect effect of the overall model was not significant.

4.5.2.3 Supplementary Analyses

Supplementary analyses were conducted to investigate the moderating role of supervisor playfulness on the direct relationships between employee playfulness and work-related outcomes. These analyses are transparent in being conducted post-hoc as per Hollenbeck and Wright (2017).

4.5.2.3.1 In-Role Performance

PROCESS Model 1 was used to test the proposed moderating role of supervisor playfulness on the relationship between employee playfulness and in-role performance. The analyses were performed including and excluding control variables (age, gender, tenure and Big Five), and the pattern of results was the same. No significant results were found, $\Delta R^2 = .00$, $\Delta F(1, 384) = 1.80$, $p = .18$.

4.5.2.3.2 Counterproductive Work Behaviours

PROCESS Model 1 was used to test the proposed moderating role of supervisor playfulness on the relationship between employee playfulness and CWBs. The analyses were performed including and excluding control variables (age, gender, tenure and Big Five), and the pattern of results was the same. Moderation was supported, $\Delta R^2 = .02$, $\Delta F(1, 178) = 8.68$, $p = .00$. Employee playfulness displayed a negative relationship with supervisor-rated CWBs ($B = -.47$, $p = .03$) when supervisor playfulness was included as a moderator variable in the model. The conditional direct effect was significant at high levels of supervisor playfulness, $effect = .26$, $p = .00$, 95% CI [.13, .39], but not at low levels, $effect = .01$, $p = .90$, 95% CI [−.12, .14].

4.5.3 Discussion

The findings of Study 2c provide partial support for the hypotheses. Hypotheses 1a and 1b, that playfulness would be positively related to positive affect and LMX, was supported. This replicates the findings above and provides support for the argument motivated

by COR theory that employees may use playfulness as a resource in and of itself, to be reinvested to gain additional resources, specifically, to experience improved mood and happiness at work, and to develop a closer relationship with their supervisor. These are both important motivators for being playful at work, and although these findings may seem intuitive (i.e. it makes sense that individuals would be playful to feel better and develop relationships), it is important to employees, managers and even organisations, to know that being playful can be beneficial at work and that this argument is supported empirically.

For Hypotheses 2 and 3, it was predicted that the relationship between employee-reported playfulness would be indirectly related to in-role performance and CWB via positive affect and LMX. In this sample, the indirect relationships between playfulness, both mediators and in-role performance were significant. This is an interesting finding that has important implications both for managers and for organisations. Specifically, it shows that playfulness can enhance in-role performance. Therefore, it could be encouraged in the workplace. This finding also sheds light on *how* playfulness benefits in-role performance, that is, through enhancing the mood of employees and improving their relationships with the supervisors. However, only the indirect effect of employee playfulness in predicting CWBs via positive affect was supported (in the expected positive direction). This finding gives important insights into the potential detrimental effects or ‘dark side’ of playfulness at work. Being playful and feeling happy may not only improve in-role performance but also increase engagement in CWBs, specifically those of an interpersonal nature. Interpersonal deviance includes behaviours such as teasing a co-worker. This suggests that the focal employee may think they are engaging in light-hearted fun at work, but others may perceive this as bullying or negative behaviour. Therefore, there are important implications regarding how acts of play are perceived in the workplace.

Hypotheses 4 proposed that the conditional indirect effects of employee-reported playfulness in predicting in-role performance via positive affect and LMX would be stronger under high supervisor-reported playfulness (first stage) and weaker under high supervisor-reported playfulness (second stage). In this sample, first-stage moderation was supported when positive affect and LMX were included as the mediator variables. Therefore, the relationships between playfulness and resource gain was stronger under high supervisor playfulness. Hypotheses 5 proposed that the conditional indirect effects of employee-reported playfulness in predicting counterproductive behaviours via positive affect will be stronger under high rather than low supervisor-reported playfulness both at the first and second stages. In this sample, a first- and second-stage moderation was supported when positive affect was included as the mediator, so the relationship between playfulness, psychological resources and CWBs was stronger under high levels of supervisor playfulness.

The supported first-stage moderation results replicate the findings of Study 2b, whereby being highly playful with a supervisor (who is also highly playful) will strengthen the relationship between playfulness and resource gain. This is an important finding that has theoretical implications (i.e. it supports the COR theory argument that playfulness can be used as resource to gain additional resources and protect from resource loss) as well as practical ones (i.e. it suggests that managers should not be dismissive of playful organisational practices, particularly if they are also highly playful themselves). These findings also lend support to similarity-attraction theory, whereby the benefits of playfulness at work are more likely to be realised if both the employee and their supervisor are matched in their high levels of playfulness. However, the proposed second-stage moderated relationships were not consistently supported. This suggests that high supervisor levels of playfulness do not always strengthen the relationship between resource gain and work-related outcomes.

The aim of Study 2c was to provide constructive replication and to explore the proposed relationships in an Eastern population sample. The findings of this study contribute to empirical and theoretical knowledge in this field. For example, providing support for COR theory, this study showed a positive link between playfulness and two types of personal resources, psychological and relational. Then, it showed that these resources can be invested to protect from resource loss and to gain further resources to improve in-role performance. Further, it showed that playfulness can also act as a resource drain, leading to increased instances of CWBs. This study also showed that an employee's level of playfulness interacts with their supervisor's level of playfulness, leading to differentiated outcomes. These findings provide support for the instrumental and interpersonal motivators for engaging in play at work that are unique to an organisational context. However, there are limitations to this study and not all its hypotheses were supported. For example, the focal employees' supervisor provided ratings of work-related outcomes. This is a subjective measure, and if, for example, the employee and the supervisor have opposing levels of playfulness, it could influence the supervisor's ratings of in-role performance and CWBs. Future research should include additional measures of the outcome variables (including self-report and objective measures such as performance metrics).

4.6 General Discussion

A range of prominent organisations have embraced the idea that being playful at work can have a range of positive consequences, be they attitudinal, social or behavioural (Schmidt & Rosenberg, 2014). However, despite the generally accepted benefits of playfulness at work, a debate surrounds the role of play in the work context. As described in a recent review article (Petelczyc et al., 2018), there are two distinct views concerning the value being playful at work. In both the popular press and the academic literature, there are those who believe that playful individuals can serve as a distraction and that playing at work should be discouraged

(e.g. Dandridge, 1986). Conversely, there are those who believe that playing at work and adopting a playful approach to work activities can actually enhance one's on-the-job performance (Ellis, 1973), or, as stated by Roald Dahl, 'a little nonsense now and then, is cherished by the wisest men' (Dahl, 1972, p. 90). Therefore, this research contributes to the management literature, and to this debate more specifically, by examining individual differences in playfulness and its effects on two specific work-related outcomes.

Playfulness at work is an important topic worthy of further exploration for several reasons. First, if playfulness as a trait is considered stable over time, there are implications for academics as well as managers in learning how to most effectively harness the benefits and minimise the potential costs of being playful at work. Second, although playfulness was previously thought to feature only in the domain children, previous research has suggested that playfulness permeates the daily lives (both at home and at work) of adults. Given its potential impact on attitudes and performance at work and its increasing importance and prevalence (particularly to younger workers), this research is timely and necessary.

Playfulness has previously been considered an unappealing trait in an adult working population (Shen et al., 2014). However, in opposition to this view, many organisations and workplaces currently value and encourage a playful culture (J. B. Stewart, 2013). Playfulness at work can affect employees at the individual, team and organisational levels. For example, playfulness can result in increased creativity (Csikszentmihalyi, 1975; Ellis, 1973) and enhanced sense of community (Bowman, 1987; Dandridge, 1986).

Although something is known of the potential outcomes of playfulness at work, the study of play in adulthood remains a relatively unexplored topic of research, and what is known is inconsistent and fragmented across disciplines. Further, disagreement remains regarding the role and importance of playfulness in work contexts. Although the potential benefits of playfulness are known, as described above, there has been a systematic lack of

research into the potential ‘dark side’ of playfulness at work. This is a significant oversight, and thus, this study also takes a more balanced perspective in examining the potential ‘helpful’ as well as ‘harmful’ outcomes of playfulness at work. It also examines the mechanisms and boundary conditions specifying how and when this might occur.

In this chapter, a theoretical framework has been proposed and tested, which explains how and when playfulness in adulthood can influence in-role performance (i.e. how it can help) and CWBs (i.e. how it can harm). Specifically, this research has taken an overarching COR theory (Hobfoll, 1989, 2001) perspective to argue that being playful can increase one’s relational (LMX) and psychological (positive affect) resources, which, in turn, will affect two work-related outcomes. In this way, being highly playful at work may concern not only having fun but may also act as a resource in its own right, as well as a means to acquire and manage further resources. This research has also taken a similarity-Attraction perspective to investigate the conditional indirect effects, specifically the first- and second-stage moderating role of supervisors’ playfulness, in proposing that the association between employee playfulness, resources and outcomes may be strengthened depending on supervisors’ level of playfulness.

These assertions were investigated using three independent field surveys. First, Study 2a surveyed employee–supervisor dyads in the Philippines and investigated the direct relationship between playfulness and positive affect, as well as the role of positive affect as a psychological mechanism linking playfulness and in-role performance and CWBs. Second, Study 2b surveyed employee–supervisor dyads in the United States and expanded on Study 2a by also investigating the role of LMX as an outcome of playfulness and as a mechanism linking playfulness and in-role performance and CWBs. Study 2b also introduced supervisor playfulness as a potential boundary condition. Lastly, Study 2c collected data from a larger sample in testing the overall proposed research model.

4.6.1 How Playfulness Affects Two Work-Related Outcomes

COR theory (Hobfoll, 1989, 2001) argues that individuals aim to generate, regulate and maintain personal resources and invest these to overcome threats (Hobfoll, 1989). Based on this perspective, playfulness at work may concern not only having fun, but may also be a means to acquire and manage resources and to protect from resource loss. Viewing the outcomes of playfulness at work from this theoretical perspective, which has not previously been applied in this field, allows this research to make important theoretical contributions. Namely, it recognises that playfulness can be used as a resource to generate and maintain additional and current resources, and in doing so, it provides insights into the mechanisms linking playfulness to outcomes, and into the boundary conditions under which playfulness leads to either positive or negative outcomes.

4.6.2 Mediating Role of Personal Resources

4.6.2.1 Hypothesis 1

In accordance with COR theory, Hypotheses 1a and 1b predicted that employee-reported playfulness would be directly related to an increase in two types of personal resources (positive affect, psychological resource; and LMX, relational resource). Study 2a showed that playfulness was significantly positively related to positive affect, and Studies 2b and 2c both found that employee-reported playfulness was positively associated with positive affect and LMX.

Therefore, it can be said that playfulness is indeed used as a resource, which is invested to generate additional psychological and relational resources. Playfulness may also be used to protect from resource loss, by providing psychological protection, and in enhancing the relationship with one's supervisor so that they might offer some protection through their own network or through the exchange of material and non-material goods. Thus *Hypotheses 1a and 1b was supported.*

4.6.3 Playfulness as Being ‘Helpful’—Impact on In-Role Performance

4.6.3.1 Hypothesis 2

Hypothesis 2 proposed that employee-reported playfulness would be indirectly related to in-role performance via positive affect and LMX. Specifically, Hypothesis 2a predicted that playfulness would be positively indirectly related to in-role performance via positive affect (i.e. playfulness would increase positive affect, which, in turn, would improve in-role performance). This relationship was found in Study 2a and 2c, but not in Study 2b.

Hypothesis 2b predicted that playfulness would be positively indirectly related to in-role performance via LMX (i.e. playfulness would increase LMX, which, in turn, would improve in-role performance). This relationship was found in Study 2b and 2c (and was not tested in Study 2a).

Taken together, the results overall support the predicted indirect relationships between playfulness, positive affect, LMX and in-role performance, whereby it can be said that playfulness is invested as a resource to generate additional (psychological and relational) resources, which are, in turn, invested to improve role performance. This finding is indicative of Hobfoll’s (1989, 2001) resource gain spiral, whereby the possession of resources leads to greater increases in additional resources. Thus, *Hypotheses 2a and 2b were supported.*

4.6.4 Impact of Playfulness on Counterproductive Work Behaviours

4.6.4.1 Hypothesis 3

Hypothesis 3 proposed that employee-reported playfulness would be indirectly related to CWB via positive affect and LMX. Specifically, Hypothesis 3a predicted that playfulness would be positively indirectly related to CWBs via positive affect (i.e. playfulness would increase positive affect, which, in turn, would increase CWBs). This hypothesis was partially supported. The indirect effect of employee playfulness in predicting CWBs via positive affect was found in Studies 2a and 2c (but not in Study 2b). However, in Study 2a, the relationship

between positive affect and CWBs (while significant) was not in the expected direction, and instead, a negative relationship was found between positive affect and CWBs.

Hypothesis 3b predicted that playfulness would be negatively indirectly related to CWBs via LMX (i.e. playfulness would increase LMX, which, in turn, would decrease CWBs). This hypothesis was supported in Study 2b (but not tested in Study 2a and not found in Study 2c).

The results in relation to Hypothesis 3 are somewhat conflicting. In one study, it was found that playfulness increased positive affect, which, in turn, increased CWBs (as predicted). According to this finding, although playfulness increases one's psychological resources in the first instance, it then 'drains' the resources required to perform the job, and subsequently, leads to employees being rated as 'slacking off' at work or not performing their tasks to the expected quality. This could be because they no longer have a plentiful supply of resources to draw upon when completing their work duties, or it could be because they continue engaging in play (to maintain their high levels of positive affect), rather than turning their attention to the work tasks at hand. The principal of resource loss spiral (Hobfoll, 1989, 2001) applies here, whereby those with fewer resources are more vulnerable to resource loss and an initial loss causes future loss. Specifically, resources 'lost' to play are unable to contribute to work tasks, which can result in further resource loss, such as disliking or distrust from a manager or co-workers.

However, in a second study, it was found that whereas playfulness increased positive affect, positive affect in fact decreased CWBs. This finding aligns more closely with the argument that playfulness can be 'helpful' at work. Specifically, positive affect is a psychological resource gained through being playful at work, which results in lower engagement of CWBs, such as task avoidance or producing low-quality work, because resources are available to contribute to better work and task completion.

It was also found that playfulness increased LMX, which, in turn, decreased engagement in CWBs. This provides further support for a COR theory perspective, since playfulness is used to increase relational resources, which provides employees access to a range of other social (e.g. access to networks) and material (e.g. greater training opportunities and better technology) resources. This results in decreased CWBs since the employee (according to the norm of reciprocity) feels they must ‘pay back’ their employer and does so by performing well in their job, achieving their objectives and not engaging in distracting or harmful behaviours at work. Thus, *Hypotheses 3a and 3b were partially supported.*

4.6.5 Moderating Role of Supervisor Playfulness

4.6.5.1 Hypothesis 4

Hypotheses 4a and 4b proposed that the conditional indirect effects of employee-reported playfulness in predicting in-role performance via positive affect and LMX would be stronger under high supervisor-reported playfulness (first stage) and weaker under high supervisor-reported playfulness (second stage).

Study 2b did not find significant results when positive affect was included as the mediator. However, when LMX was tested in the model, first- and second-stage moderation was supported. At the first stage, the conditional effect of employee playfulness on LMX was significant at high, but not at low, levels of supervisor playfulness. At the second stage, the conditional effect of LMX on in-role performance was weaker at high levels of supervisor playfulness. The conditional indirect effect of employee playfulness on in-role performance via LMX was supported for high, but not for low, supervisor playfulness.

In Study 2c, this hypothesis was partially supported (at the first stage only). A stronger positive relationship was found between employee-reported playfulness and LMX and positive affect when supervisor-reported playfulness was high, as opposed to low. The

conditional indirect effect (at first stage) via LMX and positive affect was supported for high, but not for low, supervisor playfulness.

Taken together, the results of the studies suggest that there was a stronger positive relationship between playfulness and positive affect and LMX when supervisor-reported playfulness was high, as opposed to low. That is, if an employee and their supervisor both report higher levels of playfulness, the employee will gain more psychological and relational resources because of this. This lends support to both COR and similarity-attraction theory perspectives, whereby an employee is more likely to benefit and gain resources if they and their supervisor are matched in their high levels of playfulness.

At the second stage, the relationship between LMX and in-role performance was weaker at high levels of playfulness. That is, the resources gained as a result of a supervisor and employee both being highly playful failed to translate into improved in-role performance. This could be because high playfulness and LMX in fact drained the employees' resources, since instead of devoting resources to their work tasks, they were engaging in play and working to strengthen their relationship with their boss. Perhaps then, by the time they had to re-focus on work responsibilities, the employees' resources were depleted. Probably, when their supervisor is low on playfulness, employees are more likely to go straight back to work and focus on their duties and responsibilities, hence enhancing their in-role performance.

Thus, *Hypothesis 4 was partially supported.*

4.6.5.2 Hypothesis 5

Hypotheses 5a and 5b proposed that the conditional indirect effects of employee-reported playfulness in predicting counterproductive behaviours via positive affect and LMX will be stronger under high rather than low supervisor-reported playfulness both at the first and second stages.

Again, Study 2b did not find significant results when positive affect was included as the mediator. However, when LMX was tested in the model, first-stage moderation was supported. At the first stage, the conditional effect of employee playfulness on LMX was significant at high, but not at low levels of supervisor playfulness. At the second stage, the conditional effect of LMX on CWBs was found to be non-significant. The conditional indirect effect of employee playfulness on CWBs via LMX was supported for high, but not for low, supervisor playfulness.

In Study 2c, this hypothesis was partially supported (at the second stage only). It was found that the positive association between positive affect and supervisor-reported counterproductive behaviour was significant when supervisor playfulness was high, as opposed to low, and the indirect effect was conditional on high supervisor playfulness. This suggests that employees may be dedicating too much of their resources to playing and being happy, but once it comes to work, they are more likely to produce low quality or a lower quantity of work. That is, they have ‘spent’ their resources and do not have enough available to assist in work task completion. This is even more likely to occur if their supervisor is also highly playful, potentially as they are engaging in play activities together. Thus, *Hypothesis 5 was partially supported.*

In invoking similarity-attraction theory to explain the moderating role of supervisor levels of playfulness, the question of perceived versus actual similarity is raised. In this research, actual similarity (according to self-report tools) between subordinate’s and supervisor’s levels of playfulness was measured. However, probably perceived levels of playfulness are in fact more important than actual levels. That is, outcomes depend on how playful an employee *perceives* their supervisor to be (or vice versa).

4.6.6 Theoretical Contributions

In conducting this series of three studies, this research acknowledges that there has been limited empirical research into adult playfulness, and little into playfulness in the workplace (Glynn & Webster, 1992), and responds to calls for systematic research in this area (e.g. Barnett 2012; Van Vleet & Feeney, 2015a). Previous inconsistencies and the fragmentation of past findings are addressed through the application of a rigorous overarching theoretical framework (COR theory), which is supplemented by similarity-attraction theory. The application of these two theories provides novel insights into the psychological mechanisms and boundary conditions through which playfulness leads to differential outcomes.

Although many theories have been used to explain the outcomes of playfulness at work (e.g. the theory of flow, Csikszentmihalyi, 1975; the stimulus-seeking perspective, Berlyne, 1960; the cathartic perspective, Ellis, 1973), these have provided limited direction about the underlying mechanisms through which playfulness can lead to specific outcomes. One theory that has previously been used to explain the outcomes of playfulness at work is the theory of flow (Csikszentmihalyi, 1975). According to this perspective, playfulness leads to positive outcomes because of the individual experiencing the state of flow. While in this state, individuals become completely absorbed in an activity, otherwise described as ‘being in the zone’. Although the theory of flow offers important insights, Csikszentmihalyi’s (1975) research has suggested that to the extent that being playful at work includes flow-producing activities, playfulness is likely to improve performance, but only when one’s work emphasises intrinsic rewards and has clear-cut demands. Given the high proportion of work that does not fall into this category, a more comprehensive theoretical model needed to be developed and applied.

Given the limitations of previous theoretical perspectives, viewing the outcomes of playfulness at work from a COR theory perspective, a theory that has not previously been applied in this field, has important theoretical implications. COR theory provides insights into the psychological mechanisms linking playfulness to outcomes and provides an answer to the question of *how* playfulness leads to specific positive work-related outcomes. Specifically, it is argued that employees who are more playful in the work context invest this resource to acquire, build and maintain additional personal resources, specifically, positive affect (psychological resource) and LMX (relational resource). This, in turn, affects in-role performance and CWBs.

The current research findings make an important theoretical contribution by investigating the role of different types of mechanisms linking playfulness and outcomes (not just the traditional cognitive mechanisms studied in the past) and provide support for the two key tenets of COR theory. The first tenet concerns resource *gain and* argues that people must invest resources to gain additional resources, or to protect/recover from resource loss. The second tenet, relating to resource *loss*, argues that resource loss is more important to us than resource gain and that initial resource loss leads to future loss (Halbesleben et al., 2014). This research provides support for these principles by showing that playfulness acts as a type of personal resource, which is invested by employees to gain additional resources in the form of positive affect and LMX (which both increased). Playfulness is also invested to protect from the potential loss of either of these two resources. The subsequent gain in personal resources is then reinvested, and additional gains are experienced as highly playful employees display improved in-role performance (because they have the cognitive, affective and relational resources available to them to assist them in performing their work tasks to a high standard).

Employees high in LMX are also motivated to maintain their additional resources, and this prevents them from engaging in CWBs since they seek to protect their relationship with

their supervisor and the additional resources associated with this relationship. This was shown as highly playful employees, with higher LMX, were less likely, as rated by their supervisor, to engage in CWBs. The findings concerning positive affect and CWBs are less conclusive but provide support for two arguments that support COR theory. First, positive affect can be used as a resource ‘gain’, which decreases engagement in CWBs (as shown in Study 2a). Alternatively, it can be considered a resource ‘drain’ (as shown in Study 2c), in that if resources are dedicated to play activities, sufficient levels are not left to meet the quality and quantity demands of their work.

Support is also provided for similarity-attraction theory, by showing that playfulness is more likely to result in resource gain if the focal employee and their supervisor are both highly playful. This theory argues that individuals experience positive feelings and relationships when they engage with others who are like them, as they reinforce their ideas and attitudes (Montoya et al., 2008). Here, it was shown that when an employee is highly playful, and so is their supervisor, this is more likely to result in increases in psychological and relational resources for the employee.

This research also makes an important theoretical contribution by investigating the potential negative outcomes of playfulness at work. As outlined earlier, the literature has displayed a biased view towards the positive outcomes of playfulness at work. The current study takes a more balanced perspective in examining the potential ‘helpful’ as well as ‘harmful’ outcomes of playfulness and addresses this gap in knowledge by leading the way in investigating the potential negative impact of playfulness. It is also the first to specifically examine the relationship between playfulness and CWBs, responding to calls for research into the ‘dark side’ of playfulness. This is important because playfulness resulting in CWBs, which at the most general level refers to any intentional behaviour on the part of an employee

viewed by the organisation as contrary to its legitimate interests (Sackett & DeVore, 2001), can cause damage at the individual, team and organisational levels.

4.6.7 Empirical Contributions

This research also makes many empirical contributions, in that it applies a more systematic approach to research on playfulness (responding to calls by Barnett, 2012 and Vleet & Feeney, 2015a), and it extends current knowledge by further investigating playfulness in adulthood, and in the workplace more specifically. This research also adds methodological rigour by applying two well-known and widely accepted measures of playfulness (the APS, Barnett, 2007; the Short Measure of Adult Playfulness, Proyer, 2013) and collecting data from multiple sources (i.e. employee and supervisor ratings) and over two time points (to reduce common method variance).

Another strength of this research is the samples assessed, which allow the results to be more widely generalised. Across the three studies, the sample size was very large ($N = 1013$) and data were collected from both Asia and America, and from part-time working MBA students as well as full-time working members of the general population. These findings contribute to the discussion on the short- and long-term consequences of playfulness and examines the affective and relational mechanisms and motivations linking playfulness and outcomes.

4.6.8 Practical Implications

This research also has important practical implications and can influence a range of audiences. First, at the individual level, employees will benefit from the knowledge of when and with whom to express high levels of playfulness. Research has shown that younger employees value playing and having fun at work, and thus, they pursue positions and organisations that encourage play (Fluegge-Woolf, 2014; Tews et al., 2012). Therefore, it is

important that researchers and practitioners have a sound understanding of the outcomes of playfulness at work, as well as how to ensure playfulness is helpful and not harmful.

Second, at the managerial level, supervisors can glean insight into when and with which subordinates they should express high levels of playfulness and how the traits of each interact to lead to certain work outcomes that they may wish to encourage or discourage. Research in this area can also assist managers in finding a balance when implementing and managing workplace play and when encouraging or discouraging playfulness in employees. This is important because although many employees support the concept of playing at work, others are more cautious and may resist the idea.

Lastly, at the organisational level, this research can influence the implementation of practices and policies surrounding play at work, inform team composition (i.e. pairing high and low playfulness levels) and assist organisations in implementing playful practices and in using play as a tool to attract and retain high-quality employees. Further, since the trait of playfulness remains stable as a characteristic over time (George, 1991), organisations may want to consider this in job placement and design. The implications of this research are also important because of how it can contribute to knowledge of antecedents of work-related outcomes, particularly in showing how in-role performance can be improved and how counterproductive behaviours can be avoided.

4.6.9 Limitations and Recommendations for Future Research

This is an interesting and innovative area of research, but this study has some limitations. Further, a range of directions for future research are discussed that can improve and build on the findings presented above. First, this study examined supervisor-rated work outcomes, but a supervisor could provide biased ratings, depending on their opinion of the focal employee. Hence, future research would benefit from including a combination of measurement methods for work-related outcomes. As a complementary measure, data could

be collected using self-report. It would also be beneficial to include a more objective outcome measure, such as organisational output/performance data. This would address potential biases in ratings provided by supervisors and could provide a more holistic view of an individual's in-role performance and engagement in CWBs. In addition, the CFA's performed demonstrate high correlations between playfulness and positive affect. This could be problematic, as it becomes difficult to disentangle and identify the impact of different individual-level variables. Previous research has shown playfulness and positive affect to be linked, and therefore, it is important that the effect of these on the outcome variables are not conflated. Future research should investigate this issue further, isolating the impact of each variable.

Although data in this study were collected both in Eastern (Studies 2a and 2c, Philippines) and Western (Study 2b, United States) countries, the impact of culture was not specifically examined. Hence, additional research in the form of a cross-cultural study could explore the proposed relationships across other geographical locations. Moreover, playfulness is typically considered a positive trait in Western culture but has negative connotations in some Eastern cultures (Pang & Proyer, 2018). Thus, there is scope to investigate the societal and cultural factors that may affect the expression and outcomes of playfulness at work. Further, playfulness may be more highly valued in Western societies where individualistic thinking and self-expression is valued (Barnett, 2017). In countries whose native cultural values are incompatible with the expression of playfulness at work, are the instances of playfulness likely to be as high? What would the outcomes of playfulness at work in such cultures be? Moreover, what type of influence would one's supervisors' levels of playfulness have? This type of research could also contribute to a discussion of playfulness as being socially constructed versus an inherent trait.

As in previous research, it is also challenging to disentangle playfulness as a trait and play as an activity/behaviour. From these findings, it is difficult to determine whether the

relationships found between playing, positive affect, LMX and work-related outcomes are a result of the individual being more *playful* overall, that is, having a more playful disposition. Alternately, are playful individuals more likely to engage in play as a behaviour and is it play activities that produce the relationships observed in this study? In addition, the effects of playfulness on in-role performance and CWB's (and indeed whether these are perceived as positive or negative) may be contingent on whether employees focus their resources (be they psychological, emotional, material etc.) on engaging in task-related or non-task-related play activities. That is, engaging in task-related play may be perceived more positively, and may contribute to enhanced in-role performance (for example, a brainstorming type play activity). In comparison, engaging in non-task-related play may be perceived more negatively, and considered a 'distraction' from the task at hand, and therefore a form of CWB. This issue and the questions raised above are complicated as play as a trait and as a behaviour has often been conflated in the past and require further research.

Future research could also compare results across specific organisations and industries, since, for example, previous authors have shown that certain industries, such as creative industries and the information technology industry, are more likely to encourage the incorporation of play into work (Hunter et al., 2010). Taking this into consideration, would the relationships shown here be more pronounced in such industries? Are supervisors in these types of jobs more likely to be playful and encourage play themselves? It would also be interesting to examine other work-related outcomes as dependent variables. For example, related to the point above, research could further explore the influence of playfulness on creativity, since previous research has shown that the relationship between play and creativity is largely driven by positive affect (Isen et al., 1987).

Future research could also take an interactionist perspective and investigate the impact of contextual factors on the proposed relationships. In taking this perspective, which views

behaviour as the result of traits interacting with situational cues (Shen et al., 2014), researchers could investigate the role of several factors including organisational culture (particularly a highly playful or fun culture), climate and norms; leadership and leader support for play; communication; team relations; and concern for performance. According to this perspective, highly playful employees will seek to express their playfulness in a workplace setting and that the trait of playfulness will be expressed if the situation or work context allows it. Playful expression could be facilitated through a highly playful culture (e.g. that of Google and Facebook), through having a supervisor who encourages the expression of this trait and creates a playful atmosphere at work or in industries (e.g. creative industries and the information technology industry) that value a playful approach. Guided by this theory, it is argued that contextual factors could act as moderators in the proposed relationships between playfulness, mediators and outcomes.

Additional research could also investigate how the processes underpinning the outcomes of playfulness differ according to the types and levels of play. For example, outcomes may differ if one is independently playful, or playful in a group or social situation. This research investigated individual-level outcomes of playing at work, that is, in-role performance and CWBs. However, a COR theory perspective could also be used to develop a model that examines the potential team- or organisation-level outcomes of play. There may be differences if individuals are more playful with their co-workers than they are with a manager or a subordinate. Further, playfulness may lead to additional increased interpersonal cognitive-affective resources, such as liking and trust from others. This could result in improved team-level outcomes, such as team bonding, enhanced team performance, better-quality communication and an overall positive organisational culture. In contrast, playfulness could also lead to negative interpersonal outcomes. For example, the colleagues of an employee who they observe to be playing continuously may become frustrated with the

individual, leading to disliking and distrust. This, in turn, could harm team-level outcomes, such as performance and cohesion. Related to this is the question of who benefits from playfulness since previous research has failed to specify whether being playful benefits only the initiator or can benefit all individuals involved in a playful situation.

4.7 Conclusion

Despite the recent increase in popularity of the concept of playing at work, systematic empirical research investigating and explaining the links between dispositional playfulness and work-related outcomes is lacking. Studies 2a, 2b and 2c used a field survey design to investigate play—operationalised as a trait, or playfulness—and its impact on two work-related outcomes (in-role performance and CWBs) via psychological (positive affect) and relational (LMX) resource gain. They also investigated the moderating role of supervisor levels of playfulness. These studies applied methodological rigour by using a multi-wave, time-lagged, co-rater survey design with a large, cross-cultural sample. In doing so, this chapter supplements the laboratory research on play as a state or activity (Empirical Studies 1a and 1b) through constructive replication (i.e. by investigating an alternative operationalisation of play) and through the application of COR theory as an overarching theoretical perspective. Novel outcomes of playfulness are studied, and the potential negative effects of play on these outcomes are examined (i.e. how and when play can lead to worsened in-role performance and increased CWBs). In examining supervisor levels of playfulness, these studies extend current research by considering an important instrumental and interpersonal aspect of play in an organisational context. Specifically, employees may engage in play with their supervisor to gain additional resources to improve their work outcomes, and not merely for amusement and fun.

Chapter 5: Concluding Remarks

Very few would dispute the benefits of play to a child's development. Children are given toys and have playtime structured into their days (A. M. Brown & Stenros, 2018). Their play is perceived as functional and fundamental to their educational and social development (Sutton-Smith, 1997). Parents are encouraged to play with their children to facilitate 'healthy' social development, and play therapy is used to address certain developmental issues (Axline, 2012, as cited in A. M. Brown & Stenros, 2018). However, children do not grow out of the benefits of play (A. M. Brown & Stenros, 2018). If play is necessary for development, then adults should 'grow out' of the need to play, and those who continue to do so may be considered by some to be abnormal or even unhealthy (A. M. Brown & Stenros, 2018). Nevertheless, anecdotal observations and academic research have both suggested that being playful is just as common in adulthood as in childhood and may in fact increase with age (Guitard et al., 2005) and that the benefits of play remain even into adulthood.

The related literature has shown that at work, adults approach and accomplish practical and serious tasks in a playful manner (e.g. Abramis, 1990; Csikszentmihalyi, 1975; Roy, 1959), and this can result in a range of benefits at the individual, team and organisational levels. For example, play at work (operationalised as a state or activity) provides emotional benefits, including emotional relief (Locke, 1989) and reduction in stress, fatigue and boredom (DesCamp & Thomas, 1993; Hunter et al., 2010; Roy, 1959; Sørensen & Spoelestra, 2011). It has been related to improved attitudinal outcomes, such as increased job satisfaction (Abramis, 1990; Rood & Meneley, 1991), employee voice (Locke, 1989; Sørensen & Spoelestra, 2011) and organisational involvement (Abramis, 1990). Cognitive benefits at the individual level include increased sense of competence (Abramis, 1990), creativity (Hunter et al., 2010; Russ & Wallace, 2013) and divergent thinking and problem-solving (Jacobs & Statler, 2006). Task-related advantages of play at work include increased task involvement and interest and training transfer (Webster & Martocchio, 1993). On a team level, play

increases trust (Hunter et al, 2010) and bonding and social interaction (Roy, 1959; Sørensen & Spoelestra, 2011), and it contributes to social cohesion (Roy, 1959) and the development of a sense of solidarity (Locke, 1989). On an organisational level, play (as an activity) at work contributes to the creation of a friendly atmosphere and high commitment culture (Sørensen & Spoelestra, 2011) and improves organisational decision-making (Pors & Andersen, 2015) and creativity (West et al., 2013).

Playfulness (or play operationalised as trait) has also been shown to provide a range of benefits in an organisational context. For example, on an individual level, playfulness is linked to emotional benefits, including increased optimism and positive affect (Proyer & Ruch, 2011; Yarnal & Qian, 2011; Yue et al., 2016) and decreased stress (Yarnal & Qian, 2011). Highly playful individuals are more likely to display attitudinal superiority in their ability to embrace challenge and cope with failure (Guitard et al., 2005), display an innovative attitude (Glynn & Webster, 1993) and experience greater intrinsic motivation (Amabile et al., 1994; Glynn & Webster, 1993). Cognitively, playful employees exhibit greater cognitive spontaneity, creativity and adaptability to change (Guitard et al., 2005; Yarnal & Qian, 2011). The task-related benefits of being more playful include improved task performance and involvement (Bozionelos & Bozionelos, 1999; Glynn & Webster, 1992, 1993; Webster & Martocchio, 1992), learning (Webster & Martocchio, 1992) and work engagement and innovative behaviour (Hurmelinna-Laukkanen et al., 2016). In addition, on a team level, playfulness as a trait increases and improves interactions with others (Yarnal & Qian, 2011).

However, despite the range of benefits described, some believe that play serves only as a distraction from work and thus argue that the two domains should be kept entirely separate (J. D. Thompson, 1967; Weber, 1930). Indeed, research has shown that play can reduce organisational involvement (Abramis, 1990) and negatively affect task performance (Abramis, 1990; Sørensen & Spoelestra, 2011).

Despite these findings about the effects of play at work, there remain several gaps in existing knowledge as well as interesting and important avenues for research. First, previous research on play at work is fragmented and inconsistent, given that studies have been spread across several disciplines, including psychology and management. Depending on the discipline and the variables of interest, a range of theories have been drawn upon, resulting in a lack of theoretical cohesion. Numerous theories have been applied in examining the drivers (e.g. operant conditioning theory, Skinner, 1954) and outcomes (e.g. cathartic theory, Ellis, 1973; theory of flow, Csikszentmihalyi, 1975) of play. However, these are lacking in their specification of how and when play at work leads to certain outcomes, and an overarching theoretical framework that encompasses motivators, outcomes, mechanisms and boundary conditions has not yet been applied.

The lack of a coherent theoretical framework for studying play at work has resulted in considerable confusion surrounding how exactly to define this concept. Play has been confounded with a range of similar concepts (e.g. fun and leisure time), and this lack of definitional convergence and clarity has made it difficult to determine its precise effects in an organisational context. It is also important not to conflate play as a trait with playfulness as a personality trait or individual difference, since the role of each operationalisation is important and should not be confused. In addition, studies have not defined and investigated the motivators and outcomes of different types of play at work. For example, play can be independent or social and structured or unstructured; it can occur organically/spontaneously or is organisationally imposed. The potential outcomes of distinct types of play may vary widely, and thus, this topic warrants further investigation.

The literature has displayed a biased view towards the positive outcomes of play at work. Indeed, this bias can be observed from the fact that many benefits of play are listed in the previous sections, whereas only minimal research findings are available on the detrimental

or harmful effects of play. A more balanced investigation into the positive as well as negative effects of work is needed, with consideration given to its potential 'dark' side. This includes the potential negative impact of play on in-role performance and negotiation, as well as its likelihood of resulting in counterproductive work behaviours (CWBs).

The research has been lacking with regard to the impact of play on several common work-related outcomes. Take negotiation for example. Anecdotal and observational evidence have both suggested that play can have a positive impact on negotiation performance (consider business deals happening on the golf course). However, there has been a lack of empirical and systematic research in this area. Claims made in the popular press have not been subjected to rigorous empirical testing, and thus, trustworthy empirical support for this argument has not been provided. Engaging in an empirical investigation, utilising methods with high internal validity that allow us to draw causal inferences, provides support for the notion of play activities being used in organisations to gain certain advantages.

The organisational context produces features and motivators of play that do not otherwise exist in play in adulthood, and certainly not among children. While it is well accepted that children engage in play purely for in-the-moment fun and enjoyment, it is argued that employees in a workplace may engage in play for instrumental, not just hedonic reasons. Further, certain interpersonal aspects of engaging in play at work do not otherwise feature when adults engage in play in their free time. Specifically, individuals may choose to engage in play at work with people they do not like but who they believe could be instrumental to their career success (e.g. their immediate supervisor). These interlinked motivators (instrumental and interpersonal in nature) are unique to the context of work, but have not been empirically investigated.

Although empirical research has been conducted on many antecedents and outcomes of play, little attention has been paid to factors that influence the effects of play. Further,

systematic empirical research into the potential mechanisms and boundary conditions linking play to outcomes is lacking. For example, the stimulus-seeking perspective (Berlyne, 1960) argues that increased pleasure/enjoyment is the proposed mediator between play and performance. In addition, contextual factors, such as industry type, could act as moderators, strengthening the relationship between play and outcomes. However, these relationships have not been scientifically tested. Therefore, systematic, and empirical, investigation guided by an overarching theoretical framework of potential moderating and mediating variables is required.

This program of research focusses on two different, yet equally as important spheres of play – play activities and playful traits, and in doing so, contributes to the field by taking a balanced perspective in examining the mechanisms, conditions and outcomes of play through addressing the question: *How and when can different types of play lead to either positive or negative work-related outcomes?* To this end, this program of research examined the following. First, it organised and analysed the current state of knowledge of the field and provided conceptual and definitional clarity of the different types and operationalisations of play at work. Second, it also addressed previous inconsistencies and the fragmentation of the literature by applying a rigorous overarching theoretical framework, COR theory (Hobfoll, 1989). This perspective facilitated the examination of why people engage in different types of play and allowed to theorise and make predictions concerning the mechanisms linking play to work-related outcomes, and the conditions under which this may occur. Third, this research investigated novel outcomes of play in a work context (e.g. negotiation), which previous studies had not investigated empirically or systematically. It also addressed the current bias towards the positive aspects of play by taking a more balanced perspective and considering the ‘dark’ side of play at work. Finally, this research investigated certain unique aspects of

play in an organisational context: the interpersonal and instrumental drivers and effects of engaging in play at work with negotiation partners, colleagues and supervisors.

5.1 Findings of this Program of Research

Overall, the findings of this program of research indicate that play is an important factor to be considered in a workplace context. Owing to the changing landscape of the way in which work occurs, and the higher value that younger employees place on playing and having fun, the prevalence of play at work is increasing. Therefore, although employees and employers may have differing opinions of the value of being playful at work, it is important to study the potential effects of play to inform practices concerning play. The findings of the two empirical studies suggest that play and playfulness significantly affect work-related outcomes. Engaging in structured social play positively affects negotiation performance. Being highly playful improves mood and relationships (particularly with one's supervisor), enhances in-role performance and influences the likelihood of engaging in CWBs. In addition, these relationships may be strengthened if one's supervisor is also highly playful. These findings have theoretical and practical significance in that they shed light on the specific mechanisms and boundary conditions linking play and outcomes, which can be translated into playful policies and practices in the workplace.

5.1.1 Chapter 2: Integrative Literature Review

Chapter 2 provided an integrative review of the findings of studies examining the consequences of play at work. This review was published in an integrative review article in the *Journal of Management*.¹⁵ It integrated a previously fragmented and inconsistent knowledge base and presented a more coherent understanding of existing knowledge about play at work. This chapter discussed definitions of play at work operationalised as an activity,

¹⁵ Reference: **Petelczyc, C. A.**, Capezio, A., Wang, L., Restubog, S. L. D., & Aquino, K. (2018). Play at work: An integrative review and an agenda for future research. *Journal of Management*. (ABDC ranking: A*, Financial Times 50)

as a trait and as an organisational feature. To achieve conceptual clarity, one definition of play at work (as an activity) was presented and discussed in detail. In this definition, play has been described as ‘an activity or behaviour that (a) is carried out with the goal of amusement and fun, (b) involves an enthusiastic and in-the-moment attitude or approach, and (c) is highly interactive among play partners or with the activity itself’ (Van Vleet & Feeney, 2015b, p. 640). The chapter presented and discussed frequently used theoretical approaches to the study of play at work, including the stimulus-seeking perspective, the operant conditioning perspective, the flow theory, the cathartic nature of play and the social and cognitive processing perspectives. The antecedents and consequences of play and playfulness at work were presented and categorised according to individual level, task-related/team and relational levels and organisational level. Finally, directions for theory and future research were presented.

5.1.2 Chapter 3, Empirical Study 1: Consequences of Different Types of Social Play on Negotiation Performance

Studies 1a and 1b used an experimental design to explore the effects of two different types of play, operationalised as a state or activity, on negotiation performance. It was predicted that structured social play would have a strong positive impact on negotiation performance. Motivated by the COR and dual-concern theories, it was proposed that engaging in structured social play would improve the mood of negotiation partners (i.e. improve positive affect) and would enhance their relationship, transforming them from strangers to friends. As a result, it was thought that partners would enter the negotiation optimistically and would care more for the outcomes of the other person. This would lead to an improved joint negotiation outcome. However, this outcome would occur only if play were considered authentic and genuine, and not instrumentally motivated. Study 1a tested the direct effect of play on negotiation performance. Study 1b extended this by introducing two mediator

variables (positive affect and relationship quality) and a moderator variable (instrumental motive).

Next, Table 13 is presented, which includes each hypothesis from Chapter 3 and indicates whether the experimental results supported these hypotheses. As shown in this table, only the positive main effect of structured social play on negotiation was found. In Studies 1a and 1a, it was found that those in the structured social play condition performed significantly better on the joint negotiation task compared with those in the non-structured social play condition. However, the hypothesised mechanisms (positive affect and improved relationship quality) and boundary condition (instrumental motive for play) were not supported. Several potential reasons for these findings were discussed in the chapter. Although the hypothesised mediators (positive affect and relationship quality) and boundary condition (motive for play) were not supported in this study, it is an important finding that structured social play can have a positive impact on negotiation. This finding suggests that the *type* of play matters and that it can be beneficial in a work context. This finding also provides empirical support for the anecdotally accepted notion that business deals can occur successfully in a play setting, such as on the golf course. The argument is presented that it is the shared rules, the specified outcomes, the time and space boundaries and the sense of achievement relating to the structured nature of social play that make it particularly beneficial in the negotiation context. However, more research is required into the mechanisms and boundary conditions through which this might occur.

Table 13

Hypotheses and Findings of Empirical Studies 1a and 1b

Hypothesis	1A–Pilot	1B
<i>1. Structured social play will have a stronger positive effect on joint negotiation performance compared with unstructured social play.</i>	✓	✓

2. Compared to unstructured social play, structured social play will have a stronger indirect positive effect on negotiation performance via relationship quality, such that this type of play increases the quality of the relationship between negotiators, which, in turn, enhances negotiation performance.	NA	X
3. Compared to unstructured social play, structured social play will have a stronger indirect positive effect on negotiation performance via positive affect, such that this type of play increases the positive affect of negotiators, which, in turn, enhances negotiation performance.	NA	X
4a. Instrumental motive (compared to non-instrumental motive), will more strongly moderate the mediating effect of relationship quality between structured social play (compared to unstructured social play) and negotiation performance, such that the indirect positive effect of structured social play on negotiation performance via relationship quality becomes stronger when play is genuine and not instrumentally motivated.	NA	X
4b. Instrumental motive (compared to non-instrumental motive), will more strongly moderate the mediating effect of positive affect between structured social play (compared to unstructured social play) and negotiation performance, such that the indirect positive effect of structured social play on negotiation performance via positive affect becomes stronger when play is genuine and not instrumentally motivated.	NA	X

5.1.3 Chapter 4, Empirical Study 2: Playfulness at Work—When Can It Help and When Can It Harm?

Studies 2a, 2b and 2c operationalised play as a trait (playfulness) and used a field survey design to investigate its effect on two different work-related outcomes: in-role performance and CWBs. Motivated by COR theory, it was predicted that playfulness can be ‘invested’ as a resource to improve one’s mood and to develop a closer relationship with one’s supervisor. An increase in positive affect should improve job performance by offering psychological protection from stress but would also increase instances of CWBs as employees seek to maintain their playful state and drain resources intended for their work. An enhanced relationship with one’s supervisor would afford access to additional resources (both material and non-material), which would improve in-role performance and decrease instances of CWBs since one feels a sense of loyalty to the supervisor and seeks to protect one’s relational

resources. Motivated by similarity-attraction theory, it was hypothesised that high (and similar) levels of supervisor playfulness strengthen the relationship between playfulness and resource gain, and between resource gain and engagement in CWBs, but weaken the relationship between resources and in-role performance.

Study 2a investigated the role of positive affect as the proposed psychological mechanism linking playfulness and supervisor-rated in-role performance and CWBs. Study 2b offered an empirical extension on Study 2a through constructive replication and the introduction of an additional mediator variable (leader–member exchange [LMX]) and a boundary condition (supervisor levels of playfulness). Study 2c constructively replicated the models tested in Studies 2 and 2b and extended these findings by making methodological improvements (e.g. recruiting a larger sample size, employing a more rigorous survey and using alternate measures) and by collecting data in an alternative cultural context.

Table 14 includes each hypothesis and indicates whether these were supported; as can be noted, the findings were somewhat inconsistent. However, across the three studies it was shown that playfulness was positively associated with psychological as well as relational resources, and thus, playfulness can be considered a resource in itself, which is invested to generate additional resources (Hypothesis 1).

Table 14*Hypotheses and Findings of Empirical Studies 2a, 2b and 2c*

Hypothesis	2A	2B	2C
<i>1a. Employee-reported playfulness will be directly related to an increase in positive affect.</i>	✓	✓	✓
<i>1b. Employee-reported playfulness will be directly related to an increase in leader–member exchange.</i>	NA	✓	✓
<i>2a. Employee-reported playfulness will be indirectly positively related to in-role performance via positive affect.</i>	✓	X	✓
<i>2b. Employee-reported playfulness will be indirectly positively related to in-role performance via leader–member exchange.</i>	NA	✓	✓
<i>3a. Employee-reported playfulness will be indirectly positively related to counterproductive work behaviours via positive affect.</i>	Partial (significant relationship but in the opposite direction)	X	✓
<i>3b. Employee-reported playfulness will be indirectly negatively related to counterproductive work behaviours via leader–member exchange.</i>	NA	✓	X
<i>4a. The conditional indirect positive effects of employee-reported playfulness in predicting in-role performance via positive affect will be stronger under high supervisor-reported playfulness (first stage) and weaker under high supervisor-reported playfulness (second stage).</i>	NA	X	Partial (first-stage moderation was supported)
<i>4b. The conditional indirect positive effects of employee-reported playfulness in predicting in-role performance via leader–member exchange will be stronger under high supervisor-reported playfulness (first stage) and weaker under high supervisor-reported playfulness (second stage).</i>	NA	✓	Partial (first-stage moderation was supported)
<i>5a. The conditional indirect positive effects of employee-reported playfulness in predicting counterproductive behaviours via positive affect will be stronger under</i>	NA	X	✓

Hypothesis	2A	2B	2C
<i>high rather than low supervisor-reported playfulness both at the first and second stages.</i>			
5b. <i>The conditional indirect negative effects of employee-reported playfulness in predicting counterproductive behaviours via leader–member exchange will be stronger under high rather than low supervisor-reported playfulness both at the first and second stages.</i>	NA	Partial (first-stage moderation was supported)	Partial (first-stage moderation was supported)

Taken together, the results overall support the predicted indirect relationships between playfulness, positive affect, LMX and in-role performance, whereby it can be said that playfulness is invested as a resource to generate additional resources, which are, in turn, invested to improve performance (Hypothesis 2). The findings relating to the indirect relationships between playfulness, positive affect, LMX and CWBs were less clear-cut (Hypothesis 3). In one study, it was found that playfulness increased positive affect, which, in turn, increased CWBs (as predicted). However, in a second study, it was found that whereas playfulness increased positive affect, positive affect in fact decreased CWBs. In one study, it was found that playfulness increased LMX, which, in turn, decreased engagement in CWBs.

Next, two of the studies examined the moderating role of supervisor levels of playfulness. The results suggest that there is a stronger positive relationship between playfulness and positive affect and LMX when supervisor-reported playfulness was high, as opposed to low (first-stage moderation). At the second stage, it was found that the relationship between LMX and in-role performance was weaker at high levels of supervisor playfulness (Hypothesis 4). When CWBs were included as the outcome variable (Hypothesis 5), first-stage moderation was supported when LMX was included as the mediator and second-stage moderation was supported when positive affect acted as the mediator. However, the findings were not consistent across the two studies.

5.2 Integration of Findings

The aim of this program of research was to investigate the following: What are the effects of play at work, and how and when can different types of play lead to positive or negative work-related outcomes? To address these questions, three chapters were presented: an integrative literature review and two empirical papers. Taken together, the research findings indicate that play and playfulness can have a significant effect on several work-related outcomes.

First, structured social play, defined as play that has a predetermined structure and rules of engagement that are agreed upon by players, has a positive effect on negotiation performance. Specifically, stranger dyads who engage in structured social play are more likely to work together to reach an integrative ‘win-win’ agreement, compared with negotiators who engaged in a free-play activity. This finding suggests that specific types of play can have different consequences in a workplace setting and that a play activity that facilitates working together to achieve a measurable objective results in benefits that ‘spill over’ into the negotiation context. Further, it is argued that engaging in this type of play transforms the relationship between negotiators from that of strangers to friends. This means each person is more likely to care for the outcomes of the other negotiation partner, lines of communication are opened and both are willing to make themselves vulnerable by disclosing their desired outcomes, which facilitates the achievement of a better outcome for both.

Second, playfulness is related to increased positive affect and LMX. That is, employees who are highly playful are more likely to experience positive mood and develop closer relationships with their immediate supervisors. The increase in these two types of personal resources affects both in-role performance and CWBs. Specifically, it was shown that playfulness improved in-role performance as rated by one’s supervisor (via positive affect and LMX). Another benefit of playfulness was that it was negatively related to CWBs as rated

by one's supervisor (via LMX). That is, an employee who is highly playful, develops a close working relationship with their supervisor. They use LMX to their advantage, and since they do not want to risk losing this relationship, they are less likely to engage in CWBs. However, one detrimental outcome shown of high levels of playfulness is that it increases engagement in CWBs (via positive affect). This may be because employees seek to maintain their 'happy' state by choosing not to return to work, or because the type of play that they engage in (e.g. teasing others) is perceived negatively by the target, even if it was not intended this way. It was shown that one's supervisors' level of playfulness is an important factor that influences these relationships, and that overall, being a highly playful employee with a highly playful supervisor will strengthen these relationships, particularly in relation to resource gain. That is, if the employee and the supervisor are both highly playful, the employee is more likely to experience improved mood and a closer relationship because of the employee's playfulness.

Overall, this program of research could define, conceptualise and explore the effects of different types and operationalisations of play: structured social play, unstructured social play, and playfulness as an individual difference. The results showed that play can have important benefits in an organisational setting: It can improve negotiation performance, enhance in-role performance and reduce CWBs. However, it also has a 'dark' side and can be harmful, in that it can (in certain circumstances) increase CWBs. Moreover, the results showed that play influences these work-related behaviours through an increase in personal resources, particularly those of a psychological and relational nature, and that this effect is more likely to occur when one's supervisor is also highly playful. However, further research is required into the role of instrumental motive for play, and the mechanisms linking play as an activity and negotiation performance.

5.3 Contributions

Although insightful, the existing research on play at work is fragmented, inconsistent and lacks definitional clarity, which has resulted in theoretical, conceptual and measurement problems. The research is also biased towards positive outcomes, and systematic research into the potential mechanisms and boundary conditions linking play to outcomes is lacking. In addressing these gaps, this program of research makes several significant contributions to the play literature.

First, this research is original in its organisation and analysis of the current state of knowledge of play at work, as presented in Chapter 2 (an integrative review). Although reviews of the research on play and playfulness in adulthood have been conducted previously (Van Vleet & Feeney, 2015a, b), this is the first such review on the literature on play *at work*. In this chapter, theoretical and empirical research on play in the workplace was reviewed, focusing both on the antecedents and consequences of play at work. The integrative review also provided conceptual clarity and presented a recent definition of play (as an activity), that can help move the field towards greater conceptual convergence. This definition was then adopted and applied in Chapter 3, and was built upon in differentiating different *types* of play at work (structured and unstructured social play), and in systematically investigating the impact of these on negotiation, a work-related outcome that has not yet been studied. Further, in operationalising and empirically investigating play as both a state (Chapter 3) and a trait (Chapter 4), this research makes a greater contribution to the field through constructive replication, whereby findings are replicated using different operationalisations of the same construct.

The integrative review chapter also specified avenues for future research, including the identification of COR theory as being a suitable theoretical lens to be applied in further scholarship. Applying this cohesive theoretical overarching framework helped to understand

why people choose to engage in different types of play and allowed to theorise and make predictions concerning the mechanisms linking play to work-related outcomes, and the conditions under which this may occur. Specifically, Chapters 3 and 4 (empirical papers on play and negotiation and on playfulness and in-role performance and CWBs, respectively) argued that play can be used to generate and regulate two different types of personal resources (relational and psychological), which can be reinvested to improve work outcomes. Relational resources were operationalised as ‘enhanced relationship quality’ in Chapter 3, and LMX in Chapter 4. In both empirical chapters, the proposed psychological resource mechanism was positive affect. This departs from the more traditional and rational perspective previously applied in this area. Potential boundary conditions were also explored, specifically, motive for play (and whether this was instrumental or not) in Chapter 3, and supervisor levels of playfulness in Chapter 4. Through this novel application of COR, this research is innovative in its integration of the current streams of literature on resource regulation and play and is also the first to consider play a type of personal resource.

This program of research took a more balanced perspective and considered the potential negative effects or ‘dark side’ of play at work, and in doing so, addressed the current biased view towards the positive aspects of play at work. It was able to show that playfulness can (in some instances) increase engagement in CWBs. It also considered important interpersonal and instrumental aspects of play that are unique to an organisational setting. Chapter 3 proposed that play can be instrumentally motivated and that individuals may choose to play with others with an ulterior motive to achieve a higher-order goal beyond simply seeking amusement and having fun. Although this hypothesis was not supported, it is worthy of further investigation. In addition, in examining supervisor levels of playfulness as both a first- and second-stage moderator, this study extended current work by proposing a new type of moderator and proposed that employees may be instrumentally motivated to

engage in play with their supervisor to gain resources to improve their work outcomes.

Chapter 4 showed that having a highly playful supervisor (if one is also highly playful) strengthens the relationship between playfulness and resource gain. Employees may use this relationship to their advantage, and they may seek to play with their supervisor if they believe it will afford them access to additional resources.

This research also contributes to the literature by responding to calls for systematic empirical research into the measurement, prevalence and outcomes of play and playfulness in adulthood and in the workplace more specifically (e.g. Van Vleet & Feeney, 2015a). The experimental design in Chapter 3 increased internal validity and enhanced causal inference and was innovative in its utilisation of LEGO to operationalise the two types of social play. In Chapter 4, two well-known, widely accepted measures of playfulness were applied (the APS; Barnett, 2007 and the SMAP; Proyer, 2012). Data were also collected from multiple sources (employee and supervisor ratings) over two time points.

Constructive replication was achieved through empirically examining the effects of both play as a trait, and as an activity. This has scarcely been done in the past (within the same research program), as many researchers align more closely with one perspective (i.e., dispositional vs state play) over the other.

5.4 Implications

The findings of this program of research have several important practical implications. First, at the individual level, it is useful for employees to know when and with whom it would be beneficial to be playful with at work, as well as the specific impact of play on work performance and outcomes (and how this may be achieved). For example, it can be beneficial to be playful with a supervisor (or subordinate) if they are also highly playful. This is most important to younger employees, who have been shown to particularly value play at work. In addition, it is suggested that playfulness is a personality trait that is stable over time.

Therefore, this research can inform individuals and their managers about how and when expressions of playfulness should occur at work as well as the potential (positive and negative) consequences of engaging in such play. Second, at the managerial level, supervisors can glean insight as to when and with which subordinates they should be playful with; the types of playful activities they may wish to encourage or discourage; and how play can influence the well-being of subordinates, as well as team morale and cohesion, which affects performance. This research can also assist managers in implementing and managing workplace play, by identifying how play can lead to specific positive or negative work-related outcomes. Finally, at the organisational level, and of particular relevance to companies such as Google and Facebook, this research can influence the implementation of practices and policies surrounding the engagement of play at work; the use of play as a tool to attract and retain high-quality employees; and when, how, and for whom play should be encouraged at work.

Theoretical and empirical research on play at work also has implications for the day-to-day working lives of employees. Changes in technology, culture and working environments, for example, the increasing popularity of workspace redesign and hot-desking, have changed the landscape of 21st century organisations. Many employees now work remotely (particularly because of the current pandemic) and thus often have limited opportunities for face-to-face interactions with colleagues, which is an essential element of team building. As discussed in a recent review article (Petelczyc et al., 2018), it may be that under these conditions, the ability to introduce play into these encounters is a way foster social connections that previously existed as a result of working long hours whilst physically co-located. It is possible that for this generation, having time to play at work could be considered a ‘necessary condition for them to find satisfaction in their jobs and, if so, it

becomes incumbent on managers to consider ways to successfully incorporate play into work to motivate and retain these employees' (Petelczyc et al., 2018, p. 163).

There are also implications of investigating the differential outcomes of the two operationalisations of play at work, that is, playful activity versus a playful disposition. Theoretically, temporary behaviours can be managed and controlled in the workplace via management, organisational policies, norms and practices (Sørensen & Spoelstra, 2011). In comparison, if playfulness is a stable characteristic over time (although this point has been disputed; Damian et al., 2019), it may be more difficult to alter or control (George, 1991) and thus has differing implications for researchers and practitioners. Specifically, this research can contribute to discussions concerning how best to manage these different operationalisations of play to achieve positive work outcomes and avoid negative ones. Documenting the potential costs and benefits of play also allows managers to better understand the implications of introducing play into the work environment.

This research also has implications for other domains of enquiry in organisational science¹⁶. For example, engaging in play has implications for employee well-being because play has been shown to reduce stress and burnout (DesCamp & Thomas, 1993; Sørensen & Spoelstra, 2011), increase job satisfaction and sense of competence (Abramis, 1990) and relieve boredom in a monotonous job (Roy, 1959). In the area of creativity, play has been shown to enhance creativity (Russ & Wallace, 2013), a creative climate in meetings (West et al., 2016) and divergent thinking and problem-solving (Glynn, 1994; Jacobs & Statler, 2006). Playfulness is also associated with increased positive affect (Proyer & Ruch, 2011; Webster & Martocchio, 1992), which may explain the link between play and creativity (Isen et al., 1987). Additionally, for researchers investigating organisational culture, research in this area has

¹⁶ Please note this paragraph includes discussion previously published in the *Journal of Management*. Reference: **Petelczyc, C. A.**, Capezio, A., Wang, L., Restubog, S. L. D., & Aquino, K. (2018). Play at work: An integrative review and an agenda for future research. *Journal of Management*. (ABDC ranking: A*, Financial Times 50)

important implications because it suggests that play contributes to a friendly work atmosphere (Sørensen & Spoelestra, 2011), increases organisational involvement (Abramis, 1990) and results in social bonding and cohesion (Roy, 1959; Sørensen & Spoelestra, 2011).

This program of research also has important theoretical implications. First, it addressed previous inconsistencies and fragmentation of past findings through the application of a rigorous overarching theoretical framework (COR theory), which was supplemented by dual-concern and similarity-attraction theories. This demonstrates a novel application of, and extension to, COR theory because, play has not previously been considered a resource in this way. The application of these theories provides novel insights into the psychological mechanisms and boundary conditions through which play leads to differential outcomes. Although previous theories applied in the field have been used to explain outcomes of play (e.g. theory of flow, Csikszentmihalyi, 1975; the stimulus-seeking perspective, Berlyne, 1960; the cathartic perspective, Ellis, 1973), these have provided limited direction about *how* and *when* play leads to specific outcomes.

Motivated by COR theory, it was found that employees who play at work invest this resource to acquire, build and maintain additional personal resources, specifically psychological and relational resources, which, in turn, affect work-related outcomes. Support is provided for two key tenets of COR theory, concerning resource gain and resource loss. Play is invested to *gain* resources, but also to protect from future resource *loss*. For example, positive affect and LMX are increased through play, this subsequent gain in personal resources is then reinvested and additional gains are observed as highly playful employees display improved in-role performance (since they have the cognitive, affective and relational resources available to them to assist them in performing their work tasks to a high standard). In addition, employees who experience enhanced LMX relationships are motivated to maintain their additional resources, and this prevents them from engaging in CWBs because

they seek to protect their relationship with their supervisor and the additional (material and non-material) resources associated with this relationship.

Further, positive affect can also be considered a resource ‘drain’ (as shown in Study 2c), in that if resources are dedicated to play activities, sufficient levels do not remain to meet the quality and quantity demands of their work. This is an extension to what we know about COR theory, and this finding also suggests that it is important to consider that play may be both beneficial and detrimental depending on whether the consequences are short- or long-term ones¹⁷. Specifically, an employee feels positive emotions during, or shortly after engaging in, play at work because play affords the opportunity to escape from the monotony of work and engage in something fun (i.e. the demonstrated increase in positive affect). However, if an employee engages in play while ignoring work demands, it leads to long-term negative outcomes, such as decreased productivity (i.e. the demonstrated increase in CWBs). This finding illustrates that the consequences of play may differ depending on the time of its occurrence, and it also suggests that play may result in short-term benefits as well as long-term loss.

This program of research aims to address concerns regarding the conceptualisation, conservation, acquisition, and measurement of resources. By integrating research from other areas of psychology and management, this research adds to this discussion of how, why, and when different types of resources can be gained or lost in an organisational context. Specifically, it extends what is known about COR theory by considering play as a type of resource, and by investigating the unique interaction between an individuals’ own resources (i.e. their levels of playfulness) and their supervisor’s levels of that same resource (i.e.

¹⁷ Please note this paragraph includes discussion previously published in the *Journal of Management*. Reference: **Petelczyc, C. A.**, Capezio, A., Wang, L., Restubog, S. L. D., & Aquino, K. (2018). Play at work: An integrative review and an agenda for future research. *Journal of Management*. (ABDC ranking: A*, Financial Times 50)

supervisors' levels of playfulness) and the work environment / context that arises from this interaction.

Support is also provided for similarity-attraction theory in Studies 2b and 2c, whereby it was shown that playfulness is more likely to result in resource gain if the focal employee and their supervisor are both highly playful. This research extends what is currently known about this theory by directly examining playfulness as the target (i.e., comparator) variable. It also contributes to the discussion regarding the *perceived* versus *actual* similarity of individuals' traits, by arguing that in this context, perceived levels of playfulness are in fact more important than actual levels. That is, outcomes depend on how playful an employee *perceives* their supervisor to be (and vice versa). A further contribution of this research is the *integration* of similarity-attraction and COR theories, which has not been considered to date. Specifically, it showed that playfulness is more likely to result in resource gain and more positive outcomes if the focal employee and their supervisor are both highly playful.

Some support for dual-concern theory was shown in Study 1b in that enhanced relationship quality was shown to improve negotiation performance; however, further research is required since the experimental play conditions did not significantly enhance interpersonal relationships.

5.5 Strengths and Limitations

This research program has several strengths. Its review of the literature was highly comprehensive and facilitated the identification of current knowledge gaps and ways in which to move empirical research in the field forward. Another strength was that it identified, defined and described multiple operationalisations and types of play (i.e. as a state v. a trait, and two different types of social play). It also proposed a cohesive, strong overarching theoretical framework, allowing the investigation of the role of play as a resource, invested to generate additional resources and protect from resource loss. This is a novel application of

COR theory because, play has not been considered a resource in this way. These studies also considered the ‘dark side’ of play at work, and investigated important interpersonal and instrumental aspects of play unique to an organisational setting (i.e. engaging in play with an instrumental motive, playing with one’s supervisor to gain access to resources). Another strength of this thesis is the stepwise development of studies, whereby each study conceptually and constructively established a base model, then extended it by proposing mechanisms and boundary conditions and conducting supplementary analyses. Design strengths and statistical controls also rule out alternative explanations for the findings.

Chapter 3 employed a rigorous experimental design in a laboratory setting, which has not been performed before in the field of play. This design enabled a high degree of control over the variables included in the study, and the control of extraneous variables. Participants were randomly allocated to experimental conditions, which contributes to high internal validity and allows the discussion of causal relationships among the variables. Indeed, randomised experiments are still the gold standard for testing causal claims. The features of the experiment contributing to its high degree of external validity include the use of a large sample size (which is particularly difficult in dyadic negotiation research, given that participant numbers are halved when dyadic analysis is performed); the collection of data across multiple countries, cities and universities, allowing for inferences about the cross-cultural applicability of the findings; and the representation of a range of demographics (i.e. the sample consisted of students at the undergraduate as well as postgraduate degree levels, it was split almost evenly by gender and participants ranged in age from 18 to 45 years), which contributes to the generalisability of the findings to a wider population. Studies 1a and 1b also add to existing knowledge on how play can be physically operationalised (i.e. through LEGO) and offer some guidance on how researchers may wish to conduct experimental research in this area in the future.

The strengths of Chapter 4 include its high external validity achieved through a large sample size, cross-cultural data collection and representation of a range of demographics (i.e., by including full and part-time working populations), which mean the findings can be generalised to a wider population. Methodological rigour was achieved using well-known test measurements and by collecting data from co-raters over two time points. Multisource data, collected from employees and their supervisor, improves the quality of data collected and reduces the likelihood that the results were influenced by common method bias (Podsakoff et al., 2003), improving the construct validity of the studies. The time-lagged design also reduced common method bias, which often acts as the alternative explanation for observed relationships (Podsakoff et al., 2003), and allowed for the demonstration of a time lag between cause (i.e. playfulness) and effect (i.e. work-related outcomes).

Despite these strengths, this research has some limitations, given that not all hypotheses were supported. In Chapter 3, the main effect of play on negotiation was supported, but the proposed mechanisms and boundary conditions were not. Although no previous research has combined the fields of play and negotiation, there is still room for improvement concerning the experimental design and theorising behind the proposed research model in this case. For example, perhaps participants did not truly engage in the experimental activities, or they did not genuinely experience the psychological and relational resource gains as proposed. In addition, the results of the manipulation check revealed that participants in the instrumental motive condition were *not* more likely to believe that building LEGO with their partner would give an advantage in the negotiation task. A stronger experimental manipulation (i.e. more than simply receiving written instructions) could have resulted in participants truly ‘experiencing’ the predicted sense of trepidation when engaging in instrumentally motivated play. Further, perhaps the negotiation study did not work as expected because the playfulness trait of negotiators was not measured or included in the

proposed research model. Probably, play activities may or may not influence outcomes, depending on individual differences in playfulness. The outcomes of social play activities may also depend on the similarities of the negotiators (i.e. their trait levels of playfulness, or how they value play at work).

In Chapter 4, a weakness of the study design was that the outcome variables were supervisor-rated and these could be biased because of the supervisor's opinion of the employee (particularly if they possessed mismatched levels of playfulness). Additional self-report and objective measures (e.g. performance metrics) could seek to validate these ratings. In addition, cross-cultural differences could have been explored more thoroughly. An issue for the empirical research conducted is that it is difficult to disentangle play as a behaviour and playfulness as a trait. This issue makes it difficult to determine whether the relationships shown were because of the individual being more *playful as a person*, or because of them *engaging in play behaviours*. This research also did not consider the potential impact of different work environments and industry differences, for example, and this presents an opportunity for further research.

5.6 Directions for Future Research

Although this program of research has addressed some of the knowledge gaps and has expanded the current literature on play at work, many avenues are still available for future research. Based on the findings of the literature review, and the results of the two empirical chapters, the following areas for future exploration are offered in Table 15, which also outlines several specific questions that are important to pursue in the future.¹⁸

¹⁸ Please note some of the recommendations in the following section were previously published in the *Journal of Management*. Reference: **Petelczyc, C. A.**, Capezio, A., Wang, L., Restubog, S. L. D., & Aquino, K. (2018). Play at work: An integrative review and an agenda for future research. *Journal of Management*. (ABDC ranking: A*, Financial Times 50)

Table 15*Future Research Directions and Questions*

Research Direction	Questions
Dark Side	What are the consequences for individuals who choose not to engage in play? To what extent are individuals excluded/ostracized/isolated for choosing not to play at work? What reputational damage can an employee experience from engaging (or not) in play?
Short- and Long-Term Outcomes	Can play have differential effects depending on whether we focus on short-term or long-term consequences? What are the psychological processes that drive short-term outcomes of play? What are the psychological processes that drive long-term outcomes of play?
Moderators	Does play lead to differential outcomes depending on individual difference factors, such as self-control? Does play in teams lead to differential team outcomes depending on when play occurs? For example, is play more likely to lead to positive outcomes in the early stage of team development in which team members are focusing on building rapport? Does play in organisations lead to different outcomes depending on the extent to which an organisation endorses play activities?
Methodological Issues	How do we measure play as an activity from a structural approach? How do we measure play as an activity from a subjective approach? How do we measure play as an organisational culture?
New Theoretical Directions	Can play be used to generate and regulate psychological (e.g. coping and decreased stress) and/or psychosocial (e.g. liking, attraction and support) resources? How can play be used as a tool to regulate emotion? At the organisational level, is structured play as effective as spontaneous play in changing the mood of a group of employees?
Instrumental Motives	Why do people engage in play at work? What are the underlying psychological needs that may be addressed by engaging in play behaviour? What social cues motivate others to engage in play?

Research Direction	Questions
Types	What different types of play do employees engage in the workplace? Do people play differently with their colleagues compared with their supervisors? Do different types of play result in differential outcomes for employees? What are these?
Cross-Level Approaches	How can play at the individual level indirectly affect organisational outcomes via individual performance? How does a playful organisational climate affect team and individual outcomes? What are the team and organisational-level implications of independent and social play?

5.7 Methodological Advancements

There are still several methodological opportunities to advance current understanding of play at work. First, most previous studies have used different scales to measure playfulness, such as the Adult Playfulness Scale (APS; Glynn & Webster, 1992), the Short Measure for Adult Playfulness (SMAP; Proyer, 2012), the Older Adult Playfulness Scale (Yarnal & Qian, 2011) and the Playfulness Scale for Adults (Schaefer & Greenberg, 1997). Because these scales are all designed to measure individual differences in the trait of play, they do not capture play operationalised as an activity. Therefore, to move the research on play at work forward, it is both important and necessary to develop a valid and reliable measure of play in the workplace as an activity. This effort could benefit from the approaches taken in the leisure literature (e.g. Kuykendall et al., 2015). Research on leisure has measured leisure activity using two distinct approaches. The structural approach uses the researchers' definition of leisure to measure participants' engagement of leisure activity, whereas the subjective approach relies on participants' own view of what constitutes leisure activities as the key measurement. It is important to develop measures of play in the workplace based on both these approaches, because it is unclear whether one approach is superior to the other. A more precise measure of play operationalised as a state can also be applied in further experimental work, providing opportunities to improve validity (both internal and external) and allowing researchers to make causal inferences.

Second, the current research has taken a between-individual approach. However, this could be complemented by a within-individual approach that uses the experience sampling methodology to examine how play and its resulting consequences unfold on a momentary basis within individuals. This could be achieved using a diary-study design. Future research could also investigate the consequences of additional types of play. For example, independent, as opposed to social, play and imposed, as opposed to more organic and natural

types, of play. Play could also be operationalised using different types of activities or apparatuses: for example, the use of online or computer games, because the apparatus through which play exerts its influence may be relevant, particularly for certain generations.

In addition, it is important that future research considers the effects of play (as a behaviour or activity) and playfulness (as a disposition) in the same study to assess whether play behaviour is equally beneficial to playful and non-playful individuals, and to assess whether these constructs differentially predict outcomes.

5.8 Additional Mechanisms and Boundary Conditions

Given that the current research findings did not support all hypothesised relationships (particularly regarding mechanisms and boundary conditions), more research is required in this area. For example, future research should investigate additional potential mediators in the relationship between play and playfulness and outcomes. Other relational resources might include trust, social bonding and/or social cohesion, and indeed, studies have shown that play increases each of these in a work context (Hunter et al., 2010; Roy, 1959; Sørensen & Spoelestra, 2011). Alternative psychological resources might include protection from stress, fatigue and/or burnout (as shown by DesCamp & Thomas, 1993; Hunter et al, 2010; Sørensen & Spoelestra, 2011), or the increase of creativity, divergent thinking, problem-solving ability and/or cognitive flexibility (as shown by Glynn, 1994; Hunter et al, 2010; Jacobs & Statler, 2006; Russ & Wallace, 2013).

Given the non-significant findings in Chapter 3, future research could also further investigate the impact of instrumental motive for play through different methodological means. Theorising based on previous findings suggests that this is a valid, interesting and important avenue of research. However, the current experimental manipulation was unable to replicate or create what it believed to be a naturally occurring phenomenon. Indeed, this was shown in the manipulation check questions, whereby participants in the instrumental motive

condition did not believe that their partner was playing with them for strategic reasons. There may be other ways to manipulate perceived motive for engaging in play, or perhaps it is the very ‘genuine’ nature of the motive that explains its potential negative effect. In that case, a field experiment design might be more effective in detecting the impact of this variable.

5.9 Contextual Factors

Future research could adopt an interactionist perspective and investigate the impact of contextual factors on the consequences of play at work. Specifically, researchers could investigate the role of culture, organisation and industry type. Studies could investigate the consequences of play across geographical locations. Although Western countries typically treat play and playfulness positively, in some Eastern cultures these are perceived negatively (Pang & Proyer, 2018). Thus, there is scope to investigate the societal rules and cultural factors that may influence the engagement in, and expression and outcomes of, play and playfulness at work. Further, play may be more highly valued in Western societies where individualistic thinking and self-expression is valued (Barnett, 2017). However, in countries whose values are incompatible with play at work, how likely is play to occur and what are the potential outcomes? Future research could also investigate the consequences of play in specific organisations and industries, because, for example, creative industries and the information technology industry are more likely to encourage the incorporation of play into work as they value creative problem solving and inventing; seek to facilitate more open and effective lines of communication by providing a safe context through which to share ideas; and seek to prevent burnout (Hunter et al., 2010). In addition, it should be considered that ‘playfulness’ as a trait, and traits themselves, may not be stable phenomena. Therefore, future research could investigate the times/contexts in which ‘playfulness’ is expressed by an individual and the ones where it is not.

5.10 A Multilevel Approach

This program of research focused on the individual level of analysis. However, knowledge on the role of play in the workplace could be expanded by engaging in multilevel investigation. For example, it would be valuable for future research to consider whether play can influence organisational outcomes indirectly (e.g. financial outcomes and corporate reputation) via individual performance. Play at a team level is also likely to have implications for organisational climate and outcomes, and may also influence an individual's likeliness and potential outcomes of engaging in play at work. Similarly, having a playful organisational climate is likely to affect team and individual outcomes. For instance, employees' levels of playfulness, displayed as a propensity and frequency to engage in social and independent play, may be influenced by the organisational climate for play. Play activities or the expression of a playful personality may lead to positive outcomes when organisations have a playful climate and negative outcomes when organisations discourage play. Therefore, future research could investigate the interactions between play as an activity, play as a trait and a playful organisational culture.

5.11 Emotion Regulation as a New Theoretical Direction for Understanding Play

In the empirical studies included in this program of research, COR theory was applied as a new theoretical perspective for understanding the processes and outcomes of play (as a state and a trait). However, research on emotion regulation could provide another new theoretical direction in understanding the role of play in the workplace. Emotion regulation describes 'the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions' (Gross, 1998, p. 275). Although the organisational literature has been displaying increasing interest to understand both the way that individuals, teams and organisations regulate emotions in the workplace

(Grandey, 2000) and the consequences of various regulation strategies on work outcomes (e.g. conflict and negotiation, leadership, and team work; Elfenbein, 2007), research has not integrated emotion regulation and play. This gap is surprising, given the apparent conceptual overlap between the two areas of inquiry.

An emotion regulation perspective may provide insight into the antecedents of play at work, such as why and when individuals are likely to engage in play in the workplace. A fundamental reason that people regulate their emotions is hedonic, that is, they aim to minimise the experience of unpleasant emotions and maximise the experience of pleasant emotions (Tamir et al., 2007). While this perspective implies that employees may choose to switch from work to play in the workplace to escape unpleasant emotions, it does not consider the specific types of negative emotions that are most likely to give rise to play. For example, are employees more likely to be playful when they are bored with, or are exhausted by, their work? In addition to understanding the antecedents of play, emotion regulation research may help us gain a better understanding of its consequences. Emotion regulation tactics vary in their effectiveness (Grandey, 2000), and therefore, understand of when play exerts positive or negative outcomes should consider its effectiveness as an emotion regulation strategy. For example, is it possible that certain types of play are more likely to lead to benefits because they can effectively manage emotions?

5.12 Distinguishing Short-Term and Long-Term Outcomes

Although a variety of outcomes have been examined as consequences of play, little attention has been focused more precisely on whether these outcomes occur immediately or are more delayed and occur in the long term. For example, play stimulates divergent thinking and improves creativity (Glynn, 1994; Jacobs & Statler, 2006) primarily through the experience of positive affect (Isen et al., 1987). Since positive affect is by nature momentary and short-lived (Elfenbein, 2007), creativity is likely to be an immediate outcome shortly after

individuals engage in play. In contrast, learning and mastering new skills (Abramis, 1990; Kolb & Kolb, 2010) tend to be conceptualised and measured as long-term outcomes of play, since these outcomes do not occur immediately after individuals are playful. Therefore, it may be argued that the emotional effects of play are more immediate, whereas the cognitive consequences may be more long term.

The distinction between short-term versus long-term consequences may reveal new insights into the different processes through which play influences work outcomes. From a COR theory perspective, it may be argued that play generates immediate emotional or psychological resources and longer-term cognitive or relational resources. Given that play is likely to influence how players feel, the short-term outcomes of play may primarily arise from emotion-related mechanisms, such as the experience of positive emotions and the reduction of negative emotions. However, these emotion-based mechanisms are less likely to produce long-lasting changes. Therefore, the observed long-term consequences of being playful suggest the need to understand the processes via which play at work drives long-term change. Developmental psychology research suggests that children learn basic social skills through play (Barnett, 1990), so perhaps, the development of relational skills represents a potential mechanism underlying the long-term effects of play at work.

In addition, COR theory propositions concerning resource gain and loss spirals can also be applied. In relation to the example provided above, it can be argued that a short-term gain in emotional resources (specifically, positive affect) can ‘spiral’ into an additional gain of cognitive resources (specifically, creativity and divergent thinking). In contrast, an immediate loss of emotional resources may ‘spiral’ into additional loss of cognitive or relational resources, for example, if an employee is unable to focus on the work task at hand, or they develop a negative working relationship with a colleague or supervisor.

Related to this point, the impact of time on the specific relationship between play and negotiation is an avenue for future research. While the current research considered a single negotiation episode, in the ‘real world’, important negotiations are rarely completed in one game of golf, for example. The power of social play may lie in its ability to bring negotiators closer together over multiple instances, such as a weekly golf game.

5.13 Mutual Exclusivity of Play and Work

Previous research and traditionally held beliefs have considered work and play as being exclusive modes of behaviour, and indeed, the definition of play applied takes this perspective. However, treating these as *non*-mutually exclusive activities raises some interesting questions. In some instances, ‘play’ may be embedded in ‘work’ and vice versa, which poses a thought-provoking topic for future research. In addition, the activities that are defined as being either ‘work’ or ‘play’ may differ depending on the individual or workplace. Therefore, ‘play’ activities that may be accepted in one workplace, or under one supervisor, may be considered distracting or time wasting under different circumstances. Future research could investigate the conventions and boundaries that differentiate these two types of behaviour. Further, it may be expected that only ‘approved’ play activities would result in the proposed benefits or positive outcomes at work, whereas ‘unapproved’ activities may lead to negative outcomes. The current ‘working from home’ environment also raises interesting questions in relation to the conceptualisation and blurring of boundaries between work and play. Working from home may afford opportunities for ‘play’ not previously available to employees (e.g. a lunchtime walk with the dog or playing with children). What are the potential implications of these forms of play on work-related outcomes? Can the benefits of engaging in play with non-colleagues spill into a work context? Or could this blurred distinction between work and play have a detrimental effect on employees’ well-being and productivity?

5.14 Overall Conclusion

This program of research defined and explored the effects of different types and operationalisations of play: structured social play, unstructured social play, and playfulness as a personality trait. The results showed that play makes people happy and benefits interpersonal relationships. It also has important work-related benefits, including improved negotiation performance, enhanced in-role performance and decreased instances of CWBs. However, play can also have a ‘dark’ side in that it increases CWBs (depending on the circumstances). Play affects work outcomes through an increase in personal resources, particularly those of a psychological and relational nature, and this increase is more likely to occur when one’s supervisor is also highly playful. Thus, individuals may engage in play with others they do not necessarily like, but who may be instrumental to their career success.

To conclude, it is hoped that this program of research will encourage others to examine more closely a behaviour and personality trait that may be frowned upon in adulthood and in an organisational context, but that is both a hallmark of the human species and an activity/trait that can add novelty and communion to what would otherwise be another mundane, solitary day at the office.

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Appendices

Appendix A: Participant Information Sheets and Consent Forms

Appendix A.1 Participant information sheet – Study 1

Appendix A.2 Participant debrief form – Study 1

Appendix A.3 Participant information sheet – Study 2

Appendix A.4 Supervisor information sheet – Study 2

Appendix A.5 Consent form – Study 1 and Study 2

Appendix A.1

Participant information sheet – Study 1¹⁹

Participant Information Sheet

Researcher:

Good Day! We are a team of researchers from the Research School of Management, College of Business and Economics at the Australian National University. We are looking at how play impacts on work-related outcomes, specifically negotiation. We would like to seek your participation in this research project.

Project Title: Play at Work – Negotiation.

Claire Petelczyc (PhD candidate) (Email: Claire.petelczyc@anu.edu.au)

Associate Professor Nick Wang (Tel: +61 2 612 55727; Email: nick.wang@anu.edu.au)

Professor Simon Lloyd Restubog (Tel: +61 2 612 57319; Email: simon.restubog@anu.edu.au)

Dr Alessandra Capezio (Tel: +61 2 612 51754; Email: alessandra.capezio@anu.edu.au)

General Outline of the Project:

- **Description and Methodology:** This experiment will require you to complete a short questionnaire. You will then be asked to complete a playful activity with another student. You and the other student will then complete a negotiation task. It is expected that the entire process will not take longer than 1 hour.
- **Participants:** Invitation to participate is open to all ANU students.
- **Use of Data and Feedback:** The findings of this study will be used for research presentations and publication. The results of this study will also be made available

¹⁹ Note that information was customised slightly for the different participant samples across Studies 1a and 1b

through a summary report available on request. No individual responses will be identified, only aggregate responses will be presented.

Participant Involvement:

- **Voluntary Participation & Withdrawal:** Your participation in this study is voluntary and you will not be required to provide your personal details. You may also withdraw your participation from this study at any point in time without prejudice from the researchers or the ANU. Your participation in and withdrawal from this study will not impact on your course-work.
- **What will participants have to do?** If you choose to participate, please make sure to follow the instructions carefully when answering the questionnaire and completing the tasks provided. Should you decide to revoke your consent and exclude your data from our analysis, you may get in touch with the investigator about your decision. You will receive notification once your responses have been removed.
- **Location and Duration:** This research will be conducted at the Research School of Management, Australian National University. Completing this experiment will take up to one hour. You will be compensated \$10 for your time.
- **Risks:** Should feelings of distress or discomfort arise as a result of participating in this study, please feel free to get in touch with the investigators listed above. Alternatively, you may also contact Lifeline on 13 11 14.
- **Implications of Participation:** Rest assured that any data that arises from this study will remain confidential and will only be used strictly for research purposes.

Confidentiality:

Confidentiality: We endeavour to protect the confidentiality of your responses as far as the law allows and will not be collecting any identifiable data. We will store your responses electronically as a password-protected data file. During presentations and manuscript preparations, only aggregate responses will be presented, without any identifying information.

Data Storage:

- **Where:** Data collected in this research will be kept in the primary investigator's (Claire Petelczyc) password-protected work computer in Room 1080, CBE Building (26C), Research School of Management, Australian National University.
- **How long:** The final data sets will be kept for a duration of 5 years following publication.
- **Destruction of Data:** Data of excluded participants will be deleted/shredded and disposed of after the preliminary analysis. The remaining data sets will be kept for a minimum of 5 years following publication, after which, data will be shredded/deleted and disposed properly.

Queries and Concerns:

- **Contact Details for More Information:** If you have further questions about the study, you may contact **Claire Petelczyc** (Claire.petelczyc@anu.edu.au) **Nick Wang** (nick.wang@anu.edu.au) or **Simon Lloyd Restubog** (simon.restubog@anu.edu.au), in the Research School of Management at ANU.

Ethics Committee Clearance:

The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee. If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager

The ANU Human Research Ethics Committee

The Australian National University

Telephone: +61 2 6125 3427

Email: Human.Ethics.Officer@anu.edu.au

Appendix A.2

Participant debrief form – Study 1

Debriefing Form

Play at Work – Negotiation

Thank you for participating as a research participant in the present study concerning play at work. The present study tests whether negotiation outcomes improve after playing with a negotiation partner.

We hypothesise that playing with a co-negotiator before undertaking a negotiation task will increase positive affect (Linder, Roos, & Victor, 2001), and liking and trust of the other person (Tews, Michael, & Stafford, 2013). This should alter a negotiator's approach to the task, so that they take a more pro-social approach and aim for a 'win-win' outcome on the negotiation task (as opposed to seeking to maximise one's own pay-out). This change to a more pro-social approach should lead to improved communication and more information sharing between negotiators. This will result in a more optimal negotiation outcome for both parties being reached (Thompson, 1991; Anderson & Thompson, 2004; Morris, Nadler, Kurtzberg, & Thompson, 2002).

Again, we thank you for your participation in this study. If you know of any friends or acquaintances that are eligible to participate in this study, we request that you not discuss it with them until after they have had the opportunity to participate. Prior knowledge of the study and the specific questions asked during the study can invalidate the results. We greatly appreciate your cooperation.

If you have any questions regarding this study, please feel free to ask the researcher at this time or Prof. Nick Wang at the Research School of Management, ANU [Phone (02)-6125-5727; email: nick.wang@anu.edu.au] or Prof. Simon Lloyd Restubog at the Research School of Management, ANU [Phone (02)-6125-7319; email: simon.restubog@anu.edu.au].

If you have additional concerns regarding the way the research was conducted you can also contact the ANU Human Research Ethics Committee: Human Ethics Officer, Human Research Ethics Committee, The Australian National University [Phone (02)-6125-7945; email: Human.Ethics.Officer@anu.edu.au].

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Appendix A.3

Participant information sheet – Study 2²⁰

Participant Information Sheet

Researcher:

Good Day! We are a team of researchers from the Research School of Management- College of Business and Economics at the Australian National University, looking at the role of playfulness at work. We would like to seek your participation in this research project.

Project Title: Playfulness at work

Claire Petelczyc (PhD candidate) (Email: Claire.petelczyc@anu.edu.au)

Associate Professor Alessandra Capezio (Tel: +61 2 612 51754; Email: alessandra.capezio@anu.edu.au)

Professor Simon Lloyd Restubog (Tel: +61 2 612 57319; Email: simonldr@illinois.edu)

Associate Professor Nick Wang (Tel: +61 2 612 55727; Email: nick.wang@anu.edu.au)

General Outline of the Project:

- **Description and Methodology:** This survey asks questions about your levels of playfulness, your motivations towards work, your experiences at work, as well as feelings about yourself, your attitudes and your behaviours. This study requires a participant (i.e. an employee) and a co-rater (i.e. an immediate supervisor) who will complete the survey questionnaires. This survey will take about 10 minutes for each of you to complete.
- This is a dyadic longitudinal study. This means, both you and your immediate supervisor will need to complete questionnaires, independently and confidentially, in order to be approved and paid for this study. Your supervisor will need to complete

²⁰ Note that information was customised slightly for the different participant samples across Studies 2a, 2b and 2c

two questionnaires (three weeks apart), whilst you will need to complete one. In order to get credit for the study, we will need your thoughtful and honest answers, as well as two questionnaires completed by your supervisor. It is essential that the *same* supervisor fills out both questionnaires.

- **Participants:** Invitation to participate is open to 200 working individuals through Mechanical Turk (MTurk) from varied professions. Participants will then nominate an immediate supervisor who will answer survey items that pertain to the participants' work experiences.
- **Use of Data and Feedback:** The findings of this study will be used for research presentations and future manuscripts. A summary of findings will be made available upon request. This will be in a form of a written report, presented in aggregate and will have no identifying information, secured in a signed and sealed envelope.

Participant Involvement:

- **Voluntary Participation & Withdrawal:** Your participation in this study is voluntary and you will not be required to provide your personal details. You may also withdraw your participation from this study at any point in time without prejudice from the researchers or the ANU. Via MTurk, you will receive a survey link for both you and for your co-rater (your immediate supervisor).
- **What will participants have to do?** If you choose to participate, please make sure to follow the instructions carefully when answering and submitting the questionnaire. We request that you answer the survey as honestly as possible. There are no right or wrong answers so you don't need to think about your answers for so long. We will also ask you to have your immediate supervisor to feedback regarding your work and life experiences. Should you decide to revoke your consent and exclude your data from our analysis, you may get in touch with the primary investigator expressing your

withdrawal from the study. You will receive notification once your responses have been removed.

- **Location and Duration:** Answering the survey will take 10 minutes (for both you and your supervisor) at Time 1 and 10mins (for your supervisor only) at Time 2.
- **Incentives:** You will receive US\$3 for completing the Time 1 survey + \$4 for a matched supervisor survey at Time 1 + \$5 for a matched supervisor survey at Time 2 = \$US13 total.
- **Risks:** Should feelings of distress or discomfort arise as a result of participating in this study, please contact **Claire Petelczyc** (Claire.petelczyc@anu.edu.au) or **Alessandra Capezio** (alessandra.capezio@anu.edu.au), in the Research School of Management at ANU.
- **Implications of Participation:** Rest assured that any data that arises from this study will remain confidential and will only be used strictly for research purposes.

Confidentiality:

- **Confidentiality:** We endeavour to protect the confidentiality of your responses as far as the law allows. As you answer the survey, you will be asked to provide your MTurk Worker non-identifying code that we will refer to instead of your personal details. We also assure you that we are the only ones who have access to your responses and your co-raters' responses, and these will not be shared with anyone else. We will store your responses electronically as a password-protected data file. During presentations and manuscript preparations, your responses will be presented with aggregate, without any identifying information.

Data Storage:

- **Where:** Data collected in this research will be kept in the primary investigators password-protected work computer in Room 1080, CBE Building (26C), Research School of Management, ANU.
- **How long:** The final data sets will be kept for a duration of 5 years following publication.
- **Destruction of Data:** Survey data and questionnaires of excluded participants will be deleted/shredded and disposed of after the preliminary analysis. The remaining data sets will be kept for a minimum of 5 years following publication, after which, data will be shredded/deleted and disposed properly.

Queries and Concerns:

- **Contact Details for More Information:** If you have further questions about the study, you may contact **Claire Petelczyc** (Claire.petelczyc@anu.edu.au) or **Alessandra Capezio** (alessandra.capezio@anu.edu.au).

Ethics Committee Clearance:

The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee. If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager

The ANU Human Research Ethics Committee

The Australian National University

Telephone: +61 2 6125 3427

Email: Human.Ethics.Officer@anu.edu.au

Appendix A.4

Supervisor information sheet – Study 2²¹

Co-Rater (Supervisor) Information Sheet

Researcher:

Good Day! We are a team of researchers from the Research School of Management-College of Business and Economics at the Australian National University, looking at the role of playfulness at work. We would like to seek your participation in this research project.

Project Title: Playfulness at work

Claire Petelczyc (PhD candidate) (Email: Claire.petelczyc@anu.edu.au)

Associate Professor Alessandra Capezio (Tel: +61 2 612 51754; Email: alessandra.capezio@anu.edu.au)

Professor Simon Lloyd Restubog (Tel: +61 2 612 57319; Email: simonldr@illinois.edu)

Associate Professor Nick Wang (Tel: +61 2 612 55727; Email: nick.wang@anu.edu.au)

General Outline of the Project:

- **Description and Methodology:** This survey asks questions about your levels of playfulness, your motivations towards work, your experiences at work, as well as feelings about yourself, your attitudes and your behaviours. This study requires a participant (i.e. an employee) and a co-rater (i.e. an immediate supervisor) who will complete the survey questionnaires. This survey will take about 10 minutes for each of you to complete.
- This is a dyadic longitudinal study. This means, both you and your subordinate will need to complete questionnaires, independently and confidentially, in order to be approved and paid for this study. You will need to complete two questionnaires (three

²¹ Note that information was customised slightly for the different participant samples across Studies 2a, 2b and 2c

weeks apart), whilst your subordinate will need to complete one. Note that it is essential that the *same* supervisor fills out both questionnaires.

- **Participants:** Invitation to participate is open to 200 working individuals through Mechanical Turk (MTurk) from varied professions. Participants will then nominate an immediate supervisor who will answer survey items that pertain to the participants' work experiences.
- **Use of Data and Feedback:** The findings of this study will be used for research presentations and future manuscripts. A summary of findings will be made available upon request. This will be in a form of a written report, presented in aggregate and will have no identifying information, secured in a signed and sealed envelope.

Participant Involvement:

- **Voluntary Participation & Withdrawal:** Your participation in this study is voluntary and you will not be required to provide your personal details. You may also withdraw your participation from this study at any point in time without prejudice from the researchers or the ANU. As a nominated co-rater, you will receive a survey link from your subordinate. This survey link will come from our research participant who nominated you as a co-rater.
- **What will participants have to do?** As a nominated co-rater, you will rate the participant who gave you the survey link. If you choose to participate, please make sure to follow the instructions carefully when answering and returning the questionnaire. We request that you answer the survey as honestly as possible. There are no right or wrong answers so you don't need to think about your answers for so long. To ensure confidentiality, we ask that you refrain from revealing the name of the participant you rated and from retaining a copy of your ratings. Should you decide to revoke your consent and exclude your responses from our analysis, you may get in

touch with the primary investigator expressing your withdrawal from the study. You will receive notification once your responses have been removed.

- **Location and Duration:** Answering the survey will take 10 minutes (for both you and your subordinate) at Time 1 and 10mins (for you) at Time 2.
- **Incentives:** Your subordinate will receive US\$3 for completing the Time 1 survey + \$4 for a matched supervisor survey at Time 1 + \$5 for a matched supervisor survey at Time 2 = \$US13 total.
- **Risks:** Should feelings of distress or discomfort arise as a result of participating in this study, please contact **Claire Petelczyc** (Claire.petelczyc@anu.edu.au) or **Alessandra Capezio** (alessandra.capezio@anu.edu.au), in the Research School of Management at ANU.
- **Implications of Participation:** Rest assured that any data that arises from this study will remain confidential and will only be used strictly for research purposes.

Confidentiality:

- **Confidentiality:** We endeavour to protect the confidentiality of your responses as far as the law allows. As you answer the survey, you will be instructed to generate a non-identifying code that we will refer to instead of your personal details. We also assure you that we are the only ones who have access to your responses, and the codes will not be shared with anyone else. We will store your responses electronically as a password-protected data file. During presentations and manuscript preparations, your responses will be presented in aggregate, without any identifying information.

Data Storage:

- **Where:** Data collected in this research will be kept in the primary investigators password-protected work computer in Room 1080, CBE Building (26C), Research School of Management, Australian National University.

- **How long:** The final data sets will be kept for a duration of 5 years following publication.
- **Destruction of Data:** Survey data and questionnaires of excluded participants will be deleted/shredded and disposed of after the preliminary analysis. The remaining data sets will be kept for a minimum of 5 years following publication, after which, data will be shredded/deleted and disposed properly.

Queries and Concerns:

Contact Details for More Information: If you have further questions about the study, you may contact **Claire Petelczyc** (Claire.petelczyc@anu.edu.au) or **Alessandra Capezio** (alessandra.capezio@anu.edu.au).

Ethics Committee Clearance:

The ethical aspects of this research have been approved by the ANU Human Research Ethics Committee. If you have any concerns or complaints about how this research has been conducted, please contact:

Ethics Manager

The ANU Human Research Ethics Committee

The Australian National University

Telephone: +61 2 6125 3427

Email: Human.Ethics.Officer@anu.edu.au

Appendix A.5

Consent form – Study 1 and Study 2

Written Consent

Play at Work

I have read and understood the Information Sheet you have given me about the research project, and I have had any questions and concerns about the project (listed here

addressed to my satisfaction.

I agree to participate in the project

YES ☐ NO ☐

I agree to be identified in the following way within research outputs:

Complete Confidentiality

YES ☐ NO ☐

Pseudonym/Anonymous Code

YES ☐ NO ☐

Signature:

Date:

Appendix B: Materials for Study 1

Appendix B.1 Participant demographic questions

Appendix B.2 Personality measures

Appendix B.3 Playfulness measure

Appendix B.4 Machiavellianism measure

Appendix B.5 Affect measure

Appendix B.6 Relationship quality measure

Appendix B.7 Negotiation task

Appendix B.1

Participant demographic questions

Gender (please encircle): A. Male B. Female C. Prefer not to say

Age (as of last birthday): _____

What type of studies are you currently undertaking? A. Bachelor B. Master's C. PhD

Are you a domestic or international student?: A. Domestic B. International

Are you currently enrolled?: A. Full-time B. Part-time

Country of residency: _____

Appendix B.2

Personality measures

Big Five Inventory

1. Is talkative
2. Tends to find fault with others
3. Does a thorough job
4. Is depressed, blue
5. Is original, comes up with new ideas
6. Is reserved
7. Is helpful and unselfish with others
8. Can be somewhat careless
9. Is relaxed, handles stress well
10. Is curious about many different things
11. Is full of energy
12. Starts quarrels with others
13. Is a reliable worker
14. Can be tense
15. Is ingenious, a deep thinker
16. Generates a lot of enthusiasm
17. Has a forgiving nature
18. Tends to be disorganized
19. Worries a lot
20. Has an active imagination
21. Tends to be quiet
22. Is generally trusting

23. Tends to be lazy
24. Is emotionally stable, not easily upset
25. Is inventive
26. Has an assertive personality
27. Can be cold and aloof
28. Perseveres until the task is finished
29. Can be moody
30. Values artistic, aesthetic experiences
31. Is sometimes shy, inhibited
32. Is considerate and kind to almost everyone
33. Does things efficiently
34. Remains calm in tense situations
35. Prefers work that is routine
36. Is outgoing, sociable
37. Is sometimes rude to other
38. Makes plans and follows through with them
39. Gets nervous easily
40. Likes to reflect, play with ideas
41. Has few artistic interests
42. Likes to cooperate with others
43. Is easily distracted
44. Is sophisticated in art, music, or literature

HEXACO-60

1. I would be quite bored by a visit to an art gallery.
2. I plan ahead and organize things, to avoid scrambling at the last minute.
3. I rarely hold a grudge, even against people who have badly wronged me.
4. I feel reasonably satisfied with myself overall.
5. I would feel afraid if I had to travel in bad weather conditions.
6. I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
7. I'm interested in learning about the history and politics of other countries.
8. I often push myself very hard when trying to achieve a goal.
9. People sometimes tell me that I am too critical of others.
10. I rarely express my opinions in group meetings.
11. I sometimes can't help worrying about little things.
12. If I knew that I could never get caught, I would be willing to steal a million dollars.
13. I would enjoy creating a work of art, such as a novel, a song, or a painting.
14. When working on something, I don't pay much attention to small details.
15. People sometimes tell me that I'm too stubborn.
16. I prefer jobs that involve active social interaction to those that involve working alone.
17. When I suffer from a painful experience, I need someone to make me feel comfortable.
18. Having a lot of money is not especially important to me.
19. I think that paying attention to radical ideas is a waste of time.
20. I make decisions based on the feeling of the moment rather than on careful thought.
21. People think of me as someone who has a quick temper.
22. On most days, I feel cheerful and optimistic.
23. I feel like crying when I see other people crying.

24. I think that I am entitled to more respect than the average person is.
25. If I had the opportunity, I would like to attend a classical music concert.
26. When working, I sometimes have difficulties due to being disorganized.
27. My attitude toward people who have treated me badly is 'forgive and forget'.
28. I feel that I am an unpopular person.
29. When it comes to physical danger, I am very fearful.
30. If I want something from someone, I will laugh at that person's worst jokes.
31. I've never really enjoyed looking through an encyclopedia.
32. I do only the minimum amount of work needed to get by.
33. I tend to be lenient in judging other people.
34. In social situations, I'm usually the one who makes the first move.
35. I worry a lot less than most people do.
36. I would never accept a bribe, even if it were very large.
37. People have often told me that I have a good imagination.
38. I always try to be accurate in my work, even at the expense of time.
39. I am usually quite flexible in my opinions when people disagree with me.
40. The first thing that I always do in a new place is to make friends.
41. I can handle difficult situations without needing emotional support from anyone else.
42. I would get a lot of pleasure from owning expensive luxury goods.
43. I like people who have unconventional views.
44. I make a lot of mistakes because I don't think before I act.
45. Most people tend to get angry more quickly than I do.
46. Most people are more upbeat and dynamic than I generally am.
47. I feel strong emotions when someone close to me is going away for a long time.
48. I want people to know that I am an important person of high status.

49. I don't think of myself as the artistic or creative type.
50. People often call me a perfectionist.
51. Even when people make a lot of mistakes, I rarely say anything negative.
52. I sometimes feel that I am a worthless person.
53. Even in an emergency I wouldn't feel like panicking.
54. I wouldn't pretend to like someone just to get that person to do favors for me.
55. I find it boring to discuss philosophy.
56. I prefer to do whatever comes to mind, rather than stick to a plan.
57. When people tell me that I'm wrong, my first reaction is to argue with them.
58. When I'm in a group of people, I'm often the one who speaks on behalf of the group.
59. I remain unemotional even in situations where most people get very sentimental.
60. I'd be tempted to use counterfeit money, if I were sure I could get away with it.

Appendix B.3

Playfulness measure

Barnett's Measure of Adult Playfulness

1. Active
2. Adventurous
3. Cheerful
4. Clowns around
5. Energetic
6. Friendly
7. Funny
8. Happy
9. Humorous
10. Impulsive
11. Jokes/Teases
12. Outgoing
13. Sociable
14. Spontaneous
15. Unpredictable

Appendix B.4

Machiavellianism measure

Machiavellianism Scale

1. I am willing to be unethical if I believe it will help me succeed.
2. I am willing to sabotage the efforts of other people if they threaten my own goals.
3. I would cheat if there was low chance of getting caught.
4. I believe that lying is necessary to maintain a competitive advantage over others.
5. The only good reason to talk to others is to get information that I can use to my benefit.
6. I like to give the orders in interpersonal situations.
7. I enjoy being able to control the situation.
8. I enjoy having control over other people.
9. Status is a good sign of success in life.
10. Accumulating wealth is an important goal for me.
11. I want to be rich and powerful someday.
12. People are only motivated by personal gain.
13. I dislike committing to groups because I don't trust others.
14. Team members backstab each other all the time to get ahead.
15. If I show any weakness at work, other people will take advantage of it.
16. Other people are always planning ways to take advantage of the situation at my expense.

Appendix B.5**Affect measure***Positive Affect Schedule*

1. Interested
2. Excited
3. Strong
4. Enthusiastic
5. Proud
6. Alert
7. Inspired
8. Determined
9. Attentive
10. Active

Appendix B.6

Relationship quality measure

Adapted Interpersonal Relationship Quality Scale

1. My co-negotiator and I shared a common vision about the negotiation process
2. My co-negotiator and I acted towards a common goal
3. My co-negotiator and I acted without having a clear direction
4. Sharing with one another in the context of this negotiation enabled us to better understand each other's desired outcomes
5. Sharing with one another in the context of this negotiation enabled us to better understand how our actions impacted the other
6. When my co-negotiator expressed a different opinion I respected it
7. My interactions with my co- negotiator were rewarding
8. My co- negotiator valued my input
9. My co- negotiator listened to what I had to say
10. I sensed a real connection with my co- negotiator
11. My co- negotiator and I had mutual respect for one another
12. I felt a real 'kinship' with my co- negotiator
13. I trusted my co- negotiator

Appendix B.7

Negotiation task

Participant 1

The purpose of this task is to examine negotiation behaviour.

- You and your partner are required to fill a theoretical ball pit and you must agree on the number of blue, green, red, yellow and purple balls to have in the pit.
- Go through each colour one by one and negotiate with your partner how many of that colour ball go in the pit i.e. how many blue, green, red, yellow and purple balls should go in the pit.
- For each colour ball, you and your partner must agree on how many balls of that colour to put in the pit (2, 4, 6, 8 or 10 of each colour with no limit on the total number of balls).
- There are different values assigned to balls depending on their colour and number as shown in the table below. For example, 10 blue balls results in 0 points however 10 purple balls results in 400 points.
- A higher joint point score at the end of the task means you have reached a more successful agreement. Therefore, you should consider the points associated with each number / colour ball combination when deciding on your preferences. Please note that your partner's payoff table is not the same as yours and therefore your partner may not have the same preferences as you.
- Failure to reach agreement on the number of all five colours after 10 minutes will result in both of you earning zero points.

Participant 1 Payoff Table:

Coloured Ball	Blue	Green	Red	Yellow	Purple
Number of Balls	10 (0)	10 (0)	10 (0)	10 (0)	10 (400)
(Points)	8 (15)	8 (30)	8 (50)	8 (50)	8 (300)
	6 (30)	6 (60)	6 (120)	6 (100)	6 (200)
	4 (45)	4 (90)	4 (180)	4 (150)	4 (100)
	2 (60)	2 (120)	2 (240)	2 (200)	2 (0)

In the table above, please circle the amount of each colour ball you and your partner agree on.

Please record your start and end times for this task: Start time _____ End time _____

Please calculate your ***individual*** total points score (add numbers in brackets): _____

Please calculate your ***joint*** total points score (add your total individual score with your partner's): _____

Participant 2

The purpose of this task is to examine negotiation behaviour.

- You and your partner are required to fill a theoretical ball pit and you must agree on the number of blue, green, red, yellow and purple balls to have in the pit.
- Go through each colour one by one and negotiate with your partner how many of that colour ball go in the pit i.e. how many blue, green, red, yellow and purple balls should go in the pit.
- For each colour ball, you and your partner must agree on how many balls of that colour to put in the pit (2, 4, 6, 8 or 10 of each colour with no limit on the total number of balls).
- There are different values assigned to balls depending on their colour and number as shown in the table below. For example, 10 blue balls results in 400 points however 10 purple balls results in 0 points.
- A higher joint point score at the end of the task means you have reached a more successful agreement. Therefore, you should consider the points associated with each number / colour ball combination when deciding on your preferences. Please note that your partner's payoff table is not the same as yours and therefore your partner may not have the same preferences as you.
- Failure to reach agreement on the number of all five colours after 10 minutes will result in both of you earning zero points.

Participant 2 Payoff Table:

Coloured Ball	Blue	Green	Red	Yellow	Purple
Number of Balls (Points)	10 (400)	10 (120)	10 (240)	10 (0)	10 (0)
	8 (300)	8 (90)	8 (180)	8 (50)	8 (15)
	6 (200)	6 (70)	6 (120)	6 (100)	6 (30)
	4 (100)	4 (30)	4 (60)	4 (150)	4 (45)
	2 (0)	2 (0)	2 (0)	2 (200)	2 (60)

In the table above, please circle the amount of each colour ball you and your partner agree on.

Please record your start and end times for this task: Start time _____ End time _____

Please calculate your *individual* total points score (add numbers in brackets): _____

Please calculate your *joint* total points score (add your total individual score with your partner's): _____

Appendix C: Materials for Study 2

Appendix C.1 Participant demographic questions

Appendix C.2 Personality measures

Appendix C.3 Playfulness measures

Appendix C.4 Affect measure

Appendix C.5 Leader member exchange measure

Appendix C.6 In-role performance measures

Appendix C.7 Counterproductive work behaviours measure

Appendix C.1

Participant demographic questions

1. Gender (please select): A. Male B. Female C. Prefer not to say
2. Age as of last birthday: _____
3. How long have you been working with your current organization?
_____ year(s) _____ month(s)

Appendix C.2

Personality measures

Big Five Inventory

1. Is talkative
2. Tends to find fault with others
3. Does a thorough job
4. Is depressed, blue
5. Is original, comes up with new ideas
6. Is reserved
7. Is helpful and unselfish with others
8. Can be somewhat careless
9. Is relaxed, handles stress well
10. Is curious about many different things
11. Is full of energy
12. Starts quarrels with others
13. Is a reliable worker
14. Can be tense
15. Is ingenious, a deep thinker
16. Generates a lot of enthusiasm
17. Has a forgiving nature
18. Tends to be disorganized
19. Worries a lot
20. Has an active imagination
21. Tends to be quiet
22. Is generally trusting

23. Tends to be lazy
24. Is emotionally stable, not easily upset
25. Is inventive
26. Has an assertive personality
27. Can be cold and aloof
28. Perseveres until the task is finished
29. Can be moody
30. Values artistic, aesthetic experiences
31. Is sometimes shy, inhibited
32. Is considerate and kind to almost everyone
33. Does things efficiently
34. Remains calm in tense situations
35. Prefers work that is routine
36. Is outgoing, sociable
37. Is sometimes rude to other
38. Makes plans and follows through with them
39. Gets nervous easily
40. Likes to reflect, play with ideas
41. Has few artistic interests
42. Likes to cooperate with others
43. Is easily distracted
44. Is sophisticated in art, music, or literature

Big Five Mini-IPIP Scale

1. Am the life of the party
2. Sympathize with others' feelings
3. Get chores done right away
4. Have frequent mood swings
5. Have a vivid imagination
6. Don't talk a lot
7. Am not interested in other people's problems
8. Often forget to put things back in their proper place
9. Am relaxed most of the time
10. Am not interested in abstract ideas
11. Talk to a lot of different people at parties
12. Feel others' emotions
13. Like order
14. Get upset easily
15. Have difficulty understanding abstract ideas
16. Keep in the background.
17. Am not really interested in others
18. Make a mess of things
19. Seldom feel blue
20. Do not have a good imagination

Appendix C.3

Playfulness measures

Barnett's Measure of Adult Playfulness

1. Active
2. Adventurous
3. Cheerful
4. Clowns around
5. Energetic
6. Friendly
7. Funny
8. Happy
9. Humorous
10. Impulsive
11. Jokes/Teases
12. Outgoing
13. Sociable
14. Spontaneous
15. Unpredictable

Short Measure of Adult Playfulness

1. I am a playful person
2. Good friends would describe me as a playful person
3. I frequently do playful things in my daily life
4. It does not take much for me to change from a serious to a playful frame of mind
5. Sometimes, I completely forget about the time and am absorbed in a playful activity

Appendix C.4**Affect measure***Positive Affect Schedule*

1. Interested
2. Excited
3. Strong
4. Enthusiastic
5. Proud
6. Alert
7. Inspired
8. Determined
9. Attentive
10. Active

Appendix C.5

Leader–member exchange measure

Leader Member Exchange (M) Measure

1. Regardless of how much power he/she has built into his/her position, my supervisor would be personally inclined to use his/her power to help me solve problems in my work
2. I can count on my supervisor to ‘bail me out,’ even at his or her own expense, when I really need it
3. My supervisor understands my problems and needs
4. My supervisor recognises my potential
5. My supervisor has enough confidence in me that he/she would defend and justify my decisions if I were not present to do so
6. I usually know where I stand with my supervisor
7. I would describe my working relationship with my supervisor as very effective

Appendix C.6

In-role performance measures

In-Role Performance Measure (Williams & Anderson, 1991)

1. This employee adequately completes assigned duties
2. This employee fulfills responsibilities specified in job description
3. This employee performs tasks that are expected of him/her
4. This employee meets formal performance requirements of the job

In-Role Performance Measure (Tsui et al., 1997)

1. This employee's quantity of work is higher than average
2. This employee's quality of work is much higher than average
3. This employee's efficiency is much higher than average
4. This employee's standards of work quality are higher than the formal standards for this job
5. This employee strives for higher quality work than required
6. This employee upholds highest professional standards

Appendix C.7

Counterproductive work behaviours measure

Counterproductive Work Behaviours Measure

1. This employee made an ethnic, racial, or religious slur against a co-worker
2. This employee swore at a co-worker
3. This employee refused to talk to a co-worker
4. This employee gossiped about their supervisor
5. This employee made an obscene comment or gesture at a co-worker
6. This employee teased a co-worker in front of other employees
7. This employee intentionally arrived late for work
8. This employee called in sick when s/he was not really ill
9. This employee took undeserved breaks to avoid work
10. This employee made unauthorized use of organizational property
11. This employee left work early without permission
12. This employee lied about the number of hours s/he worked
13. This employee worked on a personal matter on the job, instead of working for their employer
14. This employee purposely ignored my instructions
15. This employee has purposely done his/her work incorrectly
16. This employee has purposely worked slowly when things needed to get done
17. This employee has purposely failed to follow instructions