Inside-out Outside-In:  
A dual approach process model to developing work happiness

By

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ABSTRACT OF THE DISSERTATION

Inside-out Outside-In: A dual approach process model to developing work happiness

Placed within the positive organizational behavior and positive organizational scholarship paradigm, this PhD proposes and empirically tests a dual approach process model to developing wellbeing. Specifically, it examines associations between employee positive attitudes, perceptions of positive organization culture and employee wellbeing in a school setting. Further, it suggests two underlying processes that may explain these associations: selective exposure, confirmation bias, and attitude development. Using a mixed-methods approach three studies were undertaken: an observational design three-wave repeated measures field study to examine the naturally occurring patterns of relationships, and two positive psychology intervention studies to explore processes that may explain those relationships. Results suggest that positive attitudes and perceptions of positive organization culture influence work happiness in independent and synergistic ways. There is also some evidence for the processes of selective exposure, confirmation bias, and attitude development as the underlying mechanisms for these relationships. This thesis makes a new and unique theoretical contribution to the fields of Positive Organizational Behavior (POB) and Positive Organizational Scholarship by examining how psychological capital, organizational virtuousness and work happiness interrelate. It presents a theoretical model to developing wellbeing in the workplace and addresses a number gaps from the extant research, including: the need to understand more about how positive psychology interventions work and the processes through which they influence wellbeing (Lyubomirsky & Layous, 2013); the call to adopt a systems-approach to the implementation of positive education (Waters, 2011); the examination and use of implicit attitudes in organizational research (Latham, Stajkovic, & Locke, 2010); and the need to integrate positively oriented fields of research such as POB and POS (Youssef & Luthans, 2011). In an applied context, this research will help practitioners understand pathways to develop the psychological resources of employees, the importance of adopting a dual approach to foster and sustain wellbeing and the influential role that timing can play in the efficacy of wellbeing interventions.
DECLARATION

This is to certify that:

1. The thesis comprises only my original work towards the degree of Doctor of Philosophy, except where indicated in the Preface.

2. Due acknowledgement has been made in the text to all other material used.

3. The thesis is fewer than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices.

9 September 2016

Karen Paige Williams
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Thank you also to my Mum who has motivated and supported me in many ways in the years that I have completed this journey. Even as an adult, hearing your Mum say, ‘I am so proud of you’ makes your heart sing! You have said it often; thank you.

I would like to thank Stephen Meek, Principal of Geelong Grammar School for allowing me to undertake the research and the staff of the school for their involvement, time and commitment to the research. Finally, I am grateful to my colleagues and peers at the Centre for Positive Psychology who have supported me and this work. I am honored to be part of such a caring, authentic and high-performing group.
PUBLICATIONS AND CONFERENCE PRESENTATIONS

Publications and conference presentations resulting from this PhD are detailed below. The candidate was responsible for the planning, execution and preparation of all publication and presentation materials, with co-authors contributing to the ideas, structure and editing.

Publications


Conference Presentations


Other publications by the author


Other Conference Papers/Presentations by the author

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Thesis Overview

A number of chapters in this thesis have been published as journal papers (Chapters 2, 4, 5 and 6). Chapters that have been published at the time of thesis submission are indicated by a full citation to the version of record at the beginning of those chapters. Footnotes are provided in these chapters to address points of clarification raised by the thesis Examiners after publication and will not feature in the published articles. The references for all chapters have been collated into one bibliography for the entire thesis to avoid duplication.

Chapters 1 and 2 provide the literature review, synthesis, and theoretical development within the thesis. Chapter 3 provided details of the overall study design and measures developed for use in the research. Chapters 4, 5 and 6 document studies undertaken as part of the research. Discussions and conclusions are included in the context of each chapter, presented within appropriately titled sections. The final chapter provides a brief general discussion and conclusion to the thesis. Appendices provide material to supplement the main chapters.

Chapter 1: Introduction

This chapter provides an overview of the research context and the need for staff wellbeing in schools. It explores the concept of wellbeing, the nature of wellbeing at work and the benefits of employee wellbeing to the individual and the organization. Focusing in to schools, it explores the challenges facing schools, the influence that school staff wellbeing has in achieving good outcomes in schools and the need to adopt a systems perspective to fostering school staff wellbeing.

Chapter 2: Inside-out Outside-in: A dual approach process model to developing work happiness

This chapter (published in the International Journal of Wellbeing) proposes a conceptual model to develop staff wellbeing – the Inside-out Outside-in (IO-OI) model. Extending Sloan’s (1987) dual approach to developing wellbeing in the workplace, this chapter presents ‘inside-out outside-in’ as a new way to conceptualize change that focuses on the locus of the target for change. The IO-OI model suggests that employee work happiness is influenced by individual-level personal resources developed through positive employee development and positive attitudes (inside-out factors), and social and job resources developed at the organizational-level through positive strategies and positive organizational culture (outside-in factors). The model further proposes three processes that connect outside-in and inside-out factors (selective exposure and confirmation bias, and attitude development), as well as a series of feedback loops that support upward spirals of positive development at the individual and organizational levels. Ways in which the IO-OI model can be used and tested are also suggested.
Chapter 3: Study Design and Measure Development

This chapter provides details of the overall study design and measures developed specifically for use in this research, including: 1) a measure of work happiness based on Fisher’s (2010) model; 2) a measure to capture the influence of the selective exposure process, 3) a measure to capture the influence of confirmation bias and, 4) an implicit measure of organizational virtuousness.

Chapter 4: Study 1: A Longitudinal Examination of the Association Between Psychological Capital, Perception of Organizational Virtues and Work Happiness in School Staff

With the foundation of the conceptual IO-OI model, study design and measures in place, the next three chapters detail the three studies of this thesis. This chapter (published in Psychology of Wellbeing) provides details of a longitudinal study that explores the association between variables within the IO-OI model: psychological capital (positive attitudes, inside-out factor), organizational virtues (positive culture, outside-in factor), and work happiness in staff at an independent K-12 school in Victoria, Australia over a 15-month timespan (baseline N= 247). Results indicate a small synergetic effect between inside-out and outside-in factors, which suggests that while leaders might target psychological capital in employees or target the organization’s culture, further benefit may arise by using both inside-out and outside-in strategies.

Chapter 5: Study 2: Exploring Selective Exposure and Confirmation Bias as Processes Underlying Employee Work Happiness: An Intervention Study

Building on the work of Chapter 4 in exploring the associations between variables within the IO-OI model, this chapter (published in Frontiers in Psychology). explores one of the processes outlined Chapter 2: selective exposure and confirmation bias. Using a quasi-experimental study design, school staff completed surveys at three time points. After the first assessment, some staff were involved in a positive psychology training intervention. Results of descriptive statistics, correlation, and regression analyses on the intervention group provide some support for selective exposure and confirmation bias as explanatory mechanisms for the associations between variables within the IO-OI model.

Chapter 6: Study 3: The Role and Reprocessing of Attitudes in Developing Work Happiness: An Intervention Study

This chapter (published in Frontiers in Psychology) uses a sub-set of the data used in Chapter 5 to examine the iterative reprocessing model (IRM) of attitudes (Cunningham et el., 2007) in explaining associations between employee positive attitudes (psychological capital, PsyCap), positive organization culture (perception of virtues in the organization culture, OV), and work happiness. Results suggest that associations occur at the explicit and implicit levels and that the IRM of attitude development provides some insight to the explanatory mechanisms for the associations.
Chapter 7: Overall Discussion and Conclusions

This chapter draws together the key content and contributions of the thesis. It provides a high-level discussion of the findings and highlights implications for research and practice and summarizes the main theoretical contributions of the thesis. It concludes by articulating ways in which the IO-OI model can contribute to future research in the field of Positive Psychology.
Chapter 1 Overview:

This chapter provides an overview of the research context and the need for staff wellbeing in schools. It explores the concept of wellbeing, the nature of wellbeing at work and the benefits of employee wellbeing to the individual and the organization. Focusing in to schools, it explores the challenges facing schools, the influence that school staff wellbeing has in achieving good outcomes for students and the need to adopt a systems perspective in fostering school staff wellbeing.
Chapter 1

Introduction

1.1 The value of wellbeing

Positive Psychology scientifically studies the conditions and processes that enable flourishing in individuals, groups, and institutions (Gable & Haidt, 2005). An underlying theme of positive psychology is that life can be made better for all people if certain conditions are met (Wong et al., 2012) and the theory of wellbeing is one way through which this idea is conceptualized.

Wellbeing is a multi-dimensional, abstract construct that has been defined in a number of ways. Affective wellbeing (AWB) is derived from hedonic happiness theory and is defined as the frequent experience of positive affect and the infrequent experience of negative affect (Daniels, 2000). Subjective wellbeing (SWB) builds on this, adding a cognitive dimension that assesses overall satisfaction with life (Diener, 2000). Psychological wellbeing (PWB) is derived from eudaimonic happiness theory and identifies positive psychological functioning as critical to wellbeing (Ryff, 1989).

More recent developments in wellbeing theory recognize that both individual and contextual factors influence wellbeing, and that it includes both hedonic and eudemonic elements (Ryan & Deci 2001; Ryff & Singer 2008). For example, Keyes (2002) suggests that wellbeing comprises emotional wellbeing through the presence of positive emotions, social wellbeing through feeling connected and valued by others, and psychological wellbeing through functioning well. Diener et al. (2010) propose wellbeing as a psychosocial construct that includes rewarding and positive relationships, feeling competent and confident, and believing that life is meaningful and purposeful. Seligman (2012) suggests that there are five components to wellbeing: positive emotions, engagement, relationships, meaning, and achievement. Indicators of wellbeing can be assessed through both subjective (e.g. self-report survey) and objective measures (e.g. life expectancy), and may include
assessments of behaviors and relationships as well as thoughts and feelings (e.g.; the Flourishing Scale, Diener et al., 2010; PERMA-P profiler, Butler & Kern, 2015; European Social Survey, Huppert & So, 2013). It is also suggested that wellbeing is an outcome in itself and that other factors lead to wellbeing and other positive physical, social and functional outcomes (Friedman & Kern, 2014).

High levels of wellbeing have been associated with various individual benefits including positive health and social outcomes, with higher levels of social engagement (Polak & McCullogh, 2006; Thoits & Hewitt, 2001), psychological resilience and growth (Fredrickson, 2001; Fredrickson & Brannigan, 2005; Seligman & Csikszentmihalyi, 2000), physical health (Fredrickson, 2000; Pennebaker & King, 1999), productivity and income (Boehm & Lyubomirsky, 2008) and longer lifespan (Diener & Chan, 2011). The diverse range of positive outcomes associated with wellbeing has implications for reducing costs of health care and crime, increasing creativity and entrepreneurship and improving social cohesion and participation (Huppert, 2009a). As such, policy makers are becoming interested in using subjective wellbeing as a measure of a country’s prosperity in addition to economic growth and in identifying practical pathways to develop wellbeing in their populations (Forgeard, Jayawickreme, Kern & Seligman, 2011). This PhD focuses on identifying pathways to individual wellbeing through employment and work organizations.

1.2 Wellbeing at work

Evidence suggests that, in addition to the individual benefits, wellbeing also has a positive influence in organizations. Outcomes such as improved creativity (Fredrickson, 1998); higher levels of engagement (Harter, Schmidt & Keyes, 2003); increased customer satisfaction, (Giardini & Frese, 2008; Harter et al., 2003); increased productivity (Keyes, 2005); greater presenteeism /effort at work (Keyes, 2005); reduced intention to quit/withdrawal intentions (Hart & Cooper 2001; Shoenfelt & Battista, 2004); lower actual voluntary turnover (Clifton & Harter, 2003, Wright & Bonnett, 2007) and fewer absenteeism /sick days (Keyes, 2005) have been shown to be associated with higher levels of employee wellbeing. There is also evidence that organizations receive a positive return on investment when they develop employee wellbeing through reduced absenteeism and
compensation claims (Pricewaterhouse Coopers, 2014). However, in this thesis I ask, what role does work play in creating individual wellbeing and what organizational factors impact the wellbeing of individuals whilst at work?

Employment is a significant part of life in the modern developed world. For most adults, work represents half of waking life (Wrzesniewski, McCauley, Rozin & Schwartz, 1997). In addition to the economic necessity to undertake paid work, Hall and Las Heras, (2009) suggest that career work contributes to individual wellbeing in five ways: 1. conveying identity, 2. reflecting meaning and purpose, 3. fulfilling human potential, 4. providing support and challenge for human development and, 5. through its mainly agentic nature. It is also significant that returning to work following extended absence due to illness or disability often improves physical and mental health (The Foresight Report, 2008). Research conducted by Wrzesniewski et al. (1997) showed that employment can provide meaning and purpose to people, and that those people who see work as a calling were intrinsically motivated and had a more rewarding relationship with their work and gained more satisfaction and enjoyment from it (Las Heras, 2009; Wrzesniewski et al., 1997). Other research has found that employment can provide individuals with positive opportunities to develop individual capabilities (Ulrich & Smallwood, 2004), use their strengths (Buckingham, 2001; Seligman & Peterson, 2004) and flourish (Keyes, 2002; Huppert, 2009b). Research by Csikszentmihalyi and Lefevre (1989) found that, despite rating time spent in leisure as being more desirable, people had more “peak experiences” or flow at work than in leisure activities.

Another way to consider the significance of employment is to look at the impact of joblessness. Jahoda’s deprivation theory (1958) shows that when people lose work they are deprived of five key latent functions that increase psychological wellbeing: 1) imposition of a time structure, 2) regular shared contact, 3) the linking of individuals in a shared collective effort or purpose, 4) the provision of social identity or status, and 5) regular enforced activity. When people lose employment, they lose access to these five latent functions and this has been shown to lead to psychological distress (Waters & Moore, 2002; Waters & Strauss, 2016). In a study of the results of
the General Social Survey of the United States 1972-2008, Blanchflower and Oswald (2011) found that joblessness was associated with a significantly high level of unhappiness; twice that associated with being widowed and more than three times that of being divorced. In sum, there is strong evidence to support the assertion that work contributes to an individual’s subjective wellbeing (SWB) and psychological wellbeing (PWB) (Page & Vella-Brodrick, 2009).

The influence of work in sustaining individual social, economic and psychological wellbeing together with the fact that adults spend half of their waking life in employment, means that the nature of work and culture of workplaces can have a significant impact upon individual wellbeing. It is suggested that work related stress is a universal phenomenon that adversely impacts health, performance and wellbeing of employees (Babatunde, 2013). The recent Global Financial Crisis has further affirmed this position as many people try to cope with increased work demands and the fear of job loss (Wahlbeck & McDaid, 2012). However, negative stress at work is not only caused by negative events; it can also be the result of a lack of positive experiences (Cotton & Hart, 2003). For example, a lack of social support may cause an individual to feel that their work is pointless and therefore they are not enthusiastic or confident. In their study of occupational wellbeing, Cotton and Hart (2003) found that, whilst it was necessary to address negative situations, it was more important to foster positive experiences and an overall positive feeling to work in order to develop wellbeing at work. As such it is as important for organization to foster positive feelings in the workplace as it is to eliminate negative behaviors.

1.3 Operationalizing wellbeing at work

Wellbeing at work has been defined in a number of ways, including: the presence of positive experiences and absence of negative experiences (Cotton & Hart, 2003), workplace affect and job satisfaction (Page & Vella-Brodrick, 2009), happiness within the workplace (Fisher, 2010), and more broadly as a “summative concept that characterizes the quality of working life” (Schulte & Vainio, 2010). Fisher (2010) argues that previous measures of happiness at work are limited by their focus on the individual level of analysis and reference only to pleasant experiences or judgments. She
proposes that in reality, happiness at work is complex; occurs at different levels, is transient by nature, can take many forms and have many causes. She goes further to assert that happiness at work – and in general - is shaped by four factors: 1) environmental events and circumstances, 2) stable factors within the individual such as their ‘set point’ of happiness (Lyubomirsky, King & Diener, 2005), 3) the interaction between the individual and the environment, and 4) intentional actions undertaken by the individual to increase their levels of happiness. She argues that previous measures of work happiness such as job satisfaction (Locke, 1976), positive affect (Fisher, 1997) and thriving and vigor (Spreitzer et al., 2005), are too narrow and focus on core job task performance, which has led to organizational researchers having only a piecemeal picture of individual happiness at work and therefore underestimating its impact.

In conclusion, Fisher proposes a three element approach to measuring individual happiness at work: 1) engagement with the work itself; 2) satisfaction with the job, including contextual features such as pay, co-workers, supervision and environment, and 3) feelings of affective commitment to the organization as a whole. In taking this approach she contends that a more complete understanding of employee happiness will be achieved. Whilst acknowledging that other dimensions of wellbeing could be included, Fisher’s model of work happiness is used in this thesis to operationalize the broader construct of employee wellbeing at work.

The research site for this thesis is a large independent school in Victoria, Australia and so we shall now look at the operating environment of schools and the relevance of employee wellbeing in the current school context.

1.4 Schools in the 21st century

As with other organizations, schools function in an increasingly complex environment that impacts their employees (Lambert & McCarthy, 2006; Leithwood & Riehl, 2003). Policy directives from many sources affect curriculum standards, program requirements and achievement benchmarks, which in turn are often linked to funding. Increasing diversity in student characteristics, such as learning capacities, physical and mental disabilities and cultural background require school
staff to be adaptive and responsive, and the rapid developments in technologies for teaching and communication have led to significant change in the internal operation of schools (Lambert & McCarthy, 2006). Added to this is the increasing focus on educational accountability and school outcomes, with research suggesting that improvements in school efficiency could lead to taxpayers receiving more than 22% more output in terms of developing knowledge and skills in key subject areas for the current level of investment in education (Barber & Mourshed, 2007). Ball (2003) suggests that the performance culture prevalent in schools today negatively impacts on teacher wellbeing, as individuals who entered their roles with a calling orientation (Wrzesniewski et al., 1997) find themselves having to meet targets, improve indicators to sustain funding and be the subject of frequent evaluation. This may explain OECD research, which indicates that Australia is one of many countries that struggle to attract and retain an appropriate number of top graduates from universities and schools to the teaching profession (McKenzie et al., 2005). Alongside pressure to produce performance outcomes, the current Australian education system is also criticized for being disconnected from the needs of young people in the 21st Century.

The wellbeing of young people has been the subject of a number of studies in the last decade (e.g., AIHW, 2010; Eckersley, 2008, 2009, 2010) with some concerning results. Eckersley et al. (2005) suggest that 20-30% of young people are suffering significant psychological distress at any time, with further evidence suggesting that 25% aged 14-19 years have a diagnosed mental disorder (Australian Government Office for Youth, 2009). In addition, Bernard, Stephanou and Urbach (2007) found that 40% of 10,000 students aged 5 to 18 years that they studied could be described as displaying lower levels of social and emotional wellbeing, including high levels of stress, worry and anxiety. Tucci, Mitchell and Goddard (2007) undertook online research with 600 Australian students aged 10-14 years and, through cluster analysis, found that only 52% of the population surveyed could be described as ‘feeling well, connected and supported’ (p. 5). Significantly, they also found that if young people did not feel supported by their family to help them manage their concerns and experiences, teachers were the next people they would turn to for support (12%), followed by
grandparents (8%). This highlights further the significant role that schools and, more specifically, school staff can play in developing and supporting the wellbeing of young people.

1.5 School staff wellbeing

Governments in Australia and other developed countries are recognizing that schools can be a key source of the skills and competencies that support young people’s capacity for successful adaptation to navigate the increasingly complex world of the 21st century (O’Connor, Sanson et al. 2015). Indeed, Wyn (2007) argues that “the goals of promoting individual and social wellbeing and social cohesion through education pose significant challenges for educational policy” (p.35). School leaders and teachers are considered critical to the success of education policy goals through their role modeling, support and provision of quality teaching, and in creating and sustaining a positive school culture (MCEETYA, 2008). Rowe (2007) proposes that teachers are the most valuable resource available to a school; Barber and Mourshed (2007) concur, arguing that, “the quality of a school system rests on the quality of its teachers” (p. 14). Further, a significant body of research (e.g., Hattie & Yates, 2013; Hattie, 2008; Rowe, 2003) indicates that other than the student themselves, teachers are the most important influence on student learning. A synthesis of more than 800 meta-analysis of relevant research involving more than 80 million students from around the world found that of six major sources of explained variance in student learning outcomes, positive teacher-student interaction is the most important factor in achieving effective teaching and learning (Hattie, 2008).

An intentional focus to foster staff wellbeing is one pathway through which the challenges facing schools could be met. Fostering staff wellbeing has been shown to influence individual wellbeing and leadership outcomes (Kern, Adler, Waters, & White, 2015; Waters & Stokes, 2015) and may indirectly influence on student outcomes through positive teacher-student interactions that may result through higher levels of staff wellbeing. Further, enhanced employee wellbeing is associated with higher work performance (see Clifton & Harter, 2003; Hart & Cooper 2001; Keyes, 2005) which may help to attract new employees or encourage current staff to remain in schools.
1.6 Fostering wellbeing in school staff

The emergence of the field of Positive Education is testament that schools are recognizing the need to provide the environment and culture in which young people can flourish and develop intellectually and morally. Set within the broader field of positive psychology, positive education is defined as “the science of Positive Psychology with best-practice teaching to encourage and support schools and individuals within their communities to flourish” (Norrish, Williams, O’Connor & Robinson, 2013, p. 148).

In parallel with positive psychology, a key principle of positive education is that the skills and mindsets for wellbeing can be explicitly taught and assessed, in a similar way to the specific processes and practices schools use to teach academic skills (Green, Oades & Robinson, 2011; Norrish & Vella-Brodrick, 2009; Hui et. al, 2009). A broad range of positive psychology interventions (PPI’s) have been developed by researchers that have been shown to increase enablers of wellbeing (e.g. hope, meaning) and decrease disablers (e.g. depression, anxiety) (Sin & Lyubomirsky, 2009). A PPI is defined as “an intervention, therapy, or activity primarily aimed at increasing positive feelings, positive behaviors, or positive cognitions, as opposed to ameliorating pathology or fixing negative thoughts or maladaptive behavior patterns” (Sin & Lyubomirsky, 2009, p. 469).

PPI’s have been shown to be effective across a variety of samples, including children (e.g. Hui & Chau, 2009; Waters, 2011), adolescents (e.g. Proctor, Maltby & Linley, 2011), and adults (e.g. Cohn, Pietrucha, Saslow, Hult & Moskowitz, 2014; Fredrickson, Cohn, Coffey, Pek & Finkel, 2008; Gander, Proyer, Ruch & Wyss, 2013). In a large review of adult samples Bolier et al.’s (2013) meta-analysis of 39 studies showed that PPIs can be effective in helping to reduce depressive symptoms and in developing subjective and psychological wellbeing.

PPI’s have also been trialed and tested in a variety of contexts, including schools. Waters (2011) review of positive psychology interventions (PPIs) in schools found that they were effective in developing skills and mindset relating to gratitude, hope, serenity, resilience and character strengths. Kern et al., (2015) found that students with higher levels of PERMA (Positive emotion,
Engagement, Relationships, Meaning, Accomplishment; Seligman, 2012) had higher subjective wellbeing, and a large meta-analysis of social emotional learning programs suggest that participants’ attitudes, behavior, and academic performance significantly improved in addition to their social and emotional skills (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). PPIs within schools have also been shown to boost positive affect, classroom engagement, and class cohesion (Quinlan, Swain, Cameron & Vella-Brodrick, 2015), to increase pro-social skills and behaviours and to reduce or help prevent wellbeing disablers such as depressive symptoms (Seligman, Ernst, Gillham, Reivich & Linkins, 2009). Further, Waters and White (2015) suggest that schools can infuse wellbeing-based changes into student experiences both inside and outside the classroom. Taken together, this provides some support for Clonan et al.’s (2004) suggestion that schools could, “serve as the nexus between the movement in positive psychology searching to promote positive human development and the institutions that could serve as the vehicle for this development” (p. 101). However, the application of positive education in schools is not without criticism.

Typical attempts to apply processes and practices for wellbeing in schools have been criticized for relying too much on specific PPIs aimed at individual-level change rather than whole-school, and focusing only on the wellbeing of students, rather than staff (Waters, 2011; Waters & White, 2015). Waters (in press) argues that while PPIs are implemented through pastoral care initiatives or through the individual classrooms of wellbeing-focused teachers, rather than being embedded in the organizational system, they do not take into consideration the underlying organizational factors creating the change in wellbeing. Responding to these criticisms, this thesis to explores pathways and processes to develop wellbeing in school staff through a whole-school systems perspective.

1.7 Adopting a systems perspective to school staff wellbeing

Schools, like many other organizations, are dynamic complex systems in that there are numerous factors to take into account in both the staff and the workplace itself when trying to influence wellbeing. A system exists when elements and processes interact together to form a
whole (Sweeney & Sterman, 2007) complex systems have added elements of interdependency and variability in that the behaviors of the elements and processes in the system are highly variable and strongly dependent on the behavior of the other parts (Shalizi, 2006). Schools are complex systems in that the behavior of staff and students (the elements and processes in the system) are both highly variable and strongly interdependent. A systems perspective attends to interrelationships, patterns, and dynamics of a system in addition to the parts of the system itself, with the purpose of thinking in a less fragmented and more integrated way (Sweeney & Sterman, 2007). Expanding these ideas, Williams and Hummelbrunner (2010) suggest that a systems perspective addresses three main concerns: (i) a desire to understand interrelationships i.e. the way in which things are connected, the consequences of these connections, and their significance; (ii) an understanding of multiple perspectives i.e. what they are, how they affect behavior and how they influence definitions of ‘success’ of an initiative; and (iii) an awareness of boundaries i.e. who sets them, their location, and their practical and ethical implications and consequences. Adopting a systems perspective helps to identify how a set of elements in a system interact to produce a particular behavior. As such it is particularly useful when a situation involves many actors with complex relationships (such as a school); when a problem is recurring or has been made worse by past attempts to resolve them (for example, fostering staff wellbeing); when a solution is not easily identified (such as increasing wellbeing in the workplace) or when an action influences or is influenced by the environment in which it is located (e.g., the influence of school culture on school staff wellbeing and performance) (Williams & Hummelbrunner, 2010).

It is suggested in the systems field that there are multiple places to intervene in the system each with varying levels of effectiveness (Meadows & Wright, 2009; Finegood & Cawley, 2011). Structural elements, such as the actors and operating parameters in the system are easily accessible but are often the least effective in creating sustainable system-wide change. Meadows (1999) argues that a shift in focus of interventions to a deeper, paradigm level is required in order to influence mindsets and mental models and change the way in which the system is perceived and
understood. This thesis adopts such an approach by exploring how the positive attitudes of school staff members influence their perception of school and levels of work happiness, and exploring the processes underlying those associations.
Chapter 2 Overview:

This chapter (published in the *International Journal of Wellbeing*) proposes a conceptual model to develop staff wellbeing – the Inside-out Outside-in (IO-OI) model. Extending the dual approach to developing wellbeing in the workplace (Sloan, 1987), this chapter presents ‘inside-out outside-in’ as a new way to conceptualize change that focuses on the *locus of the target for change*. The IO-OI model suggests that employee work happiness is influenced by individual-level personal resources developed through positive employee development and positive attitudes (inside-out factors), and social and job resources developed at the organizational-level through positive strategies and positive organizational culture (outside-in factors). The model further proposes three processes that connect outside-in and inside-out factors (selective exposure and confirmation bias, and attitude development), as well as a series of feedback loops that support upward spirals of positive development at the individual and organizational levels. Ways in which the IO-OI model can be used and tested are also suggested.
Chapter 2

Inside-out Outside-in: A dual approach process model to developing work happiness

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Abstract

This conceptual paper presents the Inside-Out-Outside-In (IO-OI) model, a dual process positive systems science approach to developing work happiness. The model suggests that work happiness of employees is influenced by individual level personal resources developed through positive employee development and positive attitudes (inside-out factors), and social resources developed at the organizational level through positive strategies and positive organizational culture (outside-in factors). The model further specifies three processes that connect outside-in and inside-out factors (attitude re-evaluation, selective exposure and confirmation bias), and a series of feedback loops that support upward spirals of positive development at the individual and organizational levels. We suggest ways in which the IO-OI model can be used and tested. The IO-OI model integrates the fields of attitudes, positive organizational scholarship, and positive organizational behavior, and provides a foundation for understanding how to best foster positive attitudes, create virtuous organizations and foster employee work happiness.
2.1 Introduction

Positive psychology (PP) scientifically studies flourishing in individuals, groups, and institutions (Gable & Haidt, 2005). Much of the early research in the field was concerned with applications of PP to individuals, mostly in clinical domains (Rusk & Waters, 2013). A recent peer-reviewed literature analysis of the field (Donaldson et al., 2014) found that this imbalance is being addressed, with more recent publications using school and work contexts in addition to clinical settings, with some focus on group level interventions. However, it is still the case that comparatively less PP research has adopted an holistic approach (Kern, Sioukou, Oades & Spong, 2016) or been conducted in the workplace (Cameron & Spreitzer, 2011). This is despite the call in Seligman and Csikszentmihalyi’s (2000) foundational article for PP to be used to promote “positive institutions” (p. 5).

Positive psychology has been criticized for ignoring the influence of organizational processes and the larger context through its focus on the individual (Kern et al., 2016; Linley, Joseph, Harrington & Wood, 2006; Waters, 2011). This has led to calls in the literature for a more systems perspective to be taken in the application of positive psychology (Waters, 2011). The emerging field of positive systems science responds to this call and combines the strength-based lens of positive psychology with the holistic lens of systems science (Kern et al., 2016).

Emerging research into the application of positive psychology at work has been pursued in two complementary fields: Positive Organizational Scholarship (POS) and Positive Organizational Behavior (POB). POS is defined as “the study of especially positive outcomes, processes, and attributes of organizations,” such as organizational virtues and peak performance (Cameron, Dutton, & Quinn, 2003, p. 4). POB focuses upon human resource strengths and psychological capacities, such as hope, optimism, self-efficacy, and resilience (Luthans, 2002; Luthans, Avolio, Avey & Norman, 2007). Whereas POS typically examines organizational (macro) phenomena in a positive light, POB is concerned with the cultivation of positive psychological (micro) states. Youssef and Luthans (2011) have called for a greater integration between these two fields so that leaders can
gain a more thorough understanding of how to support *individual* and *organizational* growth in ways that are mutually beneficial.

The current paper adopts a positive systems science perspective to PP and integrates the fields of POS and POB by presenting the *Inside-Out-Outside-In (IO-OI) model* - a process model that adopts Sloan’s (1987) dual intervention approach of top-down, organizational-level factors combined with bottom-up, individual-level factors to mutually support the development of employee wellbeing. More specifically, the new model presented in this paper suggests that: 1) particular positive attitudes provide employees with individual resources (bottom-up) that support their work happiness, 2) virtuous organizational culture (top-down) provides social and job resources that support work happiness, 3) individual level factors *interact* with organizational level factors, such that the positive attitudes of organization members enable them to recognize more of the virtues present in their workplace environment and make the most of the organization resources available, thus positively impacting their levels of work happiness and, 4) a number of feedback loops support these processes as self-sustaining positive energy systems. Positive attitudes of employees are changed both by organizational culture (outside-in) and individual focused (inside-out) approaches to building work happiness and a mutually reinforcing association exists between them.

This paper fills a number of gaps in the extant literature. In examining the influence of individual-level factors and organizational-level factors, this paper responds to calls for positive psychology interventions to integrate across levels of analysis and also to understand the influence that the social-environmental context has over individual attitudes, behaviors, and cognitions (Linley et al., 2006). In considering inside and outside aspects of the full system, the IO-OI model answers call to adopt a systems approach to developing wellbeing in organizations (Waters, 2011). Further, by identifying attitude development and explaining the associated processes involved, this paper responds to Lyubomirsky and Layous’ (2013) call for researchers to understand more about the
underlying mechanisms of PP interventions. We do this specifically within the context of positive psychology at work.

2.2 Employee Happiness

In today’s information and knowledge-driven society, an organization’s people are critical to its innovation and performance, and, as such, provide a source of strategic competitive advantage (Bartlett & Ghoshal, 2002; Lorange, 2005). In this context, employee wellbeing is recognized as an important outcome for organizations to develop in order to access the full capacity of their human capital (Van De Voorde, Paauwe, & Van Veldhoven, 2012). Wellbeing at work has been defined in a number of ways, including the presence of positive experiences and absence of negative experiences (Cotton & Hart, 2003), workplace affect and job satisfaction (Page & Vella-Brodrick, 2009), happiness within the workplace (Fisher, 2010), and more broadly as a “summative concept that characterises the quality of working life” (Schulte & Vainio, 2010).

The current model focuses specifically on happiness, which Lyubomirsky (2007) defines as “the experience of joy, contentment, or positive well-being, combined with a sense that one’s life is good, meaningful, and worthwhile” (p. 32). Although the terms wellbeing and happiness are used interchangeably by some researchers (e.g. Kristjanssen, 2014) others argue that they are distinct yet related phenomenon.

Recent developments in wellbeing theory recognize that wellbeing is a complex multi-dimensional construct that includes both hedonic and eudemonic elements (Ryan and Deci 2001; Ryff & Singer 2008) and is influenced by individual and contextual factors. For example, Diener et al. (2010) define wellbeing as a psychosocial construct that includes having rewarding and positive relationships, feeling competent and confident, and believing that life is meaningful and purposeful. Keyes (2002) proposes that wellbeing comprises three elements: (1) emotional wellbeing through the presence of positive emotions about oneself and one’s life; (2) social wellbeing through feeling connected and valued by others; and (3) psychological wellbeing through functioning well. Seligman (2011) suggests that there are five components to wellbeing: positive emotions, engagement,
relationships, meaning, and achievement. Whilst the measurement of wellbeing is criticized for being haphazard (Hone, Jarden, Scholfield & Duncan, 2014), indicators of wellbeing can include both subjective and objective measures (for example, life expectancy), and may include assessments of behaviors and relationships as well as thoughts and feelings (e.g.; the Flourishing Scale, Diener et al., 2010; PERMA-P profiler, Butler & Kern, 2015; European Social Survey, Huppert & So, 2013).

Definitions of happiness vary considerably (Kesebir & Diener, 2008). Typically referred to as subjective wellbeing (SWB), it is broadly defined as ‘the extent to which people feel and think that their life is going well.’ (Richard & Diener, 2009, p.75). Schimmack (2008) defines SWB as preference-realization in that it is an indicator of the degree of realization of all an individual’s preferences, with each preference weighted by importance. Page & Vella-Brodrick (2009) suggest that SWB is a positive state of mind associated with an individual’s whole life experience and Kashdan, Biswas Diner & King (2009) propose that it is an individual’s ‘internal state that represents a variety of subjective evaluations about the quality of one’s life, broadly defined’ (p.221). It is generally accepted that SWB comprises two correlated factors, 1) a cognitive evaluation of satisfaction with life; and 2) affect balance, or the frequent experience of positive emotions and infrequent experience of negative emotions (Diener, Sandvik & Pavot, 1991; Diener et al., 1999; Schimmack, 2008). Measures of SWB are inherently subjective and generally focus on positive thoughts and feelings to assess overall satisfaction with life (e.g. Satisfaction with Life Scale, Diener, Emmons, Larsen, & Griffin, 1985; Positive and Negative Affect Schedule, Watson, Clark, & Tellegen, 1988). However, evidence suggests that elements of wellbeing being not assessed by SWB measures, (for example relationships) strongly influence how people assess their quality of life and therefore also their levels of subjective wellbeing (Huppert & So, 2013).

Fisher’s (2010) model of wellbeing at work, proposes a multidimensional construct – “work happiness” – that includes (a) engagement with the work itself, (b) satisfaction with the job, and (c) feelings of affective commitment to the organization as a whole. For our purposes
here, we use this model of work happiness to operationalize the broader construct of workplace wellbeing, while recognizing that numerous other dimensions of wellbeing could be included.

Fisher (2010) argues that current workplace wellbeing measures such as job satisfaction (Locke, 1976), positive affect (Fisher, 1997), and thriving and vigor (Spreitzer & Sonensheim, 2004) by themselves are too narrow, but together provide a better indicator of employee functioning. Together, these factors access different elements of general wellbeing theory, capturing positive emotions through job satisfaction, achievement and flow through work engagement, and relationships through affective commitment. By presenting work happiness as a higher-order construct that comprises the unique and shared variance of these three factors, Fisher suggests that workplace leaders can move beyond boosting each of the variables individually and capitalize on the synergistic effects that occur when the three variables come together as a whole. This enables more sustainable ways to promote work wellbeing, for if an employee is low on one aspect of work happiness (e.g., engagement) but has high levels of the other elements (e.g., satisfaction and commitment) they can still achieve work happiness. It also enables leaders to adopt a more parsimonious approach to creating the conditions for work wellbeing.

Although Fisher’s model has not been fully validated, Williams, Kern, and Waters (2015) found some empirical support for it. Further, each of the elements in the model has a conceptual and theoretical evidence base. Work engagement comprises cognitive, affective, and behavioral elements in relation to an individual’s performance of their job role (Schaufeli & Bakker, 2003). Engaged employees have influence over events in their lives through their energy and self-efficacy, they create their own positive feedback through their positive attitude and activity level, and consider work to be fun (Bakker & Demerouti, 2008; Gorgievski, Bakker, & Schaufeli, 2010). Job satisfaction involves being content with one’s job (Judge & Kammeyer-Mueller, 2012). It includes both cognitive and affective elements, and results from an internal process of evaluating individual job facets or characteristics in a positive light. Evidence suggests that high levels of job satisfaction relate to job performance, and psychological and physical health (Faragher, Cass, & Cooper, 2005;
Judge, Thoresen, Bono, & Patton, 2001). Affective organizational commitment is an organization member’s emotional attachment to, identification with, and involvement in the organization (Meyer & Allen, 1984). High levels of affective commitment have been related to better job performance and organizational citizenship behaviors, and lower absenteeism and intentions to quit (Meyer, Stanley, Hersovitch, & Topolnitsky, 2002).

Engagement, satisfaction, and commitment have generally been conceptualized as attitudes towards work. For example, a person feels they are satisfied with their job when considering the way in which their manager provides feedback and support. This requires them to think about aspects of their work in order to form the attitude i.e. their work is the object of thought. Below, we propose that employees also have attitudes at work, such as hopeful, optimistic, resilient or confident attitudes. For example, a person with an optimistic attitude has positive expectations about the future. Moreover, we suggest that when employees experience positive attitudes at work, this leads them to have more positive attitudes towards their work. For example, an employee with an optimistic attitude at work may feel a greater sense of affective commitment to the organization because they expect that the future will go well.

### 2.3 Developing Workplace Happiness

There is increasing evidence to suggest that optimal levels of wellbeing are associated with desirable outcomes for employees and organizations. Wellbeing in employees has been related to their levels of engagement, organizational citizenship behaviors, and overall career success (e.g., Boehm & Lyubomirsky, 2008; Harter, Schmidt, & Keyes, 2003; LePine, Erex, & Jonson, 2002). For organizations, employee wellbeing is linked with customer satisfaction, productivity, presenteeism, effort at work, lower voluntary turnover, and fewer absenteeism /sick days (e.g., Giardini & Frese, 2008; Keyes, 2005; Sears et al., 2013; Wright & Bonett, 2007). Organizations who boost employee wellbeing receive a positive return on investment through reduced absenteeism and compensation claims (PriceWaterhouseCoopers, 2014). Further, there is a growing expectation from employees that organizations will take an active role in supporting their wellbeing, and this has become an
important point of competitive advantage for organizations in the employment market (Martin et al., 2005). As such, it is in the interest of organizations to intentionally support employee wellbeing. Organizational change literature suggests that change - such as shifting a workplace to support employee wellbeing - can be considered ‘top-down’ if initiated from the top of the organization through planned changes (Lewin, 1946), or ‘bottom-up’ if initiated from the bottom of the organization through emergent changes (Burnes, 1996, 2004). Further, Sloan & Gruman (1988) suggest that organizational-level factors, such as climate, influence outcomes and participation in workplace wellbeing programs as much as individual-level characteristics of employees such as gender and personality (see Figure 1.) As such, Sloane (1987) proposes that a dual approach that addresses both organizational and individual factors is required for interventions aiming to foster employee wellbeing at work.

**Figure 2.1.** Sloan’s (1988) dual approach model to employee participation in workplace health promotion programs

Based on this, the IO-OI conceptual model builds on both top-down organizational level and bottom-up individual level factors that influence employee wellbeing at work. However, we suggest that the current language is limiting. For example, an organization-wide training program about gratitude in the workplace may be offered to employees. This is considered a “top-down organizational level” initiative. As a result of the training, employees may develop new attitudes and
behaviors (individual level) that positively influence their workplace climate (organizational level). A work team may then decide to create a gratitude wall in their workspace or begin their weekly team meetings with gratitude stories, thus changing the physical environment and processes in the workplace through “bottom-up employee level” initiatives. Thus, while the original training initiative was top-down and aimed at the organizational level, the outcomes and initiatives have been at the individual and group level, and are considered bottom-up.

We believe a more accurate way of describing these factors is by positing that work happiness is influenced by factors “outside” of the employee and factors “inside” the employee. We define outside factors as those that are in the broader work environment that influence an employee’s experience of work, such as the organizational culture, work climate, job characteristics, managers/supervisors, colleagues, and physical work environment. We define inside factors as those that influence an employee’s experience of work and that cannot be separated from the individual, such as values, beliefs, attitudes, emotions, and behaviors. Thus, it is the locus of change being targeted by an intervention to develop work happiness that determines whether an organization is taking an “outside-in” or “inside-out” approach. For example, an initiative such as employee coaching program is an inside-out approach as the locus of change is the employee’s mindset, thoughts, feelings and behaviors. An initiative such as an employee starting a gratitude board is an outside-in approach as the locus of change is in the work environment. Equally, inside We also suggest that factors outside and inside the employee will have a mutually influencing relationship. Thus, both an “outside-in” and an “inside-out” approach will individually and synergistically impact work happiness (i.e., attitudes of engagement, satisfaction and commitment toward the organization) and may be initiated from the top-down or bottom-up of the organization.

Figure 2 shows the full IO-OI model and depicts the interrelationships proposed between an outside-in approach of developing social resources through virtuous organizational culture and an inside-out approach of developing personal resources through fostering positive attitudes in employees. The model also presents a number of important feedback loops that support the IO-OI
model as a self-sustaining positive energy system. Using the outcome of interest – work happiness – as the start point, the remainder of this paper unpacks the IO-OI model via six propositions. We first explain the outside-in organizational factors (propositions 1 and 2) and then move to the inside-out individual level influences (propositions 3 and 4). Finally, we will explain the joining mechanisms between inside-out and outside-in processes (proposition 5) and their influence on work happiness (proposition 6).
Figure 2.2. The Inside-Out-Outside-In (IO-OI) model: A dual approach process model to developing happiness at work

- **Outside In**: Organizational-level factors
  - Positive Organizational Strategies + Practices
    - 1. Positive Climate (e.g., articulate abundance vision)
    - 2. Positive Relationships (e.g., keep a gratitude journal)
    - 3. Positive Communication (e.g., give negative feedback positively)
    - 4. Positive Meaning (e.g., set ‘Everest’ goals)
  - Positive Employee Development (e.g., training, mentoring, job shadowing)
- **Inside-Out**: Individual-level factors
  - Positive Attitudes (e.g., hope, optimism, self-efficacy, resilience)
  - Positive Culture (e.g., forgiveness, trust, integrity, optimism, compassion)
- **Joining mechanism**
  - Positive Culture → Positive Attitudes
  - Positive Attitudes → Positive Employee Development
  - Positive Employee Development → Positive Organizational Strategies + Practices
- **Feedback loops**
  - Feedback loop (a)
  - Feedback loop (b)
  - Feedback loop (c)
  - Feedback loop (d)
- **Buffering Effect**
- **Amplifying Effect**
- **Heliotropic Effect**
- **Selective Exposure Confirmation Bias**
- **IRM of Evaluation**

- **Employee Work Happiness**
  - Org. Commitment
  - Job Satisfaction
  - Work Engagement
2.4 Outside-In Approaches to Developing Work Happiness

2.4.1 Organization culture and work happiness

*Proposition 1: Employee work happiness is supported through organizational social resources provided through a culture of virtuousness.*

Growing evidence indicates that organizational culture has a critical influence on employee wellbeing (Chang & Lu, 2007; Hartel & Ashkanasy, 2011). Organizational culture can be defined as the unique pattern of shared values, beliefs, and assumptions of employees about an organization learned through past experiences, that is manifest through observable artifacts, espoused valued, collective behaviors and shared beliefs. (Schein, 1980). For example, in a workplace with a culture of safety, safe work procedure signs are displayed in the workplace (observable artifacts). Formal organization communication such as newsletters and annual reports provide metrics such as the number of days without a safety incident (espoused values). Safety is frequently the direct topic of conversations in the workplace and underlies many others (shared beliefs). And through their individual job roles, everyone in the organization is working to achieve exemplary standards of safety across all aspects of the organization (collective behaviors).

Organizational culture can range from being hostile and destructive to flourishing internally and externally. Organizations with constructive culture orientations promote social support, participation, teamwork, constructive interpersonal relations, and self-actualization, whereas destructive culture orientations foster competition, oppositional relational styles, and avoidance (Cooke & Rousseau, 1988). Constructive cultures are best espoused by a virtuous culture, in which “employees collectively behave in ways that are consistent with the best of the human condition and the highest aspirations of human kind” (Cameron & Winn, 2012, p. 235).

Virtues at the individual level are considered to be positive traits that represent the best of the human condition – such as hope, optimism, kindness and curiosity – which are valued across time and culture (Peterson & Seligman, 2004). Extending virtues to the
organizational level, Cameron, Bright, and Caza (2004) suggested a five-factor model of organizational virtuousness comprised of 1) organizational forgiveness, through which mistakes are quickly forgiven and used as opportunities for learning; 2) organizational trust, in the courtesy, consideration and respect enacted in the organization and the mutual trust between peers and leaders; 3) organizational integrity, demonstrated by the honesty, trustworthiness and honor that pervade the organization; 4) organizational optimism, in the belief of organizational members that they will succeed in doing well even in the face of challenges; and 5) organizational compassion, through the common acts of compassion and concern that show that people care about each other. A culture of organizational virtuousness is one that embodies these five values of forgiveness, trust, integrity, optimism, and compassion at the organizational level (rather than within individual employees).

Organizational virtuousness (OV) is a component of workplace culture that manifests through observable artifacts, espoused values, shared beliefs, and collective behaviors. For example, virtues-based practices such as gratitude boards (to support compassion and optimism) or leaders beginning meetings with a “what went well” exercise (to support optimism and trust) provide observable artifacts of a virtuous culture. Such practices also provide opportunities to foster virtues throughout the organization as a shared set of values is espoused. Other elements of culture, such as shared beliefs and collective behaviors, may be influenced by embedding virtues in organizational behaviors and leadership, engaging in strengths-based performance conversations, and infusing virtues into training, development and coaching (Bouskila-Yam & Kluger, 2011; Cameron et al., 2011).

A virtues-infused culture may also provide social resources that influence the quality of relationship within organizations such that employee, work happiness increases. For example, a workplace culture in which leaders are optimistic about the future, compassionate in their communication, and forgiving when needed, may help develop supportive leader-worker relations and a supportive work community. Leaders with high levels of gratitude may be more likely to enact the company’s recognition and reward programs, thus enhancing
employee happiness. A culture in which there are high levels of integrity and trust between colleagues will enable regular and transparent feedback. Evidence suggests that social resources within organizations such as support from colleagues, newcomer socialization and perceived organizational support, relationships with co-workers and supervisors, and leadership enacted with consideration, are antecedents to work happiness (Bakker & Demerouti, 2008; Judge & Kammeyer-Mueller, 2012).

2.4.2 Positive organization strategies and virtuous organization culture

Proposition 2: Positive strategies and practices increase the presence of virtues within the organization through the heliotropic, amplifying, and buffering effects.

Working backwards from organizational virtuousness to positive organizational strategies (see Figure 2), we suggest that Cameron’s (2013) positive organizational strategies framework may be used by leaders to systematically and strategically support a more virtuous work culture. The framework encourages leaders to put in place four positive strategies: 1) Positive climate: Create a culture of abundance, by building the collective capacities of organization members; 2) Positive relationships: Develop positive energy networks that unlock capacity and resources within individuals and the organization to perform, create, and persist; 3) Positive communication: Deliver negative feedback positively so that relationships build and are strengthened; and 4) Positive meaning: Set Everest goals, which represent the peak achievement for an organization with a moral purpose and meaning.

Each strategy has specific positive practices designed to develop more collective virtues and influence the attainment of a positive culture (Cameron, 2013). For example, under the positive climate strategy of creating a culture of abundance, leaders can engage in the specific positive practices of articulating a positive vision and generating commitment. Under the positive relationships strategy of developing positive networks, activities can include mapping positive energy networks and keeping a gratitude journal. To enact the positive communication strategy, when delivering feedback, leaders can focus on problems, rather than personal attributes, and role model honesty and genuineness. Finally, in the positive meaning
strategy of setting Everest goals, positive practices include using SMART (specific, measurable, achievable, realistic, timely) goal attributes and identifying “abundance gaps” by determining what signifies positively deviant performance (i.e., that which is significantly above the norm, in comparison to current performance).

Three sub-processes have been proposed to explain the relationship between positive organizational strategies and virtuousness in the organization culture. The first is the heliotropic effect, defined as the instinct in all living systems to move towards positive energy and away from negative energy (Cameron et al., 2011). For example, in setting Everest goals, organizational members are asked to focus on affirming practices that create positive, life-giving energy at work. Collective efforts to achieve Everest goals bring to life virtues such as optimism for the future, trust in colleagues to fulfill their commitment to the goal, and forgiveness when plans go astray.

The second sub-process is the amplification effect, which suggests that positive strategies and practices create self-reinforcing positive spirals through increasing positive emotions, social capital, and pro-social behaviors that lead to the development of a virtues-based culture (Cameron et al., 2004). For example, Cameron and Plews (2012) provided a case study of the implementation of positive practices at Prudential Real Estate and Relocation (PRER). CEO Jim Mallozzi asked his senior management team to identify three things that they valued about three other members of the team and tell those people about them. In doing this, the group articulated the attributes, capacities, and strengths of the people in the room, generating the belief that they could succeed in doing well even in the face of the current business challenges. They turned this belief into action by inviting individuals to share a current business problem that they were trying to solve, and the rest of the group offered ideas and support to help solve it. This, in turn, increased optimism in the group, which was expanded through the rest of the organization as the ideas were put into action and members saw the business benefit of their thinking. Thus the virtue of optimism was amplified through the adoption of positive practices that lead to self-reinforcing positive spirals and cultural
change, as these virtues were spread into the culture of the organization through beliefs, behaviors, values, and artifacts.

The third sub-process is the buffering effect, in which positive strategies and practices provide buffering effects to the organization by increasing resiliency, solidarity and a sense of efficacy (Cameron, Bright & Caza, 2004; Cameron et al., 2011) that support a virtues-based culture. For example, in a study by Cameron et al. (2004) of approaches to downsizing, they identified that Southwest Airlines adopted positive strategies and practices in the economic aftermath of the U.S. terrorist attacks on September 11, 2001. By continuing an un-matched industry record of not downsizing, Southwest Airlines CEO Jim Parker publicly announced that the company were prepared to suffer financial damage to protect their peoples’ jobs. This was an explicit and public commitment to employees, demonstrating the virtues of integrity and optimism. These positive practices led to trust and forgiveness from the staff, an increased sense of security, and easier union negotiations that further reinforced the virtues and resulted in better objective performance (e.g., productivity, stock value) and perceived performance (e.g., staff turnover) in the mid to long term.

2.4.3 Discussion

In sum, factors outside of the employee such as organizational culture and positive practices influence their levels of work happiness. It is suggested that a virtuous culture provides job and social resources that support employee work happiness, and that leaders may use specific positive strategies and practices to develop a culture of virtuousness. While the outside-in approach to work happiness is important, we argue that it is necessary but not sufficient, for three reasons. First, past research shows that organizational approaches to cultural change are slow (Cameron, 2008). Second, organization level culture change initiatives are open to a wide variability in delivery, uptake, and commitment from management and employees (Todnem By, 2005). Whilst some leaders may support the practices, others may not, thereby under-mining efforts to reach a “tipping point” in the collective behaviors within the organization. Third, positive practices are external to the employee; they do not require
internal re-evaluation of attitudes (defined as beliefs, feelings and/or behaviors) and could be viewed as “just another policy initiative”.

Beyond these three difficulties in cultural change, we also believe that, even when cultural change is successful and a virtuous culture is developed, this still may not lead to work happiness. We propose that it is not simply the presence of virtues that matters, but that to benefit happiness, employees need to notice and evaluate the virtues present in the culture. For example, a team with a positive culture might still have members who fail to see the virtues around them, and resist or even impede positive practices such that the presence of virtues has no impact on their happiness.

2.5 Inside-Out Approaches to Developing Work Happiness

We now move to the lower half of the IO-OI model (Figure 2), to look at the inside-out factors that influence work happiness. Earlier we proposed factors “outside” the employee such as organizational social resources that support work happiness. Evidence suggests that beyond the outside factors described in part 1, there are also factors within the employee that influence happiness, such as attitudes, positive affect, and core-self evaluations (e.g., Hobfoll et al., 2003; Judge & Kammeyer-Mueller, 2012).

2.5.1 Employee attitudes

One factor that influences an individual’s capacity to evaluate the presence of virtues in the workplace culture is their attitudes. Attitudes can be defined as “an evaluation of an object of thought” (Bohner & Dickel, 2011, p. 392). One function of attitudes is to help us navigate our environment effectively and efficiently by removing the need to evaluate and make decisions about each new object encountered (Katz, 1960). Attitudes help assimilate new knowledge and have been found to help categorize objects, support decision-making ease, and decision-making quality (e.g., Katz, 1960; Azjen, 2001; Blascovich et al., 1993; Fazio et al., 1992; Smith et al., 1996). Further, workplace attitudes have been found to influence outcomes such as intention to quit, in role and extra role performance, client satisfaction, proactivity, adaptability, and creativity (Mobley, 1977; Rothbard, & Patil, 2012).
Historically a tripartite view of attitudes held that they are formed and manifest through three components – beliefs, feelings, and behaviors (Eagly & Chaiken, 1993) and that all three components must be present and consistent for the attitude to exist (Rosenberg & Hovland, 1960). Research by Zanna and Rempel (1988) re-examined these assumptions and proposed a more nuanced view, in that attitudes can be established and enacted through any of the three pathways.

The cognitive pathway to attitude formation is driven by an individual’s beliefs about whether an attitude object is (un)desirable or will lead to (un)desirable outcomes. The expectancy-value model (Fishbein & Ajzen, 1975) is an example of this approach. It proposes that an attitude towards an object is formed by estimating the probability that the object has particular attributes, and multiplying this by the value the individual places on it to give an ‘expectancy-value’. By summing all of the ‘expected-values’, the individual arrives at an overall attitude towards the object.

The affective pathway depends upon how an attitude object makes us feel. There are three primary ways through which this may occur. First, in operant conditioning, attitudes that lead to positive (negative) outcomes are more (less) likely to be repeated (e.g., Hildum & Brown, 1956) Second, in classical conditioning, attitudes are formed non-consciously through an individual attending to differences between attitude objects in their environment and making associations between them. For example, an attitude object such as a brand of clothing might be paired with another object such as young attractive models, resulting in a positive affective response and the formation of a positive attitude about that object. Third, in exposure, greater contact with an attitude object makes it more accessible to perception and increases liking for it (Zajonc, 1968).

The behavioral route to attitude formation arises when one has had experience with an attitude object without clear feelings or beliefs, and attitudes can be inferred by the individual attitude holder from their past behavior (Bem, 1967; Fazio & Olson, 2007). For example, an individual may have voluntarily attended a workplace training session without being clear or
conscious of their beliefs and/or feelings about it, but in retrospect can reason that they have a positive attitude towards their own development and training generally.

This integrative view of the cognitive, affective and behavioral elements of attitudes is supported in the MODE (Motivation and Opportunity as DEterminants) model, in which attitudes are understood to be associations between an evaluation and an object stored in memory, and that these associations can be based on cognitive, affective and/or behavioral knowledge from which a ‘summary’ evaluation is reached (Fazio, 1990; Fazio 2000).

2.5.2 Positive employee attitudes and work happiness

Proposition 3: Employee work happiness is supported through individual personal resources provided by positive attitudes.

The attitudes of organization members assist them to evaluate the behaviors of colleagues and managers, as well as organization policies, their job role, and the organization as a whole. They also influence member thoughts, feelings, and behaviors whilst at work. Attitudes were defined earlier as “an evaluation of an object of thought”; thus we define a positive attitude as “a positive evaluation of an object of thought”. As we explain below, the development of specific positive attitudes is likely to increase personal resources, such as the frequency of positive affect and positive core-self evaluations linked to resiliency, and an individual’s sense of their ability to successfully control their environment, and, in doing so, develop member work happiness.

In the positive organizational literature, psychological capital (PsyCap) has been identified as a foundational evidence-based framework that leaders can use to develop the positive psychological capacities of organization members (Luthans, Youssef, & Avolio, 2006). PsyCap is defined as “an individual’s positive psychological state of development” (Luthans, Youssef, & Avolio, 2007, p. 3). PsyCap comprises four elements: hope, efficacy, resilience, and optimism, which have been shown to lead to higher performance outcomes in the workplace (Luthans, Avey, Avolio, & Peterson, 2010; Avey, Reichard, Luthans, & Mhatre, 2011; Newman, Ucbasaran, Zhu, & Hirst, 2014; Luthans, Youssef-Morgan, & Avolio, 2015).
PsyCap has traditionally been considered a “resource bank” that enables successful performance and response to challenges or events, and that enables people to flourish, and to have success in multiple life domains, including work, relationships, and their health (Hobfoll, 2002). However, we propose that in addition to its function as a resource bank, PsyCap can also be conceptualized as positive attitudes. We do this for five reasons. First, the mechanisms that are proposed to underlie the synergy between the elements of PsyCap (Luthans et al., 2010; Luthans, Avolio, & Youssef-Morgan, 2015) also reflect the ways in which attitudes are formed, influence and manifest i.e., through an individual’s thoughts, feelings, and behaviors. Second, the cognitive, affective and conative processes through which it is proposed that PsyCap influences wellbeing (Youssef-Morgan & Luthans, 2014; Luthans, Avolio, & Youssef-Morgan, 2015) mirror the influence and manifestation of attitudes in thoughts, feelings and behaviours. Third, the suggestion that PsyCap fosters “the formation of positive appraisals of past, present and future events” (Youssef-Morgan & Luthans, 2014, p. 185; Luthans, Avolio, & Youssef-Morgan, 2015) suggests that not only is PsyCap a resource but that it is also an attitude, more specifically a positive attitude because in either conceptualization – as a resource or an attitude – it involves an evaluation of an object of through in the form of a positive appraisal. Fourthly, the argument of PsyCap as “state-like”, and manageable and open to development (Youssef-Morgan & Luthans, 2014; Luthans, Avolio, & Youssef-Morgan, 2015), mirrors those of attitudes that are also believed to be open to development. Finally, the Implicit PsyCap scale (Harms & Luthans, 2012) which measures less conscious levels of PsyCap, suggests that it is a construct that can be understood as both an attitude given that attitudes have an implicit aspect to them. As such, we operationalize positive attitudes here as PsyCap.

The four attitudes of PsyCap have been found to be open to development and impacted through work-based interventions (Youssef & Luthans, 2007), suggesting that it is a valid model for leaders when fostering effective employee change. For example, Luthans, Avey, Avolio, and Petersen (2010) tested a PsyCap intervention with 80 managers. The two-hour intervention comprised a series of targeted exercises designed to develop each of the four
PsyCap sub-factors, and integrative reflective exercises to enable understanding an operationalization of the higher-order PsyCap construct. PsyCap scores increased, and their self-rated and manager-rated performance also significantly increased.

The four positive PsyCap attitudes may also be built upon through workplace triggers such as the positive strategies and practices mentioned earlier (Cameron, 2013). For example, the positive practice of providing negative feedback in a positive way requires a leader to have efficacy in their communication skills (positive core-self evaluations) and optimism in the expectation that their desired outcomes will be achieved through the discussion (positive affect). It requires the organization member receiving the feedback to have a resilient attitude to failure, and hopeful, optimistic attitudes to overcoming the problem and improving their performance (positive affect and positive core-self evaluations). Thus, positive PsyCap attitudes may provide both organization members and leaders with personal resources that enable and support their work happiness.

We therefore propose that the PsyCap framework can enable organizations to develop four specific positive attitudes: hope, optimism, self-efficacy, and resilience. A hopeful attitude is one in which organization members have high levels of agency (goal-directed energy) and can generate pathways and planning to meet their goals (Snyder et al., 1991). An optimistic attitude involves a positive future expectation (Scheier & Carver, 1985). Self-efficacious attitudes comprise an individual’s confidence in their motivation, skills, and cognitive resources to successfully meet the demands made of them (Stajkovic, Luthans, & Slocum, 1998). An attitude of resilience is characterized by the ability to “bounce back” from challenging situations (Masten & Reed, 2002).

2.5.3 Fostering positive attitudes

**Proposition 4:** Positive employee development (e.g. training, mentoring, job shadowing) fosters positive attitudes by triggering learning-induced, behavior-induced, and context-induced attitude change.
The formation of attitudes is considered a critical adaptive capacity. Of equal importance is that attitudes can be changed in light of new information and experiences (Bodenhausen & Gawronski, 2013). Three theories are proposed regarding the mechanisms involved in attitude change to explain the link between positive employee development and positive attitudes: learning-based; behavior-induced and context-induced (Bodenhausen & Gawronski, 2013).

First, **learning-based theories** involve cognition and affect, and suggest that learning new information about an attitude object (cognition), paired with a positive emotional response (affect), drives observed attitude change. Learning can be *propositional*, in that new information is proposed about an attitude object, or it can be *associative*, such that new “pairings” of associations between attitude objects are made. Classical conditioning theory (Pavlov, 1927/1960) suggests that the acquisition of new information about an object leads to attitude change, further, that new links can be established between attitude objects in memory based on co-occurrences between objects and events (Baeyens et al., 1992). For example, a part-time employee may need to attend a first-aid training workshop that is being run outside of their normal working hours. As such, their attitude towards attending the workshop is negative and their attitude about the organization is that part-time employees are not valued or considered. They then learn that a second workshop has been organized at a time that is convenient for part-time employees, and that part-time employees will have first refusal to attend this workshop (new information). As a result, the employee’s attitude towards the workshop becomes more positive, as does their association between their current organization and part-time employees.

Second, **behavior-induced** attitude change examines the influence of an individual’s behavior on the evaluation of an attitude object. For example, an employee may attend a training workshop because it is compulsory, and the act of attending engenders positive attitudes towards the workshop. Cognitive dissonance theory suggests that inconsistencies between cognitions and behaviors motivate an individual to find consonance, which, if it cannot be found through external factors, will lead to a change in attitudes (Festinger, 1962).
Bem’s (1967) self-perception theory assumes that individuals make inferences about their attitudes from their past behavior. For example, if they attended a non-compulsory workshop, they are likely to conclude that, “If I attended the training workshop without an external justification, then I must hold an internal attitudinal reason for doing so.”

Third, context-induced attitude change recognizes the significant influence that contextual cues can have in object evaluation. An individual may have extensive and diverse knowledge about many attitude objects; it is unlikely that all of this will be accessed at the point of evaluation, and the specific knowledge subset that is activated, based on contextual cues, may lead to very different evaluations (Tourangeau & Rasinski, 1988). For example, an employee is considering whether to attend a training workshop. Through a conversation with a colleague, they are prompted to consider the benefits they will gain from it, rather than the work that they could be doing during that time instead (contextual cue). Cognitive dissonance theory suggests that their attitude may become more positive toward the workshop because they will need to resolve the dissonance created by focusing on the benefits of the training in the conversation.

In summary, a number of mechanisms are shown to be involved in attitude change: learning processes stimulate change in beliefs and feelings through the acquisition of new information or associations about an attitude object, an individual’s behavior can lead to a re-evaluation of attitudes, and the context of an attitude evaluation can influence different knowledge subsets being accessed, resulting in varied evaluations about the same attitude object. Any one of these processes may result in changes to cognition (beliefs), affect (feelings), and/or behavior.

We propose that engaging organizational members in positive development such as training, mentoring, and/or job shadowing can aid the development of positive attitudes by impacting one or more of these three attitude change mechanisms. For example, a PsyCap training program might provide contextual cues that focus employees on their attitude. As part of the training, an employee may set a goal of completing a gratitude journal every day for two
weeks (behavioral change). By noticing positive aspects of their work environment (cognitive change) for which they feel grateful (affective change), positive attitude changes occur, developing an “attitude of gratitude”.

2.6 Connecting Inside-out and Outside-in Factors

We have explored organizational factors that support work happiness (outside-in) such as virtuous organizational culture, and internal factors that influence work happiness (inside-out), such as positive employee development and positive attitudes. We now consider three mechanisms that may link the inside-out and outside-in factors: 1) the iterative reprocessing of evaluations (proposition 5), 2) selective exposure, and 3) confirmation bias (proposition 6).

2.6.1 The Iterative Reprocessing Model (IRM) of attitude development

**Proposition 5:** Individual attitudes iteratively combine with evaluations of the organization environment in either a positive way that supports work happiness, or a negative way that hinders work happiness.

We suggest that the Iterative Reprocessing Model (IRM; Cunningham & Zelazo, 2007; Van Bavel, Xiao, & Cunningham; 2012), provides a lens for understanding how a virtuous culture (outside) influences employee positive attitudes (inside). According to the IRM, an attitude object (e.g., a new company policy) triggers an evaluative cycle through which lower-order, automatic (or implicit) stored evaluations influence and are influenced by higher-order, reflective (or explicit) real-time processes. This leads to a dynamic evaluation of the attitude object that combines associations stored in memory with current information to create a positive or negative attitude toward that object. As such, any single evaluation represents the current processing state of a greater evaluative system, which is influenced by those elements of the stored attitude that are currently active and by the level of reflective processing that takes place. As illustrated in Figure 3, each iterative cycle of evaluation is influenced by new contextual or motivational information, which creates a new evaluation of the attitude object that takes into account finer attitude-object detail, the context, and/or current goals.
As an example, consider the scenario where an employee has a pressing project deadline. Their stored attitude associated with deadlines is that all deadlines are stressful. However, this may be altered in this specific instance if the department manager adds extra staff and resources to the project. The actions of the manager lead to the attitude-object relationship becoming more specific, and the employee’s stored attitude that deadlines are stressful becomes more nuanced for this specific deadline, which has become less stressful. Hence, while our automatic, stored (implicit) attitudes help us to make quick assessments, these attitudes are dynamic and can be altered when the context or goals change, through the influence of reflective (explicit) real-time processes.

The number of times an attitude object goes through the iterative process depends on personal and situational variables such as cognitive ability, motivation, and opportunity (Fazio, 1990). Thus, evaluations may be formed very quickly and remain stable for a time, or they may go through many iterative cycles over a long period of time and be continually altered and updated. Increasing reflective processes in individuals enables the more nuanced and/or goal congruent evaluations needed to navigate complex environments, self-regulate and appraise
abstract concepts such as virtues in the organization culture (Van Bavel, Xiao, & Cunningham, 2012).

We propose that employee development to foster specific positive attitudes can trigger a positive iterative evaluation cycle by providing new motivational information with which members can re-evaluate their stored attitudes. In parallel, virtues in the organizational culture enabled through positive practices may provide new contextual information that keep virtuous cues in their organizational environment (OV) as the active process. Thus a positive cycle of evaluation and attitude change may result, as positive individual attitudes are fostered through positive employee development and motivation, and are supported and reinforced by positive context cues in the organizational environment (OV). We propose that this ongoing positive spiral may, in turn, lead to higher levels of employee work happiness. Equally, we surmise that the IRM can work in a negative cycle, such that when positive attitudes (PsyCap) are not supported and reinforced by positive context cues in the organizational culture (OV), employee work happiness decreases.

For example, employees may have a new manager transfer from another department. Team members may have heard negative rumors about the manager, such that they have a negative attitude towards the manager. Although the manager does positive and constructive actions during the first week, the employees observe one situation where she becomes frustrated, which reinforces a negative attitude about the manager. An employee might feel dissatisfied with the manager, disengaged with their work, and less committed to the organization as a whole. However, over the next few weeks, the manager acts in many virtuous ways, which causes dissonance between the team members’ initial negative evaluation and the reality of her management style. This triggers an evaluative iteration within the team members to resolve the conflict between their stored evaluation and the virtuous behavior being shown by the manager. In doing so, the evaluative cycle provides the opportunity for the relationships to develop more positively. As attitudes shift, affect improves, ultimately increasing team members’ work happiness.
2.6.2 Selective exposure and confirmation bias

*Proposition 6: Selective exposure and confirmation biases allow employees with positive attitudes to notice and evaluate practices and virtues present in the organization environment in a more positive light, resulting in greater work happiness.*

Inner attitudes and outer aspects of the organization are further connected by what an individual subconsciously and consciously gives attention to. Selective exposure is the phenomenon whereby people focus on information in their environment that is congruent with and confirms their current attitudes (Klapper, 1960). It has been found to have influence in a wide range of contexts, including attitudes to media use (Stroud, 2007) and decision making (Kastenmüller et al., 2010), and is acknowledged as being relevant to organizations (Kastenmüller, 2010). Klapper (1960) suggests that elective exposure comprises three processes: 1) selective exposure, in which people avoid communication that is opposite to their existing attitude; 2) selective perception, in which, when confronted with material that opposes their viewpoint, people either do not perceive it or they make it fit for their existing opinion; and, 3) selective retention, in which people simply forget attitude-incongruent information. For example, imagine the previous situation with the new manager; team members with positive attitudes are less likely to join in the negative gossip about the manager (selective exposure), they will explain away the incident of frustration as being a “one-off” (selective perception) or they may forget that it happened at all (selective retention).

Individuals may also actively seek out, remember and assign more weight or validity to information that supports their current attitude. This is known as confirmation bias and refers to “unwitting selectivity in the acquisition and use of evidence” (Nickerson, 1998, p. 175). Confirmation biases have been shown to be pervasive across a variety of contexts, including politics (Tuchman, 1984), science (Hergovich, Schott, & Burger, 2010), and law (Pennington & Hastie, 1993). A number of theories are proposed to explain confirmation bias, including the desire to believe information that is more pleasing or the “Pollyanna” principle (Matlin & Stang, 1978), limits to individual information-processing capacity i.e., the ability to consider only one
option at a time (Doherty & Mynatt, 1986), and positive-test strategy or positivity bias, in which individuals find it easier to process confirmatory rather than opposing information (Mezulis, Abramson et al., 2004). As an example and to continue the scenario above, the information that the team members have taken in about the new manager through the processes of selective exposure (i.e., the manager’s virtuous behavior) may be recalled more easily, assigned more weight and given higher levels of validity than the negative rumors. This will confirm their earlier evaluation that she is a good manager, and in doing so, increase team members’ work happiness.

The processes of selective exposure and confirmation bias thus impact what an employee sees, pays attention to and interprets in their environment. It is likely that employees with positive attitudes have greater accessibility to spotting the virtuous behaviors of others and the positive practices put in place by an organization because these features of the work environment are attitude-congruent (selective exposure), and seem valid (confirmation bias). Figure 4 demonstrates the interactive loop that in theory stems from positive employee development. However, this loop does not just occur during employee development. Rather, the loops are likely to continue to occur over time as selective exposure and confirmation bias influence the attention and weight people give to virtue opportunities present in an organization over time (e.g., positive practices and other displays of virtue).

Returning to the example of the new manager, the team members focused on the positive behaviors (selective exposure), which confirmed their desire for positive change (confirmation bias). By consistently implementing virtuous behaviors, the manager further develops the team members’ positive attitudes through learning and context change; consequently, team members are more likely to attend to positive aspects in the environment and behave in ways that are attitude congruent, thus contributing to the positive environment. This creates a positive energy feedback loop in which the virtues-based organization environment and increasingly positive individual attitudes are mutually supportive and reinforcing over time.
Figure 2.4. The processes and outcomes of positive development on employee attitudes and evaluation of virtues in the organization culture.

2.7 Connecting the Pieces

Coming full circle, the complete IO-OI model (Figure 2) details the six propositions proposed in this paper. The model depicts the interrelationships between the inside-out approach of developing individual resources through positive attitudes, and the outside-in approach of developing social resources through virtuous organizational culture. Early evidence suggests that both approaches enable and support the development of work happiness independently and synergistically (Williams, Kern, & Waters, 2015).

Figure 2 also shows a number of feedback loops that create and sustain upward spirals of positive development and support the IO-OI model as a self-sustaining positive energy system. The development of higher levels of work happiness is experienced as greater satisfaction, commitment, and engagement of members, thus increasing their awareness and
receptivity to positive practices (feedback loop (a)), their enactment of congruent behaviors that support a virtuous culture (feedback loop (b)), their motivation to engage in positive development (feedback loop (c)), and positive attitudes such as PsyCap (feedback loop (d)). Thus the process of developing work happiness can be an iterative cycle that unfolds in a dynamic fashion over time and is mutually affected by inside-out and outside-in influences and feedback loops.

The IO-OI model suggests an iterative process for developing positive attitudes within individuals, but how does this benefit an organization? We suggest that by increasing positive attitudes in many members, collective change may occur. When a critical mass is reached, there is greater capacity for virtuousness across the whole system. The IO-OI model suggests that this may arise in a number of ways. First, as people develop positive attitudes such as hope, optimism, resilience, and efficacy, they will be more open to seeing virtuousness in the organization culture because it is attitude congruent. As such, through the processes of selective exposure and confirmation bias, they perceive more virtuousness in others and evaluate other people’s behaviors from a virtues perspective. Haidt’s (2000) elevation proposition suggests that when we perceive virtuous behavior in others, we are motivated/elevated to behave virtuously ourselves. Hence, by seeing more virtues in others, organization members may behave more virtuously themselves. Second, Fowler and Christakis’ (2008) contagion theory suggests that emotions and behaviors are spread through social networks and Dawkins et al. (2015) suggest that PsyCap is developed at the group level via social contagion. As such, employee positive attitudes developed through training and manifest through positive thoughts, feelings, and behaviors, may positively influence colleagues to feel and behave in a similar way.

2.8 Future Research: Testing the Model

We have suggested a theoretical model that links inside-out and outside-in factors, with a series of six propositions. These need to be empirically tested. A number of fruitful research questions can be addressed using the IO-OI model. For instance: 1) How are inside-
out and outside-in interventions most effectively introduced – all at once or over time to allow integration into attitudes? 2) Are there factors about the existing culture that influence the success of the IO-OI model (e.g., a constructive culture orientation versus a destructive culture orientation)? 3) How might the cultural context influence the processes described in the model? 4) Are there certain types of leaders who are best to lead the IO-OI development process? Should organizations which want to develop work happiness and a virtuous culture recruit people with high PsyCap? The answers to these questions will help to inform organizations of the best approach to follow when developing employee work happiness using a dual intervention approach.

Multiple approaches can be used to test the model and propositions. It would be of interest to understand how differences in taking an outside-in (positive practices and virtuous culture) or inside-out (positive employee development and positive attitudes) approach impacts work happiness, and how different phasing and timing of these two approaches affects employee wellbeing outcomes. Organizations with multiple departments or business units within the same parent culture would provide a valuable setting to undertake such comparative tests, with one unit using an inside-out and the other using an outside-in approach. It would also be beneficial to test the IO-OI model within a variety of organizational contexts (e.g., a not-for-profit organization such as a school and a profit-driven industry such as a merchant bank).

Longitudinal studies of the IO-OI model may help to uncover the potential time-lag between implementing specific interventions and changes in levels of work happiness. For example, Cameron et al. (2011) assessed the extent to which positive practices affected organization performance over time and which practices had the most predictive power across 29 nursing units. Longitudinal designs also provide a time-perspective to the reciprocal loop between the development of positive attitudes and positive practices, which will help organizations understand the frequency with which they need to positively trigger employees’ re-evaluative cycle through the workplace environment to sustain employee wellbeing.
Attitudes can be challenging to measure, but these inherent challenges can be overcome through creative and varied approaches to measurement. Use of everyday experience methods such as the daily diary (Bolger, Davis, & Rafaeli, 2003) and experience sampling method (ESM, Hektner, Schmidt, & Cziksentmihayli, 2007) will help minimize retrospection bias (Reis, Gable, & Mancini, 2014), and will allow researchers to test the IO-OI model through everyday behaviors that occur in the natural workplace setting. The data from such methods will provide a valuable detailed picture of employees’ experience of the work environment, their attitudes at work, and the individual and context factors that influence them (Tennen, Suls, & Affleck, 1991). Interpretation-based measures of attitudes such as sentence completion tasks and projective vignettes may be useful to access less conscious, implicit attitudes. These measures are effective in assessing complex social beliefs (such as perception of virtues) and motivational constructs (such as work happiness - engagement, satisfaction and commitment) (Uhlmann et al., 2012) that are part of the IO-OI model.

Organizations can collect meaningful performance outcomes for the department/unit/organization as a way to assess the usefulness of adopting the IO-OI model. Studies have shown that performance indicators such as employee turnover, organizational climate, financial performance, sales performance, client/customer satisfaction, psychological wellbeing, group performance, organizational citizenship behaviors and trust, are influenced by constructs within the IO-OI model and are of interest to organizations wanting to improve their effectiveness and performance (Avey, Luthans, Smith, & Palmer, 2010; Avey, Wernsing, & Luthans, 2008; Cameron et al., 2011; Youssef & Luthans, 2007). These measures could be taken prior to and after the interventions (e.g., training, mentoring, the use of specific positive practices) and could be analyzed via panel data analysis and latent growth modeling.

2.9 Conclusion

Gavin and Mason (2004) argue that “to achieve the good life people must work in good organizations” (p. 387). The current paper has suggested that a dual approach involving both outside-in interventions and inside-out interventions may be most effective in creating positive
institutions and flourishing individuals within them. Adopting a systems perspective, the IO-OI model outlines the interrelationships and processes through which inside-out and outside-in factors positively influence employee work happiness, and suggests three processes that may explain the interaction between outside-in and inside-out approaches. Further, the model proposes a number of feedback loops that enable upward spirals of positive development at the individual and organizational level, and support the model as a self-sustaining positive energy system embedded in a workplace context.

The IO-OI model integrates the fields of attitudes, positive organizational scholarship, and positive organizational behavior. Further, the model explains one way in which individual personal resources such as positive affect and core-self-evaluation interact with organizational social resources such as colleague support and supervisor feedback to create pathways for organizations to develop and sustain the wellbeing of its members. As such, the IO-OI model addresses the current imbalance in positive psychology that has focused more individual positive psychology interventions than a whole-of-system approach and on individual wellbeing applications than on workplace interventions. We hope that through the IO-OI model, workplace practitioners can further understand the importance of adopting both inside-out and outside-in approaches when fostering employee work happiness.
Chapter 3 Overview:

This chapter provides details of the overall study design and measures developed specifically for use in this research, including: 1) a measure of work happiness based on Fisher’s (2010) model; 2) a measure to capture the influence of the selective exposure process, 3) a measure to capture the influence of confirmation bias and, 4) an implicit measure of organizational virtuousness.
Chapter 3

Study Design & Measure Development

3.1 Introduction

The conceptual IO-OI model provides a theoretical framework through which the association between employee positive attitudes, their perceptions of positive organization culture and levels of wellbeing at work and their underlying processes can be examined and explored. An appropriate study design and measures must now be developed to test the propositions in the IO-OI model.

Trochim (1986) proposes that threats to validity can be minimized through ‘tailoring’ a research design to fit the specific research project whereby the design is developed to meet the requirements of the proposition put forward in the conceptual model. In adopting this approach, the research design comprised two phases: 1) a three-wave repeated measures correlation field study, (propositions 1, 2, 3, 4 of the IO-OI conceptual model, figure 1 Chapter 2) and, 2) a positive psychology intervention, (propositions 5 and 6 of the IO-OI conceptual model, figure 1 Chapter 2). Phase one of the study was completed before phase two was undertaken. The total data collection period was 17 months.

Creswell and Clark (2007) proposes that, “the use of quantitative and qualitative approaches in combination provides a better understanding of research problems that either approach alone” (p.5). Thus, for this thesis, a mixed-methods research design and method was adopted. Standardized quantitative instruments were used to measure psychological capital, perceptions of organizational virtuousness, wellbeing at work and some aspects of implicit attitudes. In addition, qualitative questions were analyzed to further explore selective exposure and confirmation bias through measures developed by the author. The research study design is shown in the figure below.
Repeated measures field study (baseline N=247)

Time 1
Measures
1. Psychological Capital
2. Work Happiness
3. Organizational Virtuousness (OV)

Time 2
Measures
1. Psychological Capital
2. Work Happiness
3. Organizational Virtuousness (OV)

Time 3
Measures
1. Psychological Capital
2. Work Happiness
3. Organizational Virtuousness (OV)

Figure 3.1. Design of the research study

3.2 Study 1: A longitudinal examination of the association between psychological capital, perception of organizational virtues and work happiness in school staff

The first study was a repeated measures observational design, which aimed to identify patterns of relationships between the constructs being examined to enable us to see what naturally occurs prior to any intervention efforts.

Cresswell (2003) proposes that a quantitative research approach is preferable, “if the problem is identifying factors that influence an outcome, the utility of an intervention, or understanding the best predictors of outcomes,” (p. 22). In line with this and given the purpose of this study, a quantitative study was designed using pre-established scales to measure individual levels of psychological capital (Luthans, Youssef & Avolio, 2007) the three elements comprising
Fisher’s (2010) model of work happiness (job satisfaction, Russell et al., 2004; affective commitment, Mowday et al., 1979; work engagement, Schaufeli et al., 2006) and employee perceptions of virtues in the organizational culture (Cameron, Bright, & Caza, 2004). A summary of the scales included in the correlation study is shown in Table 1 below.

**Table 3.1**

*Scales used in Study 1.*

<table>
<thead>
<tr>
<th>Construct</th>
<th>Name of Instrument</th>
<th>No. Items</th>
<th>Scale</th>
<th>Instrument source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Capital</td>
<td>Psychological Capital Questionnaire</td>
<td>24</td>
<td>1-6</td>
<td>Luthans et al., 2007</td>
</tr>
<tr>
<td>Organizational Virtuousness</td>
<td>Organizational Virtuousness Scale</td>
<td>15</td>
<td>1-6</td>
<td>Cameron et al., 2004</td>
</tr>
<tr>
<td>Happiness at work:</td>
<td>Job in General Index (abridged)</td>
<td>8</td>
<td>0-3</td>
<td>JDI Research Group, 2009</td>
</tr>
<tr>
<td>Satisfaction</td>
<td>Organizational Commitment Scale</td>
<td>9</td>
<td>1-5</td>
<td>Mowday et al., 1979</td>
</tr>
<tr>
<td>Happiness at work:</td>
<td>Utrecht Work Engagement Scale 9</td>
<td>9</td>
<td>0-6</td>
<td>Schaufeli et al., 2006</td>
</tr>
</tbody>
</table>

**Psychological Capital**

Psychological capital was measured through the 24-item Psychological Capital Questionnaire (PCQ), (Luthans, Avolio & Avey, 2007), which has been tested in samples from service, manufacturing, high-tech, military and education sectors and across cultural settings. The four factors (hope, optimism, resilience and self-efficacy), are measured by six items adapted from pre-existing scales (hope, Snyder et. al, 1996; optimism, Scheier & Carver, 1985; resilience, Wagnild & Young, 1993 and efficacy, Parker, 1998) with the resulting score providing an individual’s level of psychological capital. Example items are, hope: “There are lots of ways around any problem”; optimism: “When things are uncertain for me at work, I usually expect the best”; resilience: “I usually take stressful things at work in stride” and efficacy: “I feel confident presenting information to a group of colleagues”. Items are scored on a 6-point Likert scale from “strongly disagree” to “strongly agree”. A higher score represents a higher level of the associated factor. A ‘self-rater’ and
‘other-rater’ version of the PCQ is available. The self-rater version was used for the current research.

Luthans, Avolio, Avey & Norman, (2007) found Cronbach alphas for the four elements of overall PsyCap as follows: hope .88; resilience .89; self-efficacy .89 and optimism .89.

**Happiness at work**

Fisher (2010) proposes a three-element approach to measuring individual happiness at work: 1) engagement with the work itself; 2) satisfaction with the job, including contextual features such as pay, co-workers, supervision and environment, and 3) feelings of affective commitment to the organization as a whole. There is not a single measure of Fisher’s model of work happiness and so an existing validated measure was selected for each of the three elements, as follows:

**Engagement**

The Utrecht Work Engagement Scale-9 (UWES-9) was used to measure work engagement, which is defined as, “a persistent and pervasive affective cognitive state that is not focused on any particular object, event, individual or behavior” (Schaufeli & Bakkar, 2003). They suggest that engagement is characterized by vigor, dedication and absorption and it is these three factors that are measured by the UWES.

The UWES is available in 17, 15 and 9 item versions and has been tested across cultural and work settings. The 9-item version was selected for the current research in order to reduce total battery size and therefore minimize respondent burnout and drop out. Example items include, “At my job I feel strong and vigorous”; “I am proud of the work that I do” and “I am immersed in my work”. It is measured on a 7 point Likert scale ranging from ‘Never’ to ‘Always/Every day’ with higher scores representing higher levels of engagement.

All versions of the UWES show good internal consistency. The 15-item Scale was found to have Cronbach alpha scores greater than 0.8 for each of the three sub-scales across 15 studies (Schaufeli & Bakkar, 2003). The shorter 9-item Scale also showed acceptable levels of reliability in the same studies (n=9,679), with Cronbach scores of .84 (vigor); .89 (dedication) and .79 (absorption). (Schaufeli & Bakkar, 2003).
Satisfaction

The Job in General Scale (JIG) is a measure of overall satisfaction with the job. It asks respondents to “Think of your job in general. All in all, what is it like most of the time?” and then lists phrases and adjectives to which respondents to select, “yes”, “no” or “?” according on their level of agreement. Example items include, “good”, “better than most” and “poor”. The instrument consists of short phrases and adjectives to describes elements of the job and respondents are asked to select “yes”, if the phrase or adjective describes their current job situation, “no” if it does not or “?” if they cannot decide. A 0-3 scale is used to score the responses as follows: “yes” = 3; “no” = 0 and “?” = 1.

The Job Descriptive Index Office reports a Cronbach alpha of .92 for the JIG Scale (JDI Office, 2009).

Commitment

A 9-item version of the 15-item Organizational Commitment Scale (Mowday, Steers, & Porter, 1979) was used to measure “happiness at work: commitment”. The six negatively worded items of the full Scale were not included in order to manage total battery size. The 9-item positively phrased version of the Scale has been used by a number of authors (Naumann & Bennett, 2000; Waters, 2004; Waters & Dudgeon, 2010), with Choi (2008) finding a Cronbach alpha for the 9-item scale of .93.

Mowday et al. (1979) assert that commitment is separate from satisfaction and suggest that it comprises three related factors: 1.) belief in and acceptance of organizational goals; 2.) readiness to exert effort for the organization, and 3.) a strong desire to maintain organization membership. Example items include, “I am proud to tell others that I am part of this organization” and “I really care about the fate of this organization”. The scale is scored on a 7-point Likert scale from “strongly disagree” to “strongly agree”. Higher scores indicate a greater presence of that factor of commitment.

Organizational Virtuousness

Work by Cameron et al., (2004) resulted in a five factor model which suggests that
organizational virtuousness comprises: 1) organizational forgiveness, through which mistakes are quickly forgiven and used as opportunities for learning; 2) organizational trust, in the courtesy, consideration and respect enacted in the organization and the mutual trust between peers and leaders; 3) organizational integrity, demonstrated by the honesty, trustworthiness and honor that pervade the organization; 4) organizational optimism in the belief of organizational members that they will succeed in doing well and doing good even in the face of challenges; and 5) organizational compassion through the common acts of compassion and concern that show that people care about each other. It is this five-factor model and the resulting 15-item Organizational Virtuousness Scale was used for this study.

Example items include, “we are optimistic that we will succeed, even when faced with major challenges”; “people trust the leadership of this organization”; “this organization is characterized by many acts of caring and concern for other people”; “we try to learn from our mistakes here, consequently missteps are quickly forgiven”; and “this organization demonstrates the highest levels of integrity”. A 6-point Likert measurement scale is used, ranging from “strongly disagree” to “strongly agree” and higher scores indicate a greater perceived presence of that dimension of organizational virtuousness.

Cameron et al., (2004) reported the following Cronbach alpha’s for the scale: optimism .84, integrity .90, compassion .89, forgiveness .90 and trust .83.

The battery of questions for Study 1 is provided in Appendix A.

3.3 Study 2: Exploring Selective Exposure and Confirmation Bias as Processes Underlying Employee Work Happiness: An Intervention Study

Study 1 focused on understanding patterns of relationships that naturally occur. Building on that knowledge, phase 2 of the research (studies 2 and 3) focused on a positive psychology intervention (PPI). PPIs are defined as evidence-based intentional activities with the purpose of increasing pathways to or experiences of flourishing through the promotion of positive feelings, thoughts and behaviors (Sin & Lyubomirsky, 2009). The aim of PPIs can be to increase wellbeing,
decrease ill-being or both (Fredrickson & Kurtz, 2011; Pawelski, 2011), however there is still very little known about how PPIs work and the processes through which they influence wellbeing (Sin & Lyubomirsky, 2009).

The purpose of the PPI studies was: 1) to use an intervention to investigate the impact of developing one variable of interest – psychological capital – on the other variables under study and, 2) to explore underlying processes that may explain those relationships, specifically, the influence of selective exposure and confirmation bias, and attitude change. In doing so, phase 2 of the study makes a valuable contribution to the field of positive psychology by extending current understanding of PPIs in the workplace.

The PPI in studies 2 and 3 was a training-based intervention with the aim of increasing PsyCap. PsyCap has been shown to be state-like and open to development through the use of PsyCap Interventions, or PCIs (Luthans, Avey, Avolio, Norman & Combs, 2006; Luthans, Avey, Avolio & Petersen, 2010; Luthans, Avey & Patera, 2008). The PPI was part of an ongoing organization-wide training program at the research site. It comprised three consecutive days of approximately 6 hours training contact time in which training materials were delivered via a mix of lecture and small group activities (2-4 people) within ‘breakout groups’ of approximately 16. Each breakout group was facilitated by two trainers. The program was based upon materials developed by staff at the University of Pennsylvania’s Positive Psychology Center and drew from the relevant theories and research underpinning the four elements of PsyCap – hope, optimism, resilience and efficacy. Examples from the training included: 1) participants were taught how to dispute negative thinking patterns with more optimistic perspectives, to foster optimism and hope; 2), participants learned about the ABC Model of cognitive behavioral therapy and how to identify deeply held beliefs that may be driving unhelpful thought patterns and behaviors to build resilience; and 3) at the end of each topic, participants identified how they could use the skill or knowledge taught in their personal

1 Full details of the training intervention cannot be provided due to intellectual property restrictions.
and professional lives, to build efficacy.

Measures for studies 2 and 3 were selected to assess the impact of the PPI on psychological capital, perceptions of virtues in the organizational culture and work happiness and to examine the influence of the processes of selective exposure and confirmation bias, and attitude development. A summary of the measures used in study 2 are given in Table 2 below. The full question battery is provided in Appendix B.

Table 3.2
Scales used in Study 2.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Name of Instrument</th>
<th>No. Items</th>
<th>Scale</th>
<th>Instrument source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explicit Psychological Capital (PsyCap)</td>
<td>Psychological Capital Questionnaire</td>
<td>24</td>
<td>1-6</td>
<td>Luthans et al., 2007</td>
</tr>
<tr>
<td>Explicit Organizational Virtuousness (OV)</td>
<td>Organizational Virtuousness Scale</td>
<td>15</td>
<td>1-6</td>
<td>Cameron et al., 2004</td>
</tr>
<tr>
<td>Work Happiness</td>
<td>Refined Scale</td>
<td>22</td>
<td>0-1</td>
<td>Author (psychometric details provided)</td>
</tr>
<tr>
<td>Selective Exposure</td>
<td>Culture Rating</td>
<td>10</td>
<td>0-100</td>
<td>Author, guided by Clay, Barber &amp; Shook, 2013</td>
</tr>
<tr>
<td>Confirmation Bias</td>
<td>Sentence Stem</td>
<td>15</td>
<td>+/-</td>
<td>Author, based on Berman &amp; Miner, 1985</td>
</tr>
</tbody>
</table>

Psychological Capital, Work Happiness and Organizational Virtuousness

The same measures were used for psychological capital and perceptions of virtues in the organization (OV) as for the correlation study. However, based on model fit data from study 1, a refined measure of work happiness was developed for use in the two intervention studies. The psychometric details of this are given below.

3.3.1 Refining a measure of work happiness

Fisher’s (2010) model of workplace happiness includes three components: engagement with work, job satisfaction, and commitment to the organization. As no single measure of workplace
happiness according to this model was available, in Study 1, three existing measures were used to capture the three domains: the 9-item Utrecht Work Engagement Scale (UWES-9; Schaufeli & Bakkar, 2003), the 8-item Job in General Scale (JIG; Russell et al., 2004), and the 15-item Organizational Commitment Scale (Mowday et al., 1979). However model data fit was marginal and so a preliminary psychometric test of the Fisher’s model was conducted for studies 2 and 3.

We combined data from study 1 (n = 261) and studies 2 and 3 (n = 69) to create a psychometric dataset - the combined sample (N=330). Using SPSS software (version 23), the combined sample was randomly split into a training set and a test set using SPSS 23, specifying an approximate 50% split. Due to missing data, 172 participants were included in the training set and 158 were included in the test set.

Using the training set, an exploratory factor analysis (EFA) was first conducted. The Kaiser criterion (eigenvalues > 1) suggested 5 factors, whereas examination of the scree plot suggested 3 to 4 factors. We extracted 3, 4, and 5 factors. The three-factor structure provided the clearest structure, except for two of the job satisfaction items that cross loaded on multiple factors. In addition, inter-item reliability was examined, testing the change in reliability if any items were removed. Based on the combination of the EFA and reliability analyses, four items were removed: “enjoyable” and “excellent” for satisfaction, “I get carried away when I am working” for engagement, and “I would accept almost any type of job assignment in order to keep working for this organization” for commitment. This reduced the number of items in the battery to 22.

With the training, test, and combined sets, confirmatory models (CFA) were tested using the lavaan package (version .5.16, Rosseel, 2012) in R (version 3.0.3), with the items loading on their respective factors, and the factors loading on a higher order work happiness latent factor. Model fit was primarily examined using RMSEA (Root Mean Square Error of Approximation) and SRMR (Standardized Root Mean Residual Model). Values below .10 are considered acceptable; although an RMSEA below .06 combined with a SRMR below .09 are recommended (Hu & Bentler, 1999). The Tucker Lewis Index (TLI) and the Comparative Fit Index (CFI) are also reported for completeness.
Table 3 summarizes the items with standardized latent factor loadings and fit indices for the training, test, and combined sets. Across the three samples, reliability for the final work happiness variable is high ($\alpha_{\text{train}} = .93$, $\alpha_{\text{test}} = .92$, $\alpha_{\text{combined}} = .92$). Despite modifications, the model marginally fit the data. This provides some initial support for Fisher’s model, but also suggests that either measure refinements are needed to adequately measure the higher order construct, or that the overall theory may not be correct. Fully developing a work happiness measure was beyond the scope of the current study. As such, the 22-item scale was used as the measure of work happiness. However, the measurement error inherent to the measure should be kept in mind when interpreting the results.

Table 3.3
Latent factor loadings and fit indices in confirmatory factor analysis for the final 22-item scale, by sample.

<table>
<thead>
<tr>
<th>Factor/items</th>
<th>Latent Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Train</td>
</tr>
<tr>
<td><strong>Satisfaction</strong></td>
<td></td>
</tr>
<tr>
<td>Think of your job in general: what is it like most of the time?</td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>.61</td>
</tr>
<tr>
<td>Undesirable</td>
<td>-.84</td>
</tr>
<tr>
<td>Better than most</td>
<td>.56</td>
</tr>
<tr>
<td>Disagreeable</td>
<td>-.80</td>
</tr>
<tr>
<td>Makes me content</td>
<td>.66</td>
</tr>
<tr>
<td>Poor</td>
<td>-.80</td>
</tr>
<tr>
<td><strong>Engagement</strong></td>
<td></td>
</tr>
<tr>
<td>At my work I feel bursting with energy</td>
<td>.81</td>
</tr>
<tr>
<td>At my job I feel strong and vigorous</td>
<td>.86</td>
</tr>
<tr>
<td>I am enthusiastic about my job</td>
<td>.89</td>
</tr>
<tr>
<td>My job inspires me</td>
<td>.84</td>
</tr>
<tr>
<td>When I get up in the morning I feel like going to work</td>
<td>.82</td>
</tr>
<tr>
<td>I feel happy when I am working intensely</td>
<td>.81</td>
</tr>
<tr>
<td>I am proud of the work that I do</td>
<td>.77</td>
</tr>
<tr>
<td>I am immersed in my work</td>
<td>.76</td>
</tr>
<tr>
<td><strong>Commitment</strong></td>
<td></td>
</tr>
<tr>
<td>I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.</td>
<td>.71</td>
</tr>
</tbody>
</table>
I talk up this organization to my friends as a great organization to work for. .85 .76 .82
I find that my values and the organization’s values are very similar. .79 .80 .80
I am proud to tell others that I am part of this organization .89 .90 .89
This organization really inspires the very best in me in the way of job performance .86 .90 .88
I am extremely glad that I chose this organization to work for over others I was considering at the time I joined. .80 .84 .81
I really care about the fate of this organization. .88 .67 .79
For me this is the best of all possible organizations for which to work. .81 .75 .78

Work Happiness

<table>
<thead>
<tr>
<th></th>
<th>α = .93</th>
<th>α = .92</th>
<th>α = .92</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction</td>
<td>.77</td>
<td>.84</td>
<td>.79</td>
</tr>
<tr>
<td>Engagement</td>
<td>.63</td>
<td>.78</td>
<td>.69</td>
</tr>
<tr>
<td>Commitment</td>
<td>.74</td>
<td>.83</td>
<td>.78</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fit Indices</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>172</td>
<td>158</td>
<td>330</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.11</td>
<td>.11</td>
<td>.09</td>
</tr>
<tr>
<td>(90% confidence interval)</td>
<td>(.10, .12)</td>
<td>(.10, .12)</td>
<td>(.08, .10)</td>
</tr>
<tr>
<td>Standardized Root Mean Square Residual (SRMR)</td>
<td>.06</td>
<td>.07</td>
<td>.07</td>
</tr>
<tr>
<td>Comparative Fit Index (CFI)</td>
<td>.86</td>
<td>.85</td>
<td>.90</td>
</tr>
<tr>
<td>Tucker Lewis Index (TLI)</td>
<td>.84</td>
<td>.83</td>
<td>.88</td>
</tr>
</tbody>
</table>

Note. Confirmatory factor analyses were estimated using the lavaan package (version 0.5.16) in R (version 3.0.3), using Time 1 measurement occasions. RMSEA = Root Mean Square Error of Approximation, SRMR = Standardized Root Mean Residual, CFI = Comparative Fit Index, TLI = Tucker Lewis Index. For sample, Train = training sample, Test = testing sample, Combo = combined across these 2 samples.

### 3.3.2 Measures of selective exposure and confirmation Bias

Study 2 explored the processes of selective exposure and confirmation bias as underlying mechanisms for the associations between PsyCap, OV and work happiness. Standard instruments to assess the influence of these processes do not currently exist and so measures were developed for use in this study.

**Selective Exposure**

There are a variety of techniques for measuring selective exposure including retrospective reports, behavioral intentions, observation of behavior and aggregate measures of behavior over time (see Clay, Barber, & Shook, 2013 for a critical review). We were interested in examining whether a respondent’s positive/negative attitudes influenced the information they noticed,
remembered and recalled about the culture of the organization. A retrospective report technique was used in which participants were asked to reflect on their organization and rate how much they noticed a specific quality was present in the culture on a scale of 0 and 100 which could be thought of as percentage out of 100 (0 = not at all, 50 = sometimes/some areas, 100 = strongly evident). The specific qualities they were asked to rate included the five factors from the Organizational Virtuousness Scale (Cameron et al., 2004) and their opposite, (e.g., for the OV factor optimism, the opposite is pessimism). For the purpose of analysis, the ratings mean for the OV opposites (i.e., negative qualities) was deducted from the ratings mean for the OV factors (i.e., positive qualities) to give an overall positive-to-negative qualities rating for each time-point. The possible range of ratings was therefore -100 to 100, with a higher positive rating score indicating more positive qualities about the culture were noticed, remembered and recalled ($\alpha_{t1} = .85$, $\alpha_{t2} = .87$, $\alpha_{t3} = .89$).

**Confirmation bias.** Confirmation bias was measured through a sentence completion task that immediately followed the culture rating measure. Sentence completion tasks are a projective and deliberative form of attitude measure that involves the respondent completing a number of sentence stems (Vargas et al., 2004). Interpretation-based measures such as these examine the extent to which motives and worldviews are projected onto stimuli, thus giving an insight to individual attitudes. We considered confirmation bias to be present when the valence pattern matched (i.e., positive results in the culture rating measure led to more positive sentence tails in this measure).

Guided by extant literature (Berman & Miner, 1985; Stahl et al., 1985), 15 sentence stems relating to the host organization were developed (see Appendix 1). Examples include: ‘Organization X is…’; ‘At Organization X we are expected to…’ and, ‘The culture at Organization X …’. Two trained coders then rated each response (2,235 ratings each) as negative (0), neutral (1), or positive (2).  

Based upon guidelines by Bland and Altman (1999), Landis and Koch (1977), and Cicchetti (1994),

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2 An additional untrained coder rated all messages, but marginal distributions demonstrated that responses were biased and systematically different than the other two raters. We chose to use the two consistent trained coders.
there was substantial inter-rater agreement according to Cohen’s kappa (Cohen’s κ = .752), and there was excellent agreement according to the intraclass correlation (ICC) using a two-way mixed, consistency, average measure (ICC = .939, 95% confidence interval = .934, .944 (Hallgren, 2012). The average of the two ratings was used as the final confirmation bias score for each respondent.

3.4 Study 3: The Role and Process of Attitude Formation in Developing Employee Work Happiness: An Intervention Study

Building on the findings of study 1 (repeated measures field study) and study 2 (intervention 1) the next and final study of this PhD aimed to examine the process of attitude development in developing work happiness.

Measures for study 3 were selected to assess the changes in explicit and implicit attitudes of psychological capital (PsyCap) and organizational virtuousness (OV), and work happiness. The measures used in the study are shown in Table 3. The full question battery for Studies 2 and 3 is provided in Appendix B.

Table 3.4
Scales used in Study 3.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Name of Instrument</th>
<th>No. Items</th>
<th>Scale</th>
<th>Instrument source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explicit Psychological Capital (PsyCap)</td>
<td>Psychological Capital Questionnaire</td>
<td>24</td>
<td>1-6</td>
<td>Luthans et al., 2007</td>
</tr>
<tr>
<td>Explicit Organizational Virtuousness (OV)</td>
<td>Organizational Virtuousness Scale</td>
<td>15</td>
<td>1-6</td>
<td>Cameron et al., 2004</td>
</tr>
<tr>
<td>Work Happiness</td>
<td>Refined Scale</td>
<td>22</td>
<td>0-1</td>
<td>Author (psychometric details provided previously)</td>
</tr>
<tr>
<td>Implicit PsyCap</td>
<td>IPCQ</td>
<td>12</td>
<td>-3→3</td>
<td>Harms &amp; Luthans, 2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Author, based on Harms and Luthans, 2012 (psychometric details provided below)</td>
</tr>
<tr>
<td>Implicit OV</td>
<td>IOV</td>
<td>12</td>
<td>-3→3</td>
<td></td>
</tr>
</tbody>
</table>
Work happiness and explicit attitudes of PsyCap, and OV were measured using the same scales as Study 2. Implicit attitudes of PsyCap were measured using the implicit PsyCap (I-PCQ) scale (Harms & Luthans, 2012). There is not an existing measure of implicit attitudes of OV, and so with advice from Peter Harms (co-author of the I-PCQ) an implicit OV measure was developed by the author.

3.4.1 Measuring Implicit Attitudes

Different approaches have been taken in measuring implicit attitudes (e.g. Vargas et al., 2007). This study used the three-tier taxonomy proposed by Uhlmann et al., (2012) as a guiding framework in selecting and developing measures for the study. The taxonomy suggests that implicit attitude measures can be organized according to the specific implicit content that they are aiming to access. They are: 1) accessibility-based measures, such as word fragment completion tasks assess the extent to which a single concept is spontaneously activated in memory; 2) association-based measures determine whether several concepts are linked in memory as part of a cognitive schema and, 3) interpretation-based measures examine the extent to which motives and ‘world views’ are projected onto complex and ambiguous stimuli such as written vignettes or images, thus shaping respondents interpretations about them. It is suggested that these measures access deeper motives that cannot be reduced to the simpler cognitive structures measured in association and accessibility-based measures. Examples of interpretation-based measures include the Rorschach Ink-Blot Test (Rorschach, 1927) and the Miner Sentence Completion Scale (1965).

The aim of study 3 was to explore how changes in attitude may explain associations between PsyCap and OV in supporting development of work happiness. As such an interpretation based approach was considered most appropriate measurement approach to take. Two interpretation-based measures were used to access implicit attitudes; Implicit PsyCap (I-PCQ); Implicit Organizational Virtuousness (IOV).

3.4.1.1 Measuring implicit Psychological Capital

The Implicit Psychological Capital Questionnaire (I-PCQ, Harms & Luthans, 2012) uses a
semi-projective technique with written prompts followed by normal, short questions scored along a Likert scale. To elicit implicit attitudes related to PsyCap, respondents are presented with three situational prompts and asked to imagine stories relating to the prompt about a fictional character (not themselves); they are then asked to respond to construct-targeted questions about the stories they generated.

The three prompts are based in an organizational context with one presenting a positive experience (i.e., “Someone has a new job”), one a negative experience (i.e., “Someone makes a mistake at work”), and the third an ambiguous experience (i.e., “Someone talks to their supervisor”). Harms and Luthans (2012) propose that the ambiguous prompt is most open to interpretation and therefore similar to the Rorschasch Ink-Blot Test (Rorschach, 1927).

For each of the stories, the four factors of PsyCap are assessed as follows: efficacy, “Feeling confident and self-assured in their ability”; hope, “Believing that they can accomplish their goal,”; resiliency, “Believing that they can bounce back from any setbacks that have occurred,” and optimism, “Expecting good things to happen in the future.” Four items are included as fillers in each of the three prompts to help disguise the intent of the measure. These questions are answered using a 7-point scale (with anchors of –3 = the opposite is very true of this character, 0 = irrelevant thought/feeling for this character, and +3 = very true of this character). Averaging the 12 items (the four PsyCap questions across the three stories) determined an overall Implicit PsyCap score (αt1 = .88, αt2 = .93, αt3 = .91).

Harms and Luthans (2012) report strong validity for the I-PCQ including high internal reliability coefficient, acceptable convergent and discriminant validity with the established self-report PCQ-12. They also propose that it is, “a significant predictor of both positive and negative work outcomes and explains variance in these outcomes beyond the effects of the traditional self-report measure of PsyCap.” (p.592).
3.4.1.2 Developing a measure of Implicit Organizational Virtuousness

While there is an existing measure of implicit PsyCap (I-PCQ) attitudes, there is not an existing measure of implicit attitudes of organizational virtue (OV). We sought advice from Peter Harms (co-author of the I-PCQ) to construct an implicit OV (I-OV) measure. The resulting measure uses the situational prompts and framework of the I-PCQ, with participants rating each situational prompt for the five organizational virtues rather than the four PsyCap factors. As with the I-PCQ, participants indicated on a 7-point Likert scale how much each OV factor represents the character in the situation (-3 = the opposite is very true of this character, 0 = irrelevant thought/feeling for this character, and +3 = very true of this character). For each of the prompts, the five factors of OV were assessed by two items, which aligned with two of the three explicit OV scale items. Table 4 indicates the implicit OV items used for each prompt. Each time point thus had 6 items assessing each of the five domains. As indicated in Table 3, reliability for each domain was adequate. The resulting 10 items across the three prompts were averaged together to represent an individual’s implicit OV (30 items, $\alpha_{t1} = .96$, $\alpha_{t2} = .98$, $\alpha_{t3} = .97$).

Table 3. 5
Items from the Organizational Virtuousness Scale (Cameron, Bright, & Caza, 2004), with the implicit version used for the i-OV.

<table>
<thead>
<tr>
<th>OV element</th>
<th>Explicit OV items</th>
<th>Implicit OV items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optimism</strong></td>
<td>A sense of profound purpose is associated with what we do here</td>
<td>A sense of profound purpose is associated with what we do here</td>
</tr>
<tr>
<td></td>
<td>In this organization we are dedicated to doing good in addition to doing well</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>We are optimistic that we will succeed, even when faced with major challenges</td>
<td>We are optimistic that we will succeed, even when faced with major challenges</td>
</tr>
<tr>
<td><strong>Trust</strong></td>
<td>Employees trust one another in this organization</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>People are treated with courtesy, consideration, and respect in this organization</td>
<td>People are treated with courtesy, consideration, and respect in this organization</td>
</tr>
<tr>
<td>OV element</td>
<td>Explicit OV items</td>
<td>Implicit OV items</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>People trust the leadership of this organization</td>
<td>People trust the leadership of this organization</td>
<td>People trust the leadership of this organization</td>
</tr>
<tr>
<td>Acts of compassion are common here</td>
<td>Acts of compassion are common here</td>
<td>Acts of compassion are common here</td>
</tr>
<tr>
<td>This organization is characterized by many acts of caring and concern for other people</td>
<td>This organization is characterized by many acts of caring and concern for other people</td>
<td>This organization is characterized by many acts of caring and concern for other people</td>
</tr>
<tr>
<td>Many stories of compassion and concern circulate among organization members</td>
<td>Many stories of compassion and concern circulate among organization members</td>
<td>Many stories of compassion and concern circulate among organization members</td>
</tr>
<tr>
<td>Honesty and trustworthiness are hallmarks of this organization</td>
<td>Honesty and trustworthiness are hallmarks of this organization</td>
<td>Honesty and trustworthiness are hallmarks of this organization</td>
</tr>
<tr>
<td>This organization demonstrates the highest levels of integrity</td>
<td>This organization demonstrates the highest levels of integrity</td>
<td>This organization demonstrates the highest levels of integrity</td>
</tr>
<tr>
<td>This organization would be described as virtuous and honorable</td>
<td>This organization would be described as virtuous and honorable</td>
<td>This organization would be described as virtuous and honorable</td>
</tr>
<tr>
<td>We try to learn from our mistakes here, consequently missteps are quickly forgiven</td>
<td>We try to learn from our mistakes here, consequently missteps are quickly forgiven</td>
<td>We try to learn from our mistakes here, consequently missteps are quickly forgiven</td>
</tr>
<tr>
<td>This is a forgiving compassionate organization in which to work</td>
<td>This is a forgiving compassionate organization in which to work</td>
<td>This is a forgiving compassionate organization in which to work</td>
</tr>
<tr>
<td>We have very high standards of performance, yet we forgive mistakes when they are acknowledged and corrected</td>
<td>We have very high standards of performance, yet we forgive mistakes when they are acknowledged and corrected</td>
<td>We have very high standards of performance, yet we forgive mistakes when they are acknowledged and corrected</td>
</tr>
<tr>
<td>Table 3.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reliability (Cronbach’s a) for the five OV factors, for each time point.</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OV element</th>
<th>Time 1 (n = 55)</th>
<th>Time 2 (n = 55)</th>
<th>Time 3 (n = 43)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimism</td>
<td>0.83</td>
<td>0.91</td>
<td>0.9</td>
</tr>
<tr>
<td>Trust</td>
<td>0.83</td>
<td>0.9</td>
<td>0.88</td>
</tr>
<tr>
<td>Compassion</td>
<td>0.85</td>
<td>0.91</td>
<td>0.87</td>
</tr>
<tr>
<td>Integrity</td>
<td>0.87</td>
<td>0.9</td>
<td>0.91</td>
</tr>
<tr>
<td>Forgiveness</td>
<td>0.81</td>
<td>0.92</td>
<td>0.87</td>
</tr>
</tbody>
</table>
Chapter 4 Overview:

With the foundation of the conceptual IO-OI model, study design and measures in place, the next three chapters detail the three studies of this thesis. This chapter (published in Psychology of Wellbeing) provides details of a longitudinal study that examines the association between variables within the IO-OI model: psychological capital (positive attitudes, inside-out factor), organizational virtues (positive culture, outside-in factor), and work happiness in staff at an independent K-12 school in Victoria, Australia over a 15-month timespan (baseline N= 247). Results indicate a small synergetic effect between inside-out and outside-in factors, which suggests that while leaders might target psychological capital in employees or target the organization’s culture, further benefit may arise by using both inside-out and outside-in strategies.
Chapter 4

Study 1:

A longitudinal examination of the association between psychological capital, perception of organizational virtues and work happiness in school staff


Abstract

Developing employee wellbeing has recently been recognized as an important way to improve organizational performance. Sloan’s (1987) dual-intervention approach suggests that employee wellbeing can be developed bottom-up, by improving employee psychological wellbeing, or top-down by changing the organization. This longitudinal study explores the association between psychological capital (bottom-up factors), organizational virtues (top-down factors), and work happiness in staff at an independent K-12 school in Victoria, Australia over a 15-month timespan (baseline N=247). Within and across time, both employee psychological capital and perception of virtues present in the organization independently related to greater work happiness. PsyCap and OV strongly correlated with work happiness, with a simplex structure i.e., variables closer in time were more strongly correlated, with correlation strength declining over time. Further, there was some evidence of a small of a synergistic effect, suggesting that while leaders might target psychological capital in employees or target the organization’s culture, further benefit may arise by using both top-down and bottom-up strategies. These findings can be used to help schools and other organizations build employee work happiness.
4.1 Introduction

A major source of strategic capital in today’s information and knowledge-driven society is people (Lorange, 2005). Certainly, the nature of business has shifted from a concentration on financial capital to a concentration on human capital (Bartlett & Ghoshal, 2002), suggesting that an organization’s people are critical to its innovation, performance and competitiveness. As such, employee wellbeing has gained recognition as an important outcome that organizations need to foster if they are to make best use of the capacity of their human capital and perform well.

Increasing evidence from the field of positive psychology suggests that optimal levels of wellbeing influence positive outcomes for employees and organizations. Wellbeing in employees has been related to their levels of engagement (Harter, Schmidt & Keyes, 2003), organizational citizenship behaviors (LePine, Erex & Jonson, 2002) and overall career success (Boehm & Lyubomirsky, 2008). For organizations, employee wellbeing is linked with customer satisfaction, (Giardini & Frese, 2008) productivity, presenteeism, and effort at work (Keyes, 2005); lower voluntary turnover (Wright & Bonett, 2007) and fewer absenteeism /sick days (Keyes, 2005). Organizations who develop employee wellbeing receive a positive return on investment through reduced absenteeism and compensation claims (Price Waterhouse Coopers, 2014). As such, it is in the interest of organizations to intentionally develop employee wellbeing.

Happiness and wellbeing at work has been defined in a number of ways. Definitions include: the presence of positive experiences and absence of negative experiences (Cotton & Hart, 2003); workplace affect and job satisfaction (Page & Vella-Brodrick, 2009) and more broadly as a positive state of mind arising from one’s experiences at work (Page, 2005). Fisher (2010) proposes that happiness at work should be treated as a multidimensional concept, and argues that measures of work happiness such as job satisfaction (Locke, 1976), positive affect (Fisher, 1997) and thriving and vigor (Spreitzer & Sonenshein, 2004) are too narrow. She proposes a higher-order approach to conceptualizing ‘work happiness’ and suggests it is the combination of three aspects: (a)
engagement with the work itself; (b) satisfaction with the job and, (c) feelings of affective commitment to the organization as a whole. This multi-dimensional model of work happiness parallels recent developments in wellbeing theory to multi-dimensional frameworks (e.g. Huppert & So, 2013; Seligman, 2011).

Each of the individual elements of Fisher’s (2010) model of work happiness has a conceptual and theoretical evidence base. Work engagement is defined as comprising cognitive, affective and behavioral elements in relation to an individual’s performance of their job role (Schaufeli & Bakker, 2003). Engaged employees have influence over events in their lives through their energy and self-efficacy (Bakker & Demerouti, 2008), they create their own positive feedback through their positive attitude and activity level, and consider work to be fun (Gorgievski, Bakker, & Schaufeli, 2010). Job satisfaction is defined as “an evaluative state that expresses contentment with, and positive feelings about one’s job” (Judge & Kammeyer-Mueller, 2012, p.347). This suggests that it includes both cognition (contentment) and affect (positive feelings), and that overall job satisfaction is the result of a process of evaluation of individual job facets or characteristics. Evidence suggests that high levels of job satisfaction relate to job performance (Judge, Thoresen, Bono, & Patton, 2001), and psychological and physical health (Faragher, Cass, & Cooper, 2005). Affective organizational commitment is an organization member’s emotional attachment to, identification with and involvement in the organization (Meyer & Allen, 1984, 1990). Employees with high levels of affective commitment have been found to have higher job performance and organizational citizenship behaviors, and lower absenteeism and intentions to quit (Meyer, Stanley, Hersovitch & Topolnitsky, 2002).

By presenting work happiness as a higher-order construct that comprises the unique and shared variance of these three factors, Fisher suggests that workplace leaders can move beyond boosting each of the variables individually and capitalize on the synergistic effects that occur when the three variables interact. This also allows for more sustainable ways to promote work happiness because if an employee is low on one aspect of work happiness (e.g., engagement) but has high
levels of the other elements (e.g., satisfaction and commitment) they can still achieve happiness at work.

To date, Fisher’s higher-order conceptualization of work happiness has not been tested empirically; thus one purpose of this study is to provide an initial test of the model. This is needed because Fisher’s model has practical implications for how leaders increase the work happiness of their staff. The traditional approach to increasing happiness has been for researchers and leaders to create change in a raft of the antecedents that have been previously shown to influence engagement, satisfaction and commitment respectively. For example, evidence suggests that numerous factors relate to greater work engagement, such as relationships with colleagues, performance feedback, skill variety, autonomy, learning opportunities, resilience, personal attachment, and supervisor and co-worker support (e.g., Albrecht, 2010; Armutlulu & Noyan, 2011; Bakker & Demerouti, 2008; Hackman & Oldham, 1976; Hobfoll, Johnson, Ennis & Jackson, 2003; Judge, Piccolo & Illies, 2004; Morrow, 2011). Such research has provided leaders with a large ‘shopping list’, and it is not surprising that leaders may feel confused by what to do or feel that their approaches are overly complex. For example, how do leaders decide whether to change job characteristics or improve employee attachment or be more considerate themselves as leaders? Instead, by using a higher-order approach to work happiness, leaders can adopt a more parsimonious approach to creating the conditions for employee work happiness.

In this study, we propose that Sloan’s (1987) dual-intervention approach can be used to foster work happiness. Sloane (1987) suggests that organizational-level factors such as culture may influence participation in and outcomes of workplace health promotion programs and also proposes that individual-level interventions are required. That is, both top-down, organizational factors and bottom-up individual-level factors matter. The current study examines the naturally occurring relationships between the top-down variable of employee perception of organizational virtue and the bottom-up variable of employee psychological capital on work happiness over time.

Psychological capital (PsyCap) is a higher-order factor that comprises an employee’s
levels of self-efficacy, optimism, hope and resilience (Luthans, Youssef, and Avolio, 2006).

Heralding from the field of positive organizational behavior, PsyCap is defined as:

“an individual’s positive psychological state of development characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success” (Luthans, Youssef & Avolio, 2007, p. 3).

PsyCap has been empirically linked to a number of desirable employee outcomes including: improved performance in the workplace (Avey et al., 2011; Newman, et al., 2014; Luthans et al., 2015), lower employee absenteeism (Avey, Patera & West, 2006), higher job satisfaction, (Luthans et al., 2007), organizational commitment (Luthans & Jensen, 2005) and psychological wellbeing (Avey, Luthans, Smith & Palmer, 2010). However, the relationship between PsyCap and Fisher’s (2010) work happiness has not been tested.

In addition to this individual-level factor, Sloan (1987) advocates that leaders must look at organizational-level factors that may influence workplace health. The current study thus examines the influence of work environment; specifically, the presence of virtues, on employee happiness at work. Virtues are positive traits representing the best of the human condition such as hope, optimism, kindness and curiosity, which have been shown to be valued across time and culture (Peterson & Seligman, 2004). Park and Peterson (2003) suggest that counterparts are present at the organizational-level that embody the moral characteristics of the organization and are an enduring part of its culture.

Within the field of positive organizational scholarship, Cameron (2003) proposes that virtuousness in an organization is operationalized via the behaviors of individuals and through workplace processes and practices. Research by Cameron, Bright and Caza (2004) suggested that organizational virtuousness (OV) is a higher-order construct that comprises five virtues: (a) organizational forgiveness, through which mistakes are quickly forgiven and used as opportunities
for learning; (b) organizational trust, in the courtesy, consideration and respect enacted in the organization and the mutual trust between peers and leaders; (c) organizational integrity, demonstrated by the honesty, trustworthiness and honor that pervade the organization; (d) organizational optimism, in the belief of organizational members that they will succeed in doing well even in the face of challenges; and (e) organizational compassion, through the common acts of compassion and concern that show that people care about each other. Thus, a workplace that embodies OV demonstrates values such as forgiveness, trust, integrity, optimism and compassion both in the behavior of individual employees and through the processes and practices in the workplace. Research across multiple industries has found that the presence of organizational virtuousness correlates with greater improvement in indicators such as profitability, quality, productivity, customer satisfaction and employee retention (Cameron, Bright & Caza, 2004). However, the relationship between organizational virtuousness (OV) and Fisher’s (2010) higher order factor of work happiness has not been tested.

The current research examines relationships between employee PsyCap, perception of OV and work happiness in school staff. There has been growing interest in the study of wellbeing in schools in recent years as interventions from positive psychology have been applied and tested in school environments in what has become known as Positive Education (e.g. Seligman, Ernst, Gillham, Reivich & Linkins, 2009; Norrish, Williams, O’Connor & Robinson, 2013; Waters, 2011; Kern, Waters, Adler & White, 2014a). The focus of this work however, has mainly been on improving student wellbeing and associated outcomes. Yet staff are equally important to creating wellbeing in a school environment. Indeed, Rowe (2007) proposes that teachers are the most valuable resource available to a school. Barber and Mourshed (2007) argue that, “the quality of a school system rests on the quality of its teachers” (p. 14). A significant body of research indicates that other than the student themselves, teachers are the most important influence on student learning (Hattie, 2003; Rowe, 2003). Beyond the value of teaching staff, others at the school in non-teaching roles can also be beneficial role models for students and help to create and support a positive school environment.
Answering recent calls for longitudinal studies of PsyCap (Dawkins, et al., 2013) and for greater integration between positive organizational behavior and positive organizational scholarship (Youssef & Luthans, 2011), the current study examines the influence of employee PsyCap and perception of OV on work happiness. First, we provide the first empirical test of Fisher’s work happiness model. Second, we explore the independent and combined influence of top-down and bottom-up influences on work happiness over a 15-month period. In an applied context, this research will help practitioners further understand the impact of developing employee wellbeing through a focus on higher level constructs, and considers whether bottom-up individual-level, top-down organization level, or combined top-down, bottom-up approaches have the greatest impact on employee work happiness. We test the following hypotheses:

- **H$_1$**: Employee PsyCap will be positively correlated with perception of virtue in the organization, such that higher levels of PsyCap contribute to seeing more virtue in the organization, and greater virtue in the organization contributes to individual-level PsyCap.

- **H$_2$**: Employee PsyCap and perception of virtue in the organization will be independently correlated with greater employee work happiness, both cross-sectionally and prospectively.

- **H$_3$**: PsyCap and perception of virtue in the organization will have a synergistic effect, such that together they relate to greater employee work happiness, over and above either constructs alone.

### 4.2. Method

#### 4.2.1 Procedure

A three-wave repeated measures correlation study was used to analyze the pattern of relationships between employee PsyCap, OV and work happiness. Employees from a large independent school in Victoria, Australia were recruited for the study through a letter and/or email from the researcher, inviting their voluntary participation to complete an online questionnaire. Individuals were included if they were employed at least 8 hours per week at the school, to ensure at
least a minimum level of engagement with the school. The survey was repeated at three time-points, with approximately six months between each one (August 2011, March 2012, November 2012). The surveys were anonymous. Before completing the survey at time 1, participants created a unique user name which they used to complete the surveys again at times 2 and 3. The participants used this unique and anonymous user-name when they completed the surveys again at time 2 and time 3. This ensured anonymity whilst enabling the marrying of results between the three measurement occasions.

The survey was made available to all employees online via the independent survey hosting website Survey Monkey (www.surveymonkey.com.au). A link to the survey with information about the research was sent to all employees via the organization’s email system. In order to ensure accessibility to the survey for staff groups without computer access, a paper version of the survey was also available by request from the researcher. Paper-based responses were entered into Survey Monkey manually by the researcher; this comprised a total of 11 surveys across the three measurement time-points. Regular reminders, via email and verbal announcements at daily staff meetings, were made by the researcher throughout that time to encourage participation. The overall response rate was 75% at time 1, 50% at time 2, and 61% at time 3.

4.2.2 Participants

Four hundred, thirty-two employees completed the surveys at one or more time points. Of these, 239 were members of teaching staff (60% female, 40% male) and 175 were employed in non-teaching roles (64% female, 36% male). The demographic data for samples at time-points 1, 2 and 3 are shown in Table 1.

Sample bias analysis was conducted for the three time-point samples for levels of PsyCap, OV, and work happiness. Comparisons were made between those responding at time 1 only, at time 1 and 2, at time 1 and 3, and at all three time points using a one-way analysis of variance (ANOVA). There were no significant differences amongst these samples, suggesting that those employees who stayed in the study through time 2 and time 3 were not significantly different in levels of PsyCap, OV,
or work happiness measures compared to those employees who did not contribute to the study past time 1. For the categorical demographic variables of gender, age and role type (teaching or non-teaching), the relationship between time group and the demographic variable were examined using Pearson’s chi-square test. Large p-values across all the tests provided no evidence of response bias (gender: \( p = .45 \), role type: \( p = .38 \), age: \( p = .73 \)).

### Table 4.1

**Demographic data for the samples at each time-point.**

<table>
<thead>
<tr>
<th>Sample</th>
<th>Age</th>
<th>Gender</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td><strong>Time 1</strong></td>
<td>18-25yrs</td>
<td>2.43%</td>
<td>60%</td>
</tr>
<tr>
<td>(n= 247)</td>
<td>25-34yrs</td>
<td>18.62%</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>35-44yrs</td>
<td>23.89%</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td>45-54yrs</td>
<td>30.77%</td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>55-64yrs</td>
<td>23.08%</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td>65yrs +</td>
<td>0.81%</td>
<td>55%</td>
</tr>
<tr>
<td><strong>Time 2</strong></td>
<td>18-25yrs</td>
<td>3.64%</td>
<td>65%</td>
</tr>
<tr>
<td>(n= 165)</td>
<td>25-34yrs</td>
<td>17.58%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>35-44yrs</td>
<td>23.03%</td>
<td>65%</td>
</tr>
<tr>
<td></td>
<td>45-54yrs</td>
<td>35.15%</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td>55-64yrs</td>
<td>19.39%</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>65yrs +</td>
<td>1.21%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Time 3</strong></td>
<td>18-25yrs</td>
<td>3.02%</td>
<td>56%</td>
</tr>
<tr>
<td>(n= 199)</td>
<td>25-34yrs</td>
<td>17.09%</td>
<td>70%</td>
</tr>
<tr>
<td></td>
<td>35-44yrs</td>
<td>26.3%</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>45-54yrs</td>
<td>27.64%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>55-64yrs</td>
<td>22.61%</td>
<td>115%</td>
</tr>
<tr>
<td></td>
<td>65yrs +</td>
<td>3.02%</td>
<td>120%</td>
</tr>
</tbody>
</table>

*Note: A total of 18 participants did not provide demographic data across the three time points.*

#### 4.2.3 Materials

The survey was developed by selecting pre-established scales to measure individual-levels of PsyCap (Luthans, Youssef & Avolio, 2007), perception of virtues in the organization (organizational virtuousness, OV, Cameron et al., 2004) and work happiness (Fisher, 2010).

**PsyCap.** PsyCap was measured through the 24-item self-rated PsyCap Questionnaire (PCQ),
(Luthans, Avolio and Avey, 2007), which has been tested in samples from service, manufacturing, high-tech, military and education sectors and across cultural settings. The four factors (self-efficacy, optimism, hope and resilience) are measured by six items adapted from pre-existing scales (hope: Snyder et al., 1996; optimism: Scheier & Carver, 1985; resilience: Wagnild & Young, 1993, and efficacy: Parker, 1998) with the resulting score providing an individual’s level of PsyCap. Example items include, “There are lots of ways around any problem”; “When things are uncertain for me at work, I usually expect the best”; “I usually take stressful things at work in stride”; and “I feel confident presenting information to a group of colleagues”. Items were scored on a 6-point Likert scale from “strongly disagree” (1) to “strongly agree” (6), and were averaged together to represent the individual’s level of PsyCap (24 items, Cronbach’s α$_{t1}$ = .94, α$_{t2}$ = .94, α$_{t3}$ = .92).

**Organizational Virtuousness (OV).** OV was measured using 15-item Organizational Virtuousness Scale (Cameron, Bright & Caza, 2004), which comprises five factors: organizational 1) forgiveness, 2) trust, 3) integrity, 4) optimism, and 5) compassion. Example items include, “we are optimistic that we will succeed, even when faced with major challenges”; “people trust the leadership of this organization”; “this organization is characterized by many acts of caring and concern for other people”; “we try to learn from our mistakes here, consequently missteps are quickly forgiven”; and “this organization demonstrates the highest levels of integrity”. Items were scored on a 6-point Likert measurement scale from “strongly disagree” (1) to “strongly agree” (6) and higher scores indicate a greater perceived presence of that dimension of OV. Reliability for the overall scale was high across the three time points (15 items, α$_{t1}$ = .97, α$_{t2}$ = .97, α$_{t3}$ = .97).

**Work happiness.** Work happiness, according to Fisher (2010), is comprised of: 1) engagement with the work itself; 2) satisfaction with the job, including contextual features such as pay, co-workers, supervision and environment, and 3) feelings of affective commitment to the organization as a whole. A composite measure of work happiness does not exist; thus existing validated measures were selected for the three elements.

**Satisfaction.** The Job in General Scale (JIG) (Russell et al., 2004) is a measure of overall
satisfaction with a job. It asks respondents to “Think of your job in general. All in all, what is it like most of the time?” and lists phrases and adjectives to which respondents to select “yes, like this”, if the phrase or adjective describes their current job situation, “no, not like this” if it does not or “unsure” if they cannot decide. Example items include, “good”, “better than most” and “poor”. Responses were scaled such that 0 = no, .5 = unsure, and 1 = yes (8 items, $\alpha_{t1} = .82$, $\alpha_{t2} = .84$, $\alpha_{t3} = .83$).

**Engagement.** The Utrecht Work Engagement Scale-9 (UWES-9) was used to measure work engagement. The UWES is available in 9, 15, and 17-item versions and has been tested across cultural and work settings. The 9-item version was selected in order to reduce total battery size and minimize respondent burnout and drop out, and has shown acceptable levels of reliability in past research (Schaufeli and Bakkar, 2003). Example items include, “At my job I feel strong and vigorous”; “I am proud of the work that I do” and “I am immersed in my work”. It is measured on a 7-point Likert scale ranging from ‘Never’ to ‘Always/Every day’ with higher scores representing higher levels of engagement ($\alpha_{t1} = .92$, $\alpha_{t2} = .93$, $\alpha_{t3} = .93$).

**Commitment.** A 9-item version of the 15-item Organizational Commitment Scale (Mowday, Steers & Porter, 1979) was used in order to manage total battery size. The 9-item version of the scale has been used by a number of authors (Naumann & Bennett, 2000; Waters, 2004; Joslin, Waters & Dudgeon, 2010). Example items include, “I am proud to tell others that I am part of this organization” and “I really care about the fate of this organization”. The scale is scored on a 7-point Likert scale from “strongly disagree” to “strongly agree”, and higher scores indicate a greater presence of commitment ($\alpha_{t1} = .92$, $\alpha_{t2} = .93$, $\alpha_{t3} = .93$).

**4.2.4 Data Analysis**

Analyzes first tested Fisher’s (2010) model of workplace happiness, using confirmatory factor analysis (CFA). A higher order factor model was tested, in which work happiness was comprised of three latent factors (job satisfaction, work engagement, and organizational commitment), which in turn included the observed items (job satisfaction: 8 items, engagement: 9 items, commitment: 9 items).
To address the main hypotheses, descriptive statistics and correlations between study variables were computed. Two path models were estimated, in which work happiness at times 2 and 3 were regressed on time 1 PsyCap, OV, and work happiness (WH). Model 1 tested a serial model in which time 1 PsyCap, OV, and WH predict time 2 WH, which in turn predicts time 3 WH. Model 2 adds direct effects from time 1 PsyCap, OV, and WH predicting time 3 WH (see Figure 2).

Finally, to examine whether there was a synergistic effect between PsyCap and OV, five groups were created based on tertile splits on PsyCap and OV: PC+OV high (above 67% in both constructs); PC high (above 67% in PsyCap); OV high (above 67% in perception of OV); PC+OV low (below 33% in both constructs); other (all other combinations). A one-way ANOVA compared the mean scores of work happiness at each time point across these five groups.

In cases where the distributions and patterns in the residuals from the regression models indicated that the assumptions underlying the model were not met, bootstrapping was used. The bootstrap regression results, with bias corrected accelerated confidence intervals, are reported. The number of cases available for analysis varied across time-points; complete available cases were used for analysis. Descriptive, correlation, and ANOVA analyzes were conducted using SPSS (version 22.0) software; CFA and path analysis were conducted using the lavaan package (version 0.5-18; Rosseel, 2012) in R (version 3.1.1). Model fit was evaluated using the root mean square error of approximation (RMSEA), the standardized root mean square residual (SRMR), the comparative fit index (CFI), and the Tucker Lewis Index (TLI). For RMSEA and SRMR, values below .08 are considered good fit; for CFI and TLI, values above .90 are good fit (Hu and Bentler, 1999).

4.3 Results

4.3.1 Testing of Fisher’s (2010) model of work happiness

Analyze first tested Fisher’s (2010) model of work happiness. Table 2 shows the items with standardized latent factor loadings and fit indices for the three time-points. Across all three time points the model marginally fit the data. This provides some initial support for Fisher’s model, but also suggests that refinements are needed to adequately measure the higher
order construct. A closer look at the factor loadings indicate that questionable items were “better than most” and “excellent” for satisfaction, “I get carried away when I am working” for engagement,

### Table 4.2

Factors and items for Fisher’s theoretical model of work happiness with standardized latent factor loadings

<table>
<thead>
<tr>
<th>Scale and items</th>
<th>Time1</th>
<th>Time2</th>
<th>Time3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Satisfaction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Think of your job in general: what is it like most of the time?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>.66</td>
<td>.81</td>
<td>.73</td>
</tr>
<tr>
<td>Undesirable</td>
<td>-.75</td>
<td>-.72</td>
<td>-.77</td>
</tr>
<tr>
<td>Better than most</td>
<td>.57</td>
<td>.44</td>
<td>.47</td>
</tr>
<tr>
<td>Disagreeable</td>
<td>-.71</td>
<td>-.62</td>
<td>-.59</td>
</tr>
<tr>
<td>Makes me content</td>
<td>.73</td>
<td>.75</td>
<td>.66</td>
</tr>
<tr>
<td>Excellent</td>
<td>.57</td>
<td>.54</td>
<td>.53</td>
</tr>
<tr>
<td>Enjoyable</td>
<td>.71</td>
<td>.86</td>
<td>.66</td>
</tr>
<tr>
<td>Poor</td>
<td>-.73</td>
<td>-.73</td>
<td>-.77</td>
</tr>
<tr>
<td><strong>Engagement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At my work I feel bursting with energy</td>
<td>.79</td>
<td>.73</td>
<td>.70</td>
</tr>
<tr>
<td>At my job I feel strong and vigorous</td>
<td>.85</td>
<td>.81</td>
<td>.78</td>
</tr>
<tr>
<td>I am enthusiastic about my job</td>
<td>.88</td>
<td>.92</td>
<td>.93</td>
</tr>
<tr>
<td>My job inspires me</td>
<td>.86</td>
<td>.92</td>
<td>.87</td>
</tr>
<tr>
<td>When I get up in the morning I feel like going to work</td>
<td>.79</td>
<td>.87</td>
<td>.80</td>
</tr>
<tr>
<td>I feel happy when I am working intensely</td>
<td>.73</td>
<td>.74</td>
<td>.65</td>
</tr>
<tr>
<td>I am proud of the work that I do</td>
<td>.70</td>
<td>.80</td>
<td>.81</td>
</tr>
<tr>
<td>I am immersed in my work</td>
<td>.73</td>
<td>.72</td>
<td>.82</td>
</tr>
<tr>
<td>I get carried away when I am working</td>
<td>.54</td>
<td>.49</td>
<td>.56</td>
</tr>
<tr>
<td><strong>Commitment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.</td>
<td>.63</td>
<td>.72</td>
<td>.72</td>
</tr>
<tr>
<td>I talk up this organization to my friends as a great organization to work for.</td>
<td>.82</td>
<td>.89</td>
<td>.89</td>
</tr>
<tr>
<td>I would accept almost any type of job assignment in order to keep working for this organization.</td>
<td>.54</td>
<td>.54</td>
<td>.49</td>
</tr>
<tr>
<td>I find that my values and the organization’s values are very similar.</td>
<td>.77</td>
<td>.80</td>
<td>.83</td>
</tr>
<tr>
<td>I am proud to tell others that I am part of this organization</td>
<td>.87</td>
<td>.88</td>
<td>.89</td>
</tr>
<tr>
<td>This organization really inspires the very best in me in the way of job performance</td>
<td>.88</td>
<td>.83</td>
<td>.87</td>
</tr>
</tbody>
</table>
I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.
I really care about the fate of this organization.
For me this is the best of all possible organizations for which to work.

<table>
<thead>
<tr>
<th>Higher Order Factor</th>
<th>Satisfaction</th>
<th>Engagement</th>
<th>Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.84</td>
<td>.85</td>
<td>.84</td>
</tr>
<tr>
<td></td>
<td>.85</td>
<td>.85</td>
<td>.89</td>
</tr>
<tr>
<td></td>
<td>.76</td>
<td>.79</td>
<td>.70</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fit Indices</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>260</td>
<td>178</td>
<td>207</td>
</tr>
<tr>
<td>RMSEA (90% confidence interval)</td>
<td>(.10, .10)</td>
<td>(.12, .13)</td>
<td>(.11, .12)</td>
</tr>
<tr>
<td>Standardized Root Mean Square Residual (SRMR)</td>
<td>.064</td>
<td>.09</td>
<td>.07</td>
</tr>
<tr>
<td>Comparative Fit Index (CFI)</td>
<td>.85</td>
<td>.81</td>
<td>.82</td>
</tr>
<tr>
<td>Tucker Lewis Index (TLI)</td>
<td>.84</td>
<td>.79</td>
<td>.80</td>
</tr>
</tbody>
</table>

Note. Latent model estimated in R using the lavaan package (Rosseel, 2012).

and “I would accept almost any type of job assignment in order to keep working for this organization” for commitment. However, removing these items did not improve model fit. As developing a measure of work happiness is beyond the scope of the current study, we proceeded with these items as our measure of work happiness, but the measurement error inherent to the measure should be kept in mind in interpreting the results. Items were combined into the three first order factors, and then the three first order factors were standardized and averaged to create single work happiness variables (α_t1 = .92, α_t2 = 94, α_t3 = 94).

4.3.2 Associations among psychological capital (PsyCap), organizational virtuousness (OV) and work happiness

Table 3 shows the means, standard deviations and correlations amongst PsyCap, OV, and work happiness within and across the three-measurement time-points. As predicted, PsyCap and OV were strongly positively correlated with one another, both cross-sectionally and over time, such that individuals with greater PsyCap perceived greater OV in the organization, and vice versa. Both PsyCap and OV also strongly correlated with work happiness, with a simplex structure (i.e., variables closer in time are more strongly correlated, with correlation strength declining over time). For
example, the correlation between Time 1 PsyCap and work happiness was $r = .65$, whereas the correlation between Time 1 PsyCap and Time 3 work happiness was $r = .45$.

Figure 2 summarizes two path models testing prospective associations between Time 1 PsyCap and OV and subsequent work happiness, controlling for Time 1 work happiness. Not surprisingly, work happiness was by far the strongest predictor of subsequent work happiness. PsyCap and OV directly related to greater workplace happiness at Time 2, but were only indirectly related to workplace happiness at Time 3.

### Table 4.3

*Means, standard deviations and correlations for PsyCap, organizational virtuousness (OV) and work happiness within and across three measurement time-points*

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PsyCap Time 1</td>
<td>260</td>
<td>4.75</td>
<td>.63</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. OV Time 1</td>
<td>249</td>
<td>4.77</td>
<td>.90</td>
<td>.45</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Work happiness Time 1</td>
<td>260</td>
<td>4.38</td>
<td>.86</td>
<td>.65</td>
<td>.70</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. PsyCap Time 2</td>
<td>182</td>
<td>4.77</td>
<td>.62</td>
<td>.86</td>
<td>.51</td>
<td>.58</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. OV Time 2</td>
<td>171</td>
<td>4.91</td>
<td>.84</td>
<td>.54</td>
<td>.79</td>
<td>.73</td>
<td>.47</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Work happiness Time 2</td>
<td>178</td>
<td>4.73</td>
<td>.87</td>
<td>.66</td>
<td>.61</td>
<td>.85</td>
<td>.64</td>
<td>.73</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. PsyCap Time 3</td>
<td>206</td>
<td>4.81</td>
<td>.55</td>
<td>.71</td>
<td>.31</td>
<td>.48</td>
<td>.73</td>
<td>.41</td>
<td>.47</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. OV Time 3</td>
<td>198</td>
<td>4.88</td>
<td>.81</td>
<td>.29</td>
<td>.71</td>
<td>.45</td>
<td>.36</td>
<td>.78</td>
<td>.55</td>
<td>.51</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>9. Work happiness Time 3</td>
<td>207</td>
<td>4.50</td>
<td>.86</td>
<td>.45</td>
<td>.42</td>
<td>.63</td>
<td>.41</td>
<td>.50</td>
<td>.72</td>
<td>.59</td>
<td>.65</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*Note:* Work happiness is the average standardized scores on job satisfaction, engagement, and commitment, with a constant added to eliminate negative values. All $p < 0.01$

#### 4.3.3 Synergistic Effect

Finally, the synergistic effect of PsyCap and OV on work happiness was tested. Figure 3 shows the mean scores and 95% confidence intervals for the five groups at each time point.

The mean comparison suggests that there is a small synergistic effect between PsyCap and OV, but that having high levels of both or one of the constructs influences levels of work happiness when compared to having low levels of both. The lack of synergy between PsyCap and OV may be
explained by a ceiling effect in the measures used in this study, as the mean scores of the ‘high’
groups (67% and above tertile) were close to the maximum scores of the measures.

Figure 4.1. Path analyzes examining the indirect (top) and direct (bottom) associations between
PsyCap, OV, and WH over time. Significant ($p < .05$) pathways are solid, non-significant pathways are
dashed lines.
Figure 4.2. Analysis of work happiness means and 95% confidence intervals at three time points to examine the synergistic effect between PsyCap and OV on WH
4.4 Discussion

Bringing together the top-down perspective of positive organizational scholarship with the bottom-up approaches of positive organizational behavior, this study examined the combined effect of employee PsyCap and perception of virtue in the organization (OV) on work happiness. The examinations were performed cross-sectionally and prospectively across a 15-month period. Taken together, results of the regression analysis, path analysis models, and work happiness mean score comparisons suggest that work happiness can be predicted directly and separately by PsyCap and OV (within and across time). Further, a synergistic effect between the constructs may exist, although this effect is seemingly limited by a ceiling effect with the measures used in this study.

Within and across time, PsyCap and OV were positively associated with one another. It may be that increased PsyCap enables employees to see virtues in their work environment more explicitly. For example, an optimistic employee believes that good things will happen to them (Carver & Scheier, 2002). This may influence their motivational state and lead to evaluative processes that allow them to more clearly see the presence of the virtue of optimism in their organization. For example, if a leader introduces a new virtues-based practice at work, employees with high optimism may have a positive predisposition to see the virtue in that new initiative. The underlying explanation for this rests on the idea of attitudes. Attitudes have been found to help categorize objects (Smith, Fazio & Cejka, 1996), assist decision-making ease (Blascovich, Ernst, Tomaka, Kelsey, Salomon & Fazio, 1993) and decision-making quality (Fazio, Blascovich & Driscoll, 1992). Thus employees with optimistic attitudes could be more likely to evaluate virtuous practices and policies within the organization through a lens of optimism.

Both PsyCap and OV were also correlated with greater reported work happiness, cross-sectionally and over time. Employees with high PsyCap are hopeful and have positive expectations

---

3 Path analysis results do not show that work happiness is predicted directly or indirectly by OV as the inter-correlation between the constructs is controlled for. However, mean comparison analysis results suggest that PsyCap and OV make a unique and direct contribution to work happiness.
about future outcomes and they have greater confidence in their ability to deal with challenges and higher levels of resilience. This may provide them with the resources to perform well in their job, thus enabling and supporting their work happiness.

Past research has considered individual-level aspects of organizational climate (e.g., gratitude or trust or compassion) and how these influence worker wellbeing/happiness. Waters (2012) found a significant association between gratitude as a cultural variable at work and levels of job satisfaction in employees. Further, there is evidence that experiencing compassion at work increases member experience of positive emotions (Lilius et al., 2008, Lilius, Kanov, Dutton, Worline & Maitlis, 2012). Finally, organizational trust has been shown to have a positive relationship with employee satisfaction (Dirks & Ferrin, 2001; Rich, 1997) and their levels of organizational commitment (Brockner et al., 1997, Dirks & Ferrin, 2001).

Past research as also shown that workplace culture influences employee levels of emotional wellbeing (Hartel & Ashkanasy, 2011). The current study found that perception of a virtuous culture was related to the work happiness of employees. Organizational virtuousness can be considered as a virtues-based culture that manifests through observable artefacts, espoused values, shared beliefs and collective behaviors. For example, virtues-based practices such as gratitude boards (to support compassion and optimism) or leaders beginning meetings with ‘what went well’ exercise (to support optimism and trust) provide observable artifacts of the virtuous culture and opportunities to foster virtues through espoused values. Moving deeper than the use of practices, other elements of culture, such as shared beliefs and collective behaviors may be influenced by embedding virtues in organizational behaviors, leadership (Cameron, 2011), engaging in strengths-based performance conversations (Bouskila-Yam & Kluger, 2011) and infusing virtues into training, development and coaching. Together, these virtue-infused elements of culture may provide organizational resources that influence the quality of relationship between the organization and employee such that their happiness at work increases. For example, a workplace culture in which leaders are optimistic about the future, compassionate in their communication and forgiving when needed, may help develop
supportive leader-worker relations and a supportive work community; relationships and community are social resources that may help to develop employee happiness at work (Fisher, 2010).

Haidt’s (2000) elevation hypothesis can also be used to explain the study results. Employees who perceive more virtuousness in the behavior of colleagues and see more virtue in organizational practices, may be motivated to behave more virtuously themselves. This virtuous behavior can lead to positive core self-evaluation and resilience. Given the link between virtuous behavior and wellbeing that has been established in past research (Proudfoot, Corr, Guest, & Dunn, 2009) this may explain why the current sample of employees reported a relationship between their perception of OV and happiness at work.

When turning to the longitudinal data, the associations between PsyCap, OV, and work happiness were not as strong over time as those within the same time-points. These results provide a temporal understanding of the associations between the variables, which has practical implications for organizations.

Both independently and together, PsyCap and OV had a stronger association with work happiness over time than either variable alone. This suggests that top-down influences on employee work happiness (e.g. the use of positive practices, Cameron, 2011) and bottom-up influences on work happiness (such as developing employee PsyCap) have independent and synergistic associations. Therefore, organizations need to focus efforts on developing both individual-level resources (PsyCap) and organizational-level resources (virtues present in the organization, OV) to support employee wellbeing.

4.4.1 Study Limitations and Strengths

The current research has a number of limitations. The correlational design of the study limits our ability to draw conclusions about causality of the associations between PsyCap, OV, and work happiness. For example, within-time results showed significant associations between the three variables, however because of the correlational study design, we cannot draw conclusions about whether higher PsyCap causes employees to have higher levels of work happiness; whether higher
levels of work happiness cause people to have higher PsyCap or whether there is a third unidentified variable that underlies the associations. It may be, for example, that employee attitudes are an underlying mechanism that if tested would provide a better understanding of how employee PsyCap and OV influence work happiness over time. Future research should investigate attitudes as a possible underlying mechanism in order to more fully understand the complexity of these relationships.

Measures were also self-reported, and method variance could influence correlations. The use of objective measures of organizational virtues or workplace happiness will be valuable in the future.

The main outcome variable, work happiness, is built upon Fisher’s (2010) model. To date, there is not a single measure that assesses the three inter-related domains proposed by the model. The current study therefore combined three psychometrically validated measures to approximate such a measure. Although the items provided some support for Fisher’s model, model fit could be considerably improved, to the extent that the very strong correlations amongst study variables could reflect inadequate measurement of the underlying constructs. Further testing of Fisher’s model, with a related valid measure, is needed.

The study was conducted with employees who work in a school following the growing interest in positive education to study staff wellbeing in addition to the current major focus of positive education on student wellbeing (Kern, Waters, Adler & White, 2014a; Kristjánsson, 2012; Waters & Stokes, 2015). While the use of this sample adds to the file of positive education it may not be generalizable to workers from other sectors.

Despite these limitations, the study has a number of strengths. The study provides a first empirical test of Fisher’s (2010) theory of employee work happiness. It includes both top-down organization aspects and bottom-up employee aspects thus responding to Sloan’s (1987) idea of dual-intervention. The longitudinal nature of the study provides a valuable temporal understanding to the patterns of the associations between PsyCap, OV, and work happiness. The quantitative analysis is appropriate to examine associations between PsyCap, OV, and work happiness to see what naturally occurs without intervention efforts (Cresswell, 2003).
4.5 Conclusion

Over recent years there has been increasing evidence that links employee happiness to a broad range of positive individual-level and organizational-level outcomes (Fisher, 2010). This has led organizations to value the importance of employee happiness and to want to know how it is that employee happiness can be increased (Fisher, 2010). The current research adopted Sloan’s (1987) dual-intervention approach and examined the interrelationships between employee happiness with a bottom-up, individual-level variable (psychological capital) and with a top-down, organizational-level variable (organizational virtue) within and between three time-points. Rather than study a multitude of individual-level variables and how they relate to individual-level aspects of happiness at work, the current study examined three higher order constructs that have recently been proposed in the fields of POS and POB. The higher order approach allows for shared variance between individual constructs and, ultimately provides a more parsimonious way for approach for studying associations amongst these constructs.

By investigating the interrelationships between work happiness, PsyCap and organizational virtues with a sample of school employees, the study integrates aspects of the fields of positive organizational scholarship, positive organizational behavior and positive education. In an applied setting, the results can be used to help schools and other organizations understand the importance of developing the personal resources of employees (PsyCap) and the culture of the organization to enhance employee work happiness. We hope this study inspires further research into the factors that influence employee happiness at work.
Chapter 5 Overview:

Building on the work of Chapter 4 in exploring the associations between variables within the IO-OI model, this chapter (published in *Frontiers in Psychology*), explores one of the processes outlined in Chapter 2: selective exposure and confirmation bias. Using a quasi-experimental study design, school staff completed surveys at three time points. After the first assessment, some staff were involved in a positive psychology training intervention. Results of descriptive statistics, correlation, and regression analyses on the intervention group provide some support for selective exposure and confirmation bias as explanatory mechanisms for the associations between variables within the IO-OI model.
Chapter 5

Study 2:
Exploring Selective Exposure and Confirmation Bias as Processes Underlying Employee Work Happiness: An Intervention Study


Abstract

Employee psychological capital (PsyCap), perceptions of organizational virtue (OV), and work happiness have been shown to be associated within and over time. This study examines selective exposure and confirmation bias as potential processes underlying PsyCap, OV, and work happiness associations. As part of a quasi-experimental study design, school staff (N=69) completed surveys at three time points. After the first assessment, some staff (n=51) completed a positive psychology training intervention. Results of descriptive statistics, correlation, and regression analyses on the intervention group provide some support for selective exposure and confirmation bias as explanatory mechanisms. In focusing on the processes through which employee attitudes may influence work happiness this study advances theoretical understanding, specifically of selective exposure and confirmation bias in a field study context.
5.1 Introduction

As the nature of business has shifted from a concentration on scarce financial capital to a concentration on scarce human capital (Bartlett & Ghoshal, 2002), people have become of strategic importance in today’s information and knowledge-driven society. In this modern economy, value is created through intangibles such as such as intelligence, creativity, and personal factors such as warmth rather than physical mass (Quah & Coyle, 2002). Further, there is a growing expectation from employees that organizations will take an active role in supporting their wellbeing, and this has become an important point of competitive advantage for organizations in the employment market (Martin et al., 2005). As such, organizations are recognizing the importance of intentionally supporting and fostering employee wellbeing if they are to access the full capacity of their human capital and perform well (Van De Voorde, Paauwe, & Van Veldhoven, 2012).

Positive psychology (PP) scientifically studies optimal functioning in individuals, groups, and institutions (Gable & Haidt, 2005). The application of positive psychology in work contexts has been pursued in two complementary fields: Positive Organizational Scholarship (POS) and Positive Organizational Behavior (POB). POS is defined as “the study of especially positive outcomes, processes, and attributes of organizations” such as organizational virtues and peak performance (Cameron, Dutton, & Quinn, 2003, p. 4). POB focuses upon psychological capacities such as hope, optimism, self-efficacy and resilience (Luthans, Avolio, Avey, & Norman, 2007; Luthans & Church, 2002). POS examines organizational phenomena, whereas POB is concerned with the cultivation of positive psychological states within individual employees. A growing body of research from these two fields suggests that employee wellbeing benefits both individuals and organizations. However, there has been less research exploring ways in which individual and organizational growth can be supported by organizations in ways that are mutually beneficial. This has led to a recent call for greater integration between the two fields (Youssef & Luthans, 2011).

Using the Inside-out Outside-in (IO-OI) model (Williams, Kern, & Waters, in press), the current study responds to this call by exploring two processes underlying the reciprocal and
synergistic influence of individual psychological capital and organizational culture on employee wellbeing at work. In identifying and explaining the processes involved in these relationships, this paper also responds to calls for researchers to understand more about the mechanisms underlying PP interventions (Lyubomirsky & Layous, 2013), particularly within the work context.

5.1.1 Wellbeing at work

For most adults, work represents half of waking life (Wrzesniewski et al., 1997). Work can provide individuals with opportunities to develop their capabilities (Ulrich & Smallwood, 2004), use their strengths (Buckingham, 2001; Peterson & Seligman, 2004) and flourish (Keyes, 2002; Huppert, 2009b). In doing so, work influences how a person feels and functions, either positively or negatively. Evidence suggests that optimal levels of wellbeing at work are associated with desirable outcomes for employees and organizations. For instance, wellbeing in employees is linked with greater engagement (Harter, Schmidt & Keyes, 2003), organizational citizenship behaviors (Ilies, Fulmer, Spitzmuller, & Johnson, 2009) and overall career success (Boehm & Lyubomirsky, 2008). Further, wellbeing at work spills over to other life domains (Ilies, Wilson, & Wagner, 2009; Sirgy, Efraty, Siegel, & Lee, 2001) and has been linked with lower health risk behaviors and improved mental health (Wilson, DeJoy, Vandenbergh, Richardson, & McGrath, 2004). For organizations, employee wellbeing has been related to customer satisfaction (Giardini & Frese, 2008), productivity, presenteeism, and effort at work (Keyes, 2005; Sears et al., 2013), lower voluntary turnover (Wright & Bonett, 2007), and fewer sick days (Keyes, 2005). Further, organizations that develop employee wellbeing receive a positive return on investment through reduced absenteeism and compensation claims (Price Waterhouse Coopers, 2014). Thus, employee wellbeing has benefits for both the individual and the organization; as such it is in the interest of organizations to intentionally develop it.

Workplace wellbeing has been defined in a number of ways (e.g. Cotton & Hart, 2003; Page & Vella-Brodrick, 2009; Schulte & Vainio, 2010; Sharma & Sharma, 2015). One key component of wellbeing is happiness, which Lyubomirsky (2007) defines as “the experience of joy, contentment, or
positive well-being, combined with a sense that one’s life is good, meaningful, and worthwhile” (p. 32). Fisher (2010) suggests that existing measures of work happiness such as job satisfaction (Locke, 1976), positive affect (Fisher & Boyle, 1997), and thriving and vigor (Spreitzer & Sonensheim, 2004) are limited by a focus on the individual level of analysis, reference only to pleasant experiences or judgments, and a focus on core job task performance. She proposes an holistic, higher-order approach to conceptualizing work happiness comprising: (a) engagement with the work itself, (b) satisfaction with the job, and (c) feelings of affective commitment to the organization as a whole. Fisher’s model of work happiness parallels recent advances in wellbeing theory, which suggest that wellbeing is multidimensional in nature (e.g., Forgeard, Jayawickreme, Kern, & Seligman, 2011; Huppert & So, 2013; Seligman, 2011) and has received some empirical support (Williams, Kern, & Waters, 2015). The IO-OI model adopts Fisher’s model of work happiness as the outcome of interest.

5.1.2 The Inside-out Outside-in Model of work happiness

The Inside-out Outside-in (IO-OI) model (Williams, Kern, & Waters, in press) is a dual approach process model that proposes that work happiness is influenced by factors ‘inside’ the employee and factors ‘outside’ of the employee (see Figure 1). Factors inside the employee are those that influence an employee’s experience of work and that cannot be separated from the individual, such as attitudes, values, beliefs, emotions, and behaviors. Factors outside of the employee are defined as those that influence an employee’s experience of work and that are discrete to the individual, such as the organizational culture, work climate, job characteristics, manager/supervisor, colleagues, and the physical work environment. For instance, targeting positive employee development through training, mentoring, and job shadowing provides an ‘inside-out’ approach, as it aims to directly influence attitudes, beliefs, and behaviors in order to positively impact the individual’s work experience. In contrast, a positive strategies and practices framework aimed at developing a positive organizational culture provides an ‘outside-in’ approach, as it aims to influence the environment in which the individual operates to positively impact the individual’s work experience.
Evidence suggests that both approaches enable and support the development of work happiness, but a combination of both inside-out and outside-in approaches may offer the greatest benefit (Williams, Kern, & Waters, 2015). The IO-OI model further suggests that synergistic relationships exist between the inside-out and the outside-in approaches. This occurs via three processes: 1) the iterative reprocessing of evaluations, 2) selective exposure, and 3) confirmation bias. The purpose of the current study is to examine the influence of the latter two processes – selective exposure and confirmation bias – as explanatory mechanisms for the associations between employee positive attitudes (conceptualized as psychological capital (PsyCap), Luthans, Youssef, & Avolio, 2007), perception of virtues in the organization culture (conceptualized as organizational virtuousness (OV), Cameron et al., 2004), and levels of work happiness (WH, Fisher, 2010).

5.1.3 Selective exposure and confirmation bias

Selective exposure is the phenomenon whereby people choose to focus on information in
their environment that is congruent with and confirms their current attitudes in order to avoid or reduce cognitive dissonance (Festinger, 1962). It comprises three sub-processes: a) selective exposure, through which people avoid communication that is opposite to their existing attitude; b) selective perception, when people are confronted with unsympathetic material, either they do not perceive it or they make it fit for their existing opinion; and, c) selective retention, when people simply forget attitude-incongruent information (Klapper, 1960).

In addition to filtering the information that is attended to, individuals may also actively seek out and assign more weight or validity to information that supports their current attitude. This is known as confirmation bias, and impacts the way in which people search for, interpret, and recall information (Wason, 1960). Selective exposure and confirmation bias have been found to impact decision making in a number of settings including health (Nickerson, 1998), politics (Hart et al., 2009), and scientific research (Hergovich et al., 2010). However, they have not been explored as processes that explain how employee attitudes and perception of organization culture interact to influence levels of work happiness.

5.1.4 Positive employee attitudes

Attitudes serve as a mental heuristic that help us navigate our environment effectively and efficiently by removing the need for us to evaluate and make decisions about each new object encountered. An attitude is defined as “an evaluation of an object of thought” (Bohner & Dickel, 2011, p. 392) and have been found to help categorize objects (Smith, Fazio, & Cejka, 1996), support decision-making ease (Blascovich et al., 1993), and decision-making quality (Fazio, Blascovich, & Driscoll, 1992). Attitudes of organization members assist them to evaluate their job role, behaviors of managers and colleagues, organization policies, and the organization environment as a whole. Attitudes influence and are manifest through an individual’s thoughts, feelings, and behaviors. As such, the development of positive attitudes in employees is likely to increase ‘inside’ personal resources such as the frequency of positive affect; positive core-self evaluations linked to resiliency, and levels of efficacy through an individual’s sense of their ability to successfully control their
environment. Positive attitudes may also influence perception of ‘outside’ organizational resources through a member’s ability to evaluate positive practices in the organization culture.

In this study, we conceptualize positive attitudes as psychological capital (PsyCap, Luthans et al., 2007), defined as, “an individual’s positive psychological state of development” (Luthans, Youssef & Avolio, 2007). PsyCap has been defined as a ‘resource bank’ that enables successful performance, response to challenges and that supports people to flourish in multiple life domains, including work, relationships and physical health (Hobfoll, 2002). PsyCap comprises four elements - hope, efficacy, resilience and optimism - that function together. PsyCap has been shown to lead to higher performance outcomes in the workplace (Avey et al., 2011; Newman et al., 2014; Luthans, Youssef-Morgan & Avolio, 2015). It is suggested that four mechanisms underlie this synergistic relationship: 1) positive expectations about future outcomes enabling higher motivation, 2) the development of multiple pathways to achieve goals, 3) promoting a positive response to setbacks, and 4) reinforcement of greater extra effort from individuals (Luthans et al., 2010, p.48).

Although PsyCap is often thought of as a resource, we propose that it can also be understood as attitudes. The four elements of PsyCap reflect the ways in which attitudes influence and are manifest (i.e., through an individual’s thoughts, feelings, and/or behaviors). For example, an organization member with a hopeful ‘evaluation of an object of thought’ or attitude toward meeting a work target, experiences high levels of goal-directed energy (feelings), can generate multiple pathways (thoughts) and as such make plans to meet their goals (behaviors) (Snyder et al., 1991). An optimistic attitude is one of high motivation (feelings) driven by positive future expectations (thoughts) (Scheier & Carver, 1985). Self-efficacious attitudes comprise an individual’s confidence (feelings/thoughts) in their motivation, skills and cognitive resources to successfully meet the demands made of them (Stajkovic & Luthans, 1998), which results in them making greater effort (behaviors). An attitude of resilience is characterized by the ability to ‘bounce back’ from challenging situations (feelings, thoughts) (Masten & Reed, 2002, p. 74) and in doing so, demonstrate a positive response to setbacks (thoughts/behaviors).
The four elements of PsyCap have been found to be open to development and impacted through interventions (Youssef & Luthans, 2007), suggesting that it is a valid model to use when fostering positive attitudes in employees. On this basis, we propose that PsyCap and its elements can be understood as attitudes, and use it as the conceptualization of positive attitudes in this study.

5.1.5 Attitudes, selective exposure, and confirmation bias

In theory, the attitudes of employees influence the processes of selective exposure and confirmation bias as they search for and give more weight to information that is congruent with their current attitudes. As such, it is likely that employees with positive attitudes will more easily notice the positive behaviors of colleagues and the positive practices put in place by their organization because these aspects of the organization environment are congruent with their positive attitude (selective exposure). The member may then place more validity on that information which further reinforces their positive attitude (confirmation bias), making it more likely that they will notice other positive attitude-congruent aspects of their work environment, thus activating the cycle again.

Figure 2 shows the dynamic cycle that theoretically is triggered as employees develop positive attitudes and the processes of selective exposure and confirmation bias influence their perception and evaluation of the organization environment. Positive attitudes influence and are influenced by dynamic cycles that move organization members through a sequence in which positive attitudes enable them to see more virtues in the work environment (selective exposure) which reinforces their positive attitude towards the organization (confirmation bias) which in turn allows them to see more virtues (selective exposure). As such, higher levels of positive attitudes support a positive selective exposure process, in which employees focus on information in their environment that is congruent with and confirms their current positive attitudes in order to avoid or reduce cognitive dissonance. As such, they see more virtuous behavior and practice in their organizational environment.
Figure 5.2. The processes and outcomes of positive development on employee attitudes and evaluation of virtues in the organization culture (adapted from Williams et al., 2016b).

With ongoing environmental stimuli, the cycle is likely to continue over time as selective exposure and confirmation bias influence the attention and weight individuals give to positive behaviors and practices in the organization environment. This theoretically establishes an upward spiral, whereby attitudes towards the organization become more positive as virtues are more easily perceived, seen, and acted upon. Thus the processes of selective exposure and confirmation bias support members with positive attitudes to recognize and reflect on behaviors and practices from a positive, virtues-based perspective. The positive dynamic spiral as shown in Figure 2 may lead to higher levels of work happiness through the individual personal resources and organizational social resources that it creates.

Equally, we propose that this reinforcing selective exposure-confirmation bias spiral can work in the inverse direction, such that employees holding negative attitudes will selectively recognize and reflect on negative aspects of the organization, resulting in lower levels of work
happiness. Further, as a dynamic system, employees might shift between positive and negative spirals at different times, resulting in variable levels of workplace happiness.

Moving beyond the individual, such cycles may impact the organization more broadly. Positive attitudes in a single employee may have little impact, but when spread across many employees, a tipping point may be reached through which collective change is triggered, increasing the capacity for virtuousness across the whole system. Haidt’s (2000) elevation proposition suggests that when we perceive virtuous behavior in others, we are motivated to behave virtuously ourselves. Thus, as employees develop positive attitudes they become more open to the seeing virtuousness in the organization culture, because it is congruent with their existing attitude. This is then affirmed and confirmed through the processes of selective exposure and confirmation bias and as a result they perceive more virtuousness in others and evaluate other people’s behaviors from a virtues perspective. Haidt’s work suggests that by seeing more virtues in others, organization members may ‘elevate’ their actions and behave more virtuously themselves. The elevation proposition explains how the processes of selective exposure and confirmation bias may contribute to increasing the capacity for virtuousness at the collective level, thus building organizational social resources leading to increased work happiness (Williams, Kern, & Waters, in press).

5.1.6 The current study

The current study used data from a quasi-experimental study to test the proposition that positive attitudes in employees trigger a dynamic positive loop that influences their perception and evaluation of the organization culture and overall work happiness through the processes of selective exposure and confirmation bias.

In the larger study, a group of school staff members completed questionnaires at three time points (pre-intervention, immediately post intervention, 8 weeks post intervention). After the first assessment, most of the staff members completed a training program that focused on skills to develop and sustain positive attitudes (PsyCap), with the remaining staff members constituting a control group. To consider selective exposure and confirmation bias as processes underlying work
happiness, analyses here primarily focus on those who completed the training. However, theoretically, something is needed to begin the positive spiral. The intervention was intended to be this trigger. Thus, we also compare scores between the treatment and control group, as a preliminary test that the intervention is triggering change.

To operationalize the selective exposure process, participants were asked to reflect upon the organization culture and rate it on the five factors from the Organizational Virtuousness Scale (K. S. Cameron et al., 2004) and their opposite (e.g., for the trust factor, the opposite is dishonesty). To operationalize the confirmation bias process, participants completed a sentence completion task immediately after the culture rating measure in the survey battery, in which the respondent completed a number of sentence ‘stems’ with their own sentence ‘tails’. For example, the sentence stem ‘at Organization X we are expected to...’ to which the participant provided their individual sentence ending or ‘tail’.

Applying the processes of selective exposure and confirmation bias to developing work happiness, the study tests three hypotheses:

\[ H_1: \] Based on selective exposure, respondents with more positive attitudes (PsyCap) will evaluate the organization culture more positively within and over time.

\[ H_2: \] Based on confirmation bias, respondents who evaluate the organization culture more positively will provide more positive sentence tails within and over time.

\[ H_3: \] Respondents who evaluate the organization culture more positively and who provide more positive sentence tails will have higher levels of work happiness.

5.2 Method

5.2.1 Participants

This study was part of a larger quasi-experimental design. In the full design, a group of 69 employees of a large independent school in Victoria, Australia participated in this study; 32 were members of teaching staff (18 female, 14 male) and 37 were employed in non-teaching roles (21 female, 16 male). The intervention group \((n = 51; 27\) female, 24 male) comprised participants who
completed a three-day positive psychology training-based intervention that was part of an ongoing organization-wide program at the research site. For comparison, employees at the research site who had not taken part in the training intervention in previous years were identified (n = 59) and invited by email to participate in the study by completing a series of questionnaires. Eighteen individuals (12 female, 6 male; 4 teaching, 14 non-teaching roles) agreed to complete the measures and are considered the control group. Demographic information at times 1, 2, and 3 are shown in Table 1.

Table 5.1
Demographic data for the samples at each time-point.

<table>
<thead>
<tr>
<th>Role:</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment (n=51)</td>
<td>Control (n=18)</td>
<td>Treatment (n=51)</td>
</tr>
<tr>
<td>Role:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching</td>
<td>27</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>Non-teaching</td>
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<td>14</td>
<td>24</td>
</tr>
<tr>
<td>Gender:</td>
<td></td>
<td></td>
<td></td>
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<td>27</td>
<td>6</td>
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<tr>
<td>Age:</td>
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<tr>
<td>25-34 years</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>35-44 years</td>
<td>12</td>
<td>2</td>
<td>12</td>
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<tr>
<td>45-54 years</td>
<td>15</td>
<td>5</td>
<td>15</td>
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<tr>
<td>55-64 years</td>
<td>17</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>65+ years</td>
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<td>4</td>
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<tr>
<td>Tenure:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New this year</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>1 - 5 years</td>
<td>9</td>
<td>2</td>
<td>9</td>
</tr>
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<td>6</td>
</tr>
<tr>
<td>16-20 years</td>
<td>25</td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td>20+ years</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

All 51 participants in the intervention group completed the questionnaire at time 1 and 2; 38 (73%) completed it at time 3. For the control group, all 18 completed the questionnaire at time 1, 11 (64%) at time 2, and 9 (50%) at time 3. T-tests and chi square compared the 48 individuals who completed the questionnaire at all three time points to the 22 individuals who only completed the
measures at one or two occasions. There were no significant differences in terms of demographics (age, gender, role in school, hours worked, tenure status) or in terms of time 1 PsyCap, OV, or work happiness.

5.2.2 Materials

The intervention group completed a training course, which comprised three consecutive days of approximately six hours training contact time. Training materials were delivered via a mix of lecture and small group (2-4 people) activities, within groups of approximately 14-16 individuals. Each group was facilitated by two trainers, both of whom had received specialist training from the program authors to deliver the training materials. The program was based on materials developed by staff at the University of Pennsylvania’s Positive Psychology Center and draws from the relevant theories and research underpinning the four elements of PsyCap. Examples from the training include: 1) participants are taught how to dispute negative thinking patterns with more optimistic perspectives, to foster optimism and hope; 2) participants learn about the ABC Model of cognitive behavioral therapy (Ellis, 1957) and how to identify deeply held beliefs that may be driving unhelpful thought patterns and behaviors to build resilience; and 3) at the end of each topic, participants identify how they could use the skill or knowledge taught in their personal and professional lives to build efficacy.

5.2.3 Procedure

The intervention group was invited to complete a questionnaire at three time points: prior to day one of the training intervention (time 1), at the end of the final day of the intervention (time 2), and eight weeks after the intervention ended (time 3). Completion of the survey was voluntary, which was outlined in a plain language statement provided to participants at time 1 and reinforced in the verbal preamble given by the researcher prior to the first survey. Before completing the survey at time 1, participants created a unique user name, which they used to complete the surveys again at times 2 and 3. This ensured anonymity whilst enabling the marrying of results across the three measurement occasions.
For the intervention group, the survey was available in hard copy at times 1 and 2. The responses were subsequently inputted manually by the researcher. At time 3 the survey was available online via the independent survey hosting website Survey Monkey (www.surveymonkey.com.au) and a link to the survey was sent to the intervention group via the research site’s email system. The survey was available for a period of 10 days. Regular reminders, via email and verbal announcements at daily staff briefings were made by the researcher throughout that time to encourage participation. The control group completed the measures at the same time as the intervention group via Survey Monkey. A link to the survey was sent to them at each time point via the research site’s email system.

5.2.4 Measures

The survey combined pre-established scales to measure positive attitudes (PsyCap), perception of the virtues present in the organization (OV). The work happiness scale used in Williams, Kern and Waters (2015) was tested and refined for the current study, and measures for selective exposure and confirmation bias were developed by the authors.

Positive attitudes. Positive attitudes were measured through the 24-item self-rated Psychological Capital Questionnaire (PCQ; Luthans et al., 2007), which has been tested in samples from service, manufacturing, high-tech, military, and education sectors and across national cultural settings. In the PCQ, each of the four PsyCap factors is measured by six items adapted from other scales. Example items include: “There are lots of ways around any problem” (hope); “When things are uncertain for me at work, I usually expect the best” (optimism); “I usually take stressful things at work in stride” (resilience); and “I feel confident presenting information to a group of colleagues” (self-efficacy). Items are scored on a 6-point Likert scale from “strongly disagree” (1) to “strongly agree” (6), and are averaged together to represent the individual’s level of PsyCap (24 items, Cronbach’s $\alpha_{t1} = .89$, $\alpha_{t2} = .85$, $\alpha_{t3} = .88$).

Perception of the virtues present in the organization. The Organizational Virtuousness Scale (Cameron, Bright, & Caza, 2004) was used to measure the perception of virtues present in the
organization (OV). Work by Cameron et al., (2004) resulted in a five factor model which suggests that organizational virtuousness (OV) comprises: 1) organizational forgiveness, 2) organizational trust, 3) organizational integrity, 4) organizational optimism, and 5) organizational compassion. Items include: “we try to learn from our mistakes here, consequently missteps are quickly forgiven” (forgiveness); “people trust the leadership of this organization” (trust); “this organization demonstrates the highest levels of integrity” (integrity); “we are optimistic that we will succeed, even when faced with major challenges” (optimism); and “this organization is characterized by many acts of caring and concern for other people” (compassion). Each of the 15 items is scored on a 6-point Likert scale from “strongly disagree” (1) to “strongly agree” (6), with higher scores indicating a greater perceived presence of that dimension of OV. The items are averaged together to represent an individual’s explicit OV score (15 items, $\alpha_{t1} = .96, \alpha_{t2} = .93, \alpha_{t3} = .95$).

**Work happiness.** Work Happiness was defined using Fisher’s (2010) model, which comprises 1) engagement with the work itself; 2) satisfaction with the job, including contextual features such as pay, co-workers, supervision, and environment; and 3) feelings of affective commitment to the organization as a whole. As a single measure of this model does not currently exist, Williams, Kern and Waters (2015) combined three validated scales to represent the three factors: the 9-item Utrecht Work Engagement Scale (UWES-9; Schaufeli & Bakkar, 2003) for work engagement; the 8-item Job in General Scale (JIG; Russell et al., 2004) for job satisfaction and a 9-item positively phrased version of the 15-item Organizational Commitment Scale (Mowday, Steers, & Porter, 1979) for affective commitment. To further refine this measure, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were used to test the items, which suggested 22-items best captured Fisher’s model (see Appendix A for details). Items were normalized to unity, and then averaged together to represent an individual’s work happiness at each time point ($\alpha_{t1} = .95, \alpha_{t2} = .86, \alpha_{t3} = .91$).

**Selective exposure.** There are a variety of techniques for measuring selective exposure including retrospective reports, behavioral intentions, observation of behavior and aggregate
measures of behavior over time (see Clay, Barber, & Shook, 2013 for a critical review). We were interested to examine whether a respondent’s positive/negative attitudes influenced the information they noticed, remembered and recalled about the culture of the organization. A retrospective report technique was used in which participants were asked to reflect on their organization and rate how much they noticed a specific quality was present in the culture on a scale of 0 and 100 which could be thought of as percentage out of 100 (0 = not at all, 50 = sometimes/some areas, 100 = strongly evident). The specific qualities they were asked to rate included the five factors from the OV scale (Cameron et al., 2004) and their opposite, (e.g., for the OV factor optimism, the opposite is pessimism). For the purpose of analysis, the ratings mean for the OV opposites (i.e. negative qualities) was deducted from the ratings mean for the OV factors (i.e. positive qualities) to give an overall positive-to-negative qualities rating for each time-point. The possible range of ratings was therefore -100 to 100, with a higher positive rating score indicating more positive qualities about the culture were noticed, remembered and recalled (α_{t1} = .85, α_{t2} = .87, α_{t3} = .89).

**Confirmation bias.** Confirmation bias was measured through a sentence completion task that immediately followed the culture rating measure. Sentence completion tasks are a projective and deliberative form of attitude measure that involves the respondent completing a number of sentence stems (Vargas et al., 2004). Interpretation-based measures such as these examine the extent to which motives and worldviews are projected onto stimuli, thus giving an insight to individual attitudes. We considered confirmation bias to be present when the valence pattern matched (i.e., positive results in the culture rating measure will lead to more positive sentence tails in this measure).

Guided by extant literature (Berman & Miner, 1985; Stahl et al., 1985) 15 sentence stems relating to the host organization were developed (see Appendix 1). Examples include: ‘Organization X is...’; ‘At Organization X we are expected to...’ and, ‘The culture at Organization X ...’. Two trained
coders then rated each response (2,235 ratings each) as negative (0), neutral (1), or positive (2). Based upon guidelines by Bland and Altman (1999), Landis and Koch (1977), and Cicchetti (1994), there was substantial inter-rater agreement according to Cohen’s kappa (Cohen’s κ = .752), and there was excellent agreement according to the intraclass correlation (ICC) using a two-way mixed, consistency, average measure (ICC = .939, 95% confidence interval = .934, .944 (Hallgren, 2012). The average of the two ratings was used as the final confirmation bias score for each respondent.

5.2.5 Data Analyses

First, to test the efficacy of the intervention in influencing positive attitudes (PsyCap) and perceptions of virtues in the organization (OV), standardized t-tests were conducted for the treatment and control group between time 1 (the beginning of day one of the training intervention) and time 2 (the end of the final day of the training intervention).

Hypotheses were then tested using the intervention group only. Descriptive statistics, correlation, and regression analyses were used to examine associations across the three time points among PsyCap and culture ratings (hypothesis 1), and culture ratings and sentence stems (hypothesis 2). To explore the interaction effect of culture ratings (CR) and sentence stems (SS) (hypothesis 3), four groups were created based on tertile splits on culture ratings (CR) and sentence stems (SS): CR+SS high (above 67% in both constructs); CR high (above 67% in culture ratings); SS high (above 67% in sentence stems); CR+SS low (below 33% in both constructs). A one-way ANOVA compared the mean scores of work happiness at each time point across these groups. In addition, an interaction variable of culture rating and sentence stems was created and regression analysis examined its effect on work happiness.

5.3 Results

5.3.1 Efficacy of the intervention

First, to test whether the intervention sufficiently triggers the change process, the

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4 An additional untrained coder rated all messages, but marginal distributions demonstrated that responses were biased and systematically different than the other two raters. We chose to use the two consistent trained coders.
intervention group ought to show higher levels of PsyCap and OV post-intervention compared to the control group. The levels of change between the treatment and control group in their PsyCap and OV were not significant.

The control group was small in size (n = 16), such that this comparison was under-powered. In addition, the control group only completed the questionnaires and did not participate in an alternative intervention. To further test the intervention, we conducted a supplemental analysis with previously obtained data set. Eighty-nine participants completed the PsyCap measure (but not the OV measure) before and after the same intervention conducted in the previous year. Replicating the analysis with the current intervention group, results showed that PsyCap significantly increased from time 1 (pre-intervention) to time 2 (post-intervention) (t(88) = 3.41, p = .001). This provides preliminary support that the intervention triggers change in participants, though additional testing with larger samples is needed.

5.3.2 Hypothesis testing

Table 2 shows the means, standard deviations, and correlations for the intervention group amongst PsyCap, OV, culture ratings, sentence stems and work happiness, within and across the three measurement occasions. Hypothesis 1 predicted that respondents with higher levels of PsyCap would rate the organization culture more positively within and over time and was partially supported. PsyCap at time 1 was significantly related to culture ratings at time 2 (r = .30, p = .04) and time 3 (r = .32, p = .05) but was not significantly related to culture ratings at time 1 (r = -.02, p = .90). PsyCap at times 2 and 3 were not related cross-sectionally or over time to ratings of the organization culture.

Hypothesis 2, which predicted that respondents who evaluate the organization culture more positively would provide more positive sentence tails cross-sectionally and over time, was supported within time-points but not across time. Culture ratings at each time point was significantly correlated with positive sentence stems within the same time (time 1: r = .32, p = .03; time 2: r = .34, p = .02 time 3; r = .46, p = .01), but this relationship was not sustained over time (e.g., time 2 culture rating and
Hypothesis 3 was tested using mean score comparison and regression analysis. Figure 3 shows the mean scores and 95% confidence intervals for the four groups based on tertile splits of culture ratings (CR) and sentence stems (SS) at each time point. The mean comparison suggests that culture ratings and sentence stems had a small synergistic effect at time 2 and time 3, but not at time. This partially supports hypothesis 3. Having high levels of both or one of the constructs influences levels of work happiness when compared to having low levels of both.

To further examine any interaction effect, we conducted a within time regression for an interaction between culture rating and sentence stems with work happiness at each time-point as the dependent variable (see Table 3). The $R^2$ from the three time-points indicates that the interaction between culture rating and sentence stems explains between 15.8% and 33.4% of employee work happiness ($R^2 = 0.16, 0.21, 0.33$, for times 1, 2, and 3 respectively), with lowest levels at time 1 and highest at time 3. However, associations were not significant (time 1 $p = .63$, time 2 $p = .26$, time 3 $p = .87$).
Table 5.2

Means, standard deviations and correlations for PsyCap, OV, culture ratings, sentence stems, and work happiness within and across three measurement time-points for the intervention group.

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<th>Variable</th>
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<th>SD</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<td>.44**</td>
<td>.43*</td>
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<td>.50**</td>
<td>.43*</td>
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<td>.47**</td>
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<td>.39*</td>
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<td>.43**</td>
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<td>.41**</td>
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<td>.49**</td>
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<td>-.13</td>
<td>0.08</td>
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<td>0.14</td>
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<td>0.07</td>
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<td>0.09</td>
<td>.33*</td>
<td>.56**</td>
<td>.37*</td>
<td>.36*</td>
<td>.32*</td>
<td>.38**</td>
<td>.44**</td>
<td>0.26</td>
<td>.60**</td>
<td>0.16</td>
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<td>0.93</td>
<td>0.06</td>
<td>.32*</td>
<td>0.26</td>
<td>.41*</td>
<td>.44**</td>
<td>.54**</td>
<td>0.41</td>
<td>0.15</td>
<td>.43**</td>
<td>.38*</td>
<td>0.21</td>
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<td>.50**</td>
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<td>0.27</td>
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<td>.35*</td>
<td>.69**</td>
<td>.53**</td>
<td>.52**</td>
<td>.63**</td>
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*Note: PsyCap = psychological capital. Work happiness = 22 item measure

* p < .05, **p < .01
Figure 5.3 Work happiness means and 95% confidence intervals at three time points, testing the interaction effect between selective exposure (culture ratings, CR) and confirmation bias (sentence stem completion, SS) on work happiness (WH).
Table 5.3

Regression coefficients for culture ratings, sentence stems, and an interaction variable of culture ratings and sentence stems, on work happiness across three measurement time-points.

<table>
<thead>
<tr>
<th></th>
<th>r</th>
<th>β</th>
<th>95% confidence interval</th>
<th>p</th>
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<tr>
<td>Culture ratings</td>
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<td>0.00</td>
<td>.001, .006</td>
<td>.008</td>
</tr>
<tr>
<td>Sentence stem</td>
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<td>-0.02</td>
<td>-.268, .234</td>
<td>.892</td>
</tr>
<tr>
<td>Interaction</td>
<td>0.08</td>
<td>0.00</td>
<td>-.008, .012</td>
<td>.633</td>
</tr>
<tr>
<td><strong>Work Happiness Time 2</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Culture ratings</td>
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<td>0.00</td>
<td>.000, .004</td>
<td>.071</td>
</tr>
<tr>
<td>Sentence stem</td>
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<td>0.16</td>
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<td>.045</td>
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<tr>
<td>Interaction</td>
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<td>0.01</td>
<td>-.004, .015</td>
<td>.257</td>
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<td><strong>Work Happiness Time 3</strong></td>
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<td>Culture ratings</td>
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<td>.000, .003</td>
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<td>Interaction</td>
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<td>0.00</td>
<td>-.007, .008</td>
<td>.870</td>
</tr>
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</table>

5.4 Discussion

The Inside-Out Outside-In (IO-OI) model suggests that factors both inside and outside of the employee support or hinder individual well-being (Williams, Kern & Waters, 2016b). To better understand when the inside and outside factors are supportive of one another versus in conflict, an understanding of mechanisms is needed. This intervention study examined selective exposure and confirmation bias as possible processes underlying associations between an inside factor (employee positive attitudes (PsyCap)), an outside factor (perception of organizational virtuousness (OV)), and work happiness. Results partially supported these mechanisms. PsyCap and culture ratings (used to conceptualize the selective exposure process) were significantly related across some time-points, but not all. Culture ratings and positive sentence stems (used to conceptualize the confirmation bias process) were related cross-sectionally but not over time. Further there was some evidence of a synergistic effect between selective exposure and confirmation bias processes.
5.4.1 The influence of selective exposure

Selective exposure is the process through which people avoid or reduce cognitive dissonance by choosing to focus on attitude-congruent information in their environment (Festinger, 1962). Based on the selective exposure process, we expected that respondents with more positive attitudes (operationalized as higher levels of PsyCap) would choose to focus on positive aspects of the organization environment and therefore evaluate the culture more positively within and over time. This was partially supported; higher ratings of PsyCap at baseline related to more positive culture ratings at time 2 and 3, but not cross-sectionally. Higher levels of PsyCap at times 2 and 3 were not associated with more positive culture ratings within or over time. The training intervention focused on developing PsyCap skills. The results suggest that for those that already have such skills, the training triggered a positive attitude cycle, resulting in them focusing on better qualities in the organization culture over time. For those beginning at a lower baseline, it may be that the positive attitudes had not developed to a level that a positive selective exposure process was triggered. This suggests that there may be a ‘tipping point’ in the strength of attitude present in order for the selective exposure process to begin. Future research should consider strength of attitude as an independent variable of interest.

It is recognized that operationalization rarely produces perfect reflections of constructs (Duckworth & Kern, 2011). Positive attitudes were operationalized as PsyCap (i.e., hope, efficacy, resilience and optimism), following the growing positive organizational behavior literature (e.g., Avey, Luthans, & Youssef, 2010; Toor & Ofori, 2010, Wright & Quick, 2009, Youssef & Luthans, 2011), and selective exposure was operationalized through ratings of the organization’s culture. It may be that, although it captures four elements, the PsyCap construct is too general to trigger the selective exposure process as operationalized in this study. For example, a person may have high levels of hope and still notice un-virtuous aspects of the organization culture such as indifference, without experiencing cognitive dissonance. As a result, there would be no need to activate the selective exposure process. Further, a recent critique of the methods of measuring selective exposure
suggests that, “differences in levels of specificity between initial preference measures and the information to be selected may have contributed to the somewhat conflicted findings in the literature” (Clay, Barber & Shook, 2013, p. 164), the result of which may be increased error variance. Future research should consider specifying initial attitudes and preferences closely in order to improve sensitivity to detecting selective exposure processes.

5.4.2 The Influence of confirmation bias

Confirmation bias influences people to seek out and assign more weight or validity to information that supports their current attitude (Wason, 1960). Based on this process, we expected that there would be a positive association between culture ratings and sentence stem valence, such that respondents who evaluated the organization culture more positively would also provide more positive sentence tails within and over time. This association was supported within time but not across time, which suggests that there is a temporal limit to the influence of confirmation bias. Much of the confirmation bias literature to date focuses on in-the-moment cross sectional timing in laboratory settings (for a review see Oswald & Grosjean, 2004). The influence of time as a factor in the process and the impact of real life settings have not been explored. Processes can occur at a micro level (within seconds and minutes) and at a macro level (over hours, days, or months). The cross-sectional associations in the results of the current study point to confirmation bias being a micro rather than a macro process when occurring in a field study context. We propose that this may be connected to the dynamic nature of attitudes. The formation of attitudes is considered a critical adaptive capacity; however of equal importance is that attitudes can be changed in light of new information and experiences (Bodenhausen & Gawronski, 2013). The purpose of the training intervention was to develop positive attitudes to trigger the selective exposure-confirmation bias processes. A defining feature of the confirmation bias process is that it is based on current attitudes; the cross sectional results support that this process is present. The results also suggest that the influence of the confirmation bias process does not extend to over longer time frames. As such organizations need to consider ways in which the confirmation bias process can be ‘re-triggered’
through the fostering of positive attitudes on a regular and on-going basis, in order for it to have a sustained impact on employee wellbeing. Further studies should investigate the temporal unfolding of confirmation bias, in both laboratory and field studies (Cialdini, 2009). Using Experience Sampling Methods might be beneficial in this regard.

5.4.3 The combined impact of selective exposure and confirmation bias

We expected that those respondents who evaluate the organization culture more positively and who provide more positive sentence tails would have higher levels of work happiness. This was partially supported. Mean comparisons for four groups based on tertile splits of culture ratings (CR) and sentence stems (SS) at each time point showed some evidence of a synergistic effect at times 2 and 3. The processes of selective exposure and confirmation bias each influence the attention and weight individuals give to positive behaviors and practices in the organization environment. Together, they may create a dynamic positive cycle that influences employee perception and evaluation of the organization environment, which has been shown to influence their work happiness (Williams, Kern & Waters, 2015). Regression analyses did not find a relationship between work happiness and the interaction between culture ratings and sentence stems. The sample size was small, limiting the power to find such an effect, which most likely is small in magnitude, as many factors influence a person’s happiness (Diener & Ryan, 2009). In addition, the timing of measurement time-point 1 may have influenced results, as the participants had just returned from a 7 week break from work (during the school summer holidays), and therefore had not been in a work environment. As such, there may not have been strong ‘current attitudes’ with which the selective exposure and confirmation bias processes could work. Future work should further examine synergistic relationships with large samples, and consider how the timing of assessments and interventions may impact responses.

5.5 Study Limitations and Strengths

The results of this study need to be considered within a number of limitations. First, validated measures of selective exposure and confirmation bias in the organizational environment
do not exist and so the measures used in the study were developed by the authors. As such, full validation of the measures is needed. Further, the placement of these measures next to each other in the survey battery may have led to priming effect from the selective exposure to the confirmation bias measure. As such, common method bias cannot be ruled out. The outcome variable was based on Fisher’s (2010) model of work happiness which does not currently have a single validated measure for the three inter-related domains proposed by the model. Therefore, the current study refined a measure from previous research (Williams et al., 2015), which combined three psychometrically validated measures of commitment, engagement and satisfaction, but further testing of Fisher’s model is needed. Third, the sample size was small, which limited the analyses possible. Finally, the study was conducted with employees who work in a school, which may not be generalizable to workers from other sectors.

The study also has a number of strengths. The study extends theoretical knowledge by refining a measure of Fisher’s (2010) model of work happiness. It is the first study to apply the theory of selective exposure and confirmation bias to explain associations between positive employee attitudes (PsyCap), perception of virtues in the organization culture (OV) and levels of work happiness. It is also the first study to test the theory in a field-based setting. In doing so it answers the call for researchers to understand more about the underlying mechanisms of positive psychology interventions (Lyubomirsky & Layous, 2013).

5.6 Conclusion

Organizations are recognizing the importance of human capital in gaining long-term competitive advantage and the role that employee work happiness plays in supporting positive employee outcomes. As such, ways in which to develop employee wellbeing has become an important area of focus in positive organizational research. Understanding the processes that underlie changes in work happiness in real-life settings supports the development of effective interventions to build and support employee wellbeing. We hope that this line of research continues to be given attention in future organizational research practice.
Chapter 6 Overview:
This chapter (published in *Frontiers in Psychology*) uses a sub-set of the data used in Chapter 5 to examine the iterative reprocessing model (IRM) of attitudes (Cunningham et al., 2007) in explaining associations between employee positive attitudes (psychological capital, PsyCap), positive organization culture (perception of virtues in the organization culture, OV), and work happiness. Results suggest that employee PsyCap, OV, and work happiness are associated through both implicit and explicit attitudes and that the IRM of attitude development provides some insight to the explanatory mechanisms for the associations.
Chapter 6

Study 3: 
*The Role and Reprocessing of Attitudes in Developing Work Happiness: An Intervention Study*


**Abstract**

This intervention study examines the iterative reprocessing of explicit and implicit attitudes as the process underlying associations between positive employee attitudes (PsyCap), perception of positive organization culture (organizational virtuousness, OV), and work happiness. Using a quasi-experimental design, a group of school staff (N=69) completed surveys at three time points. After the first assessment, the treatment group (n=51) completed a positive psychology training intervention. Results suggest that employee PsyCap, OV, and work happiness are associated with one another through both implicit and explicit attitudes. Further, the Iterative-Reprocessing Model of attitudes (IRM) provides some insights into the processes underlying these associations.

By examining the role and processes through which explicit and implicit attitudes relate to wellbeing at work, the study integrates theories on attitudes, positive organizational scholarship, positive organizational behavior and positive education. It is one of the first studies to apply the theory of the IRM to explain associations amongst PsyCap, OV and work happiness, and to test the IRM theory in a field-based setting. In applying attitude theory to wellbeing research, this study provides insights to mechanisms underlying workplace wellbeing that have not been previously examined and in doing so responds to calls for researchers to learn more about the mechanisms underlying wellbeing interventions. Further, it highlights the need to understand subconscious processes in future wellbeing research and to include implicit measures in positive psychology interventions measurement programs. Practically, this research calls attention to the importance of developing both the positive attitudes of employees and the organizational culture in developing employee work happiness.
6.1 Introduction

A growing body of research that applies positive psychology (PP) to the organizational context has focused on individual and organizational factors that influence employee wellbeing at work. As a whole, studies suggest that employee subjective wellbeing has a positive impact on both employees and organizations. For employees, wellbeing has been related to their levels of engagement (Harter, Schmidt & Keyes, 2003), organizational citizenship behaviors (LePine, Erex & Jonson, 2002) relationships at work (Waters & Stokes, 2015), job satisfaction and commitment (Kern et al., 2015) and overall career success (Boehm and Lyubomirsky, 2008). For organizations, employee wellbeing is linked with greater customer satisfaction, productivity, presenteeism, and effort at work, and with less voluntary turnover, absenteeism, compensation claims, and sick days (e.g., Giardini & Frese, 2008; Keyes, 2005; Price Waterhouse Coopers, 2014; Wright & Bonett, 2007). Further, there is a growing expectation from employees that organizations will take an active role in supporting their wellbeing, and this has become an important point of competitive advantage for many organizations in the employment market (Martin et al., 2005).

The question becomes what can organizations do to promote the wellbeing of their employees? The Inside-Out Outside-In model (IO-OI) (Williams, Kern & Waters, 2016a) proposes that factors “inside” the employee (e.g., internal attitudes) and factors “outside” the employee (e.g., organizational culture) influence work happiness, which is defined by Fisher (2010) as employees’ perspectives on their engagement with work, commitment to the organization, and job satisfaction. (For a full discussion on this model of work happiness, see Williams et al., 2016a).

Evidence suggests that reciprocal and synergistic associations exist between positive employee attitudes (PsyCap), perception of organizational culture (organizational virtuousness, OV) and work happiness (Williams, Kern, & Waters, 2015). However, less is understood about mechanisms that underpin these relationships. Previous research has found some support for the processes of selective exposure and confirmation bias as underlying mechanisms for these associations (Williams et al., 2016a). The purpose of the current study is to explore the iterative
reprocessing of attitudes as a possible underlying mechanism. In doing so, this study is the first to apply attitude theory and change models to understanding the mechanisms that underly workplace wellbeing and responds to calls for researchers to learn more about the mechanisms underlying PP interventions (Lyubomirsky & Layous, 2013).

This paper will first provide a brief overview of the Inside-out Outside-in model (Williams et al., 2016b); it will then look more closely at positive employee attitudes and propose a framework for examining positive attitudes at work. Next it will examine the stability and consciousness levels of attitudes and explore the Iterative-Reprocessing Model (IRM) of attitudes as an underlying mechanism through which work happiness is developed. Finally, the results of the study will be presented and discussed and implications for practice and future research will be highlighted.

6.1.1 The Inside-out Outside-in model

The Inside-out Outside-in (IO-OI) model (Williams, Kern, & Waters, 2016b) is a dual approach process model that proposes that work happiness is influenced by factors “inside” the employee and factors “outside” of the employee (see Figure 1). Factors “inside” the employee are those that influence an employee’s experience of work, but cannot be separated from the individual, for example attitudes, values, beliefs, emotions, and behaviors. Factors “outside” the employee are those that influence an employee’s experience of work but that are discrete from the individual, e.g. organizational culture, job characteristics, manager/ supervisor and the physical work environment. Interventions, then, might target factors “inside” individual employees, with effects ideally rippling across the organization (an inside-out approach), or might target factors “outside”, in the organization, with effects trickling down to impact the employees (an outside-in approach). For example, an “inside-out” approach might involve a positive employee development program that aims to develop positive employee attitudes to improve the employee’s experience of work and increase their workplace wellbeing (see Figure 1). In contrast, an “outside-in” approach might use positive organizational strategies and practices, with the aim to develop a positive cultural environment in which employees’ work (see Figure 1). Thus, it is the locus of the target of the
change initiative that determines whether the approach taken is “inside-out” or “outside-in” (Williams et al., 2016b).

![Diagram of the inside-out Outside-in (IO-OI) Model](image)

**Figure 6.1.** The inside-out Outside-in (IO-OI) Model: a dual approach process model to developing work happiness (adapted from Williams, Kern & Waters, 2016b)

### 6.1.2 Employee positive attitudes

Attitudes have been defined in various ways. Allport (1935) defines them as “mental and neural state of readiness” (p. 810), Eagly and Chaiken, (1993) suggest that they are “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (p.1) and Bohner and Dickel (2011) propose they are “the evaluation of an object of thought” (p. 392). Attitudes can be positive (e.g., optimistic, hopeful) or negative (e.g., pessimistic, despairing). The focus in this study is the development and influence of positive attitudes, which are defined as “a positive evaluation of an object of thought” (Williams, et al., 2016b). Positive attitudes of employees may support them in making positive evaluations about their job role, the behaviors of managers and colleagues and the organization culture, which may in turn influence their levels of work happiness (Williams et al., 2016b).
Studies of positive work attitudes have traditionally examined employee attitudes towards work (e.g. engagement, satisfaction, commitment). In such cases, the employee is required to make an evaluation about aspects of their work to create the attitude. For example, an employee may feel engaged with their work when they assess that they feel proud and happy in their role. We suggest that in addition to positive attitudes towards work, employees may also have positive attitudes at work, which are not specifically related towards their work, e.g. an employee with an optimistic attitude has positive expectations about the future (Williams, et al., 2016a). We further suggest that employee positive attitudes at work may support more positive attitudes towards their work (Williams, et al., 2016b). For example, an employee with a hopeful attitude may feel more satisfied with their job because they are making progress towards their work goals.

For the purposes of this study, positive attitudes are conceptualized as psychological capital (PsyCap, Luthans, Youssef & Avolio, 2006). In the positive organizational literature, PsyCap has been identified as a state of positive psychological development comprising four elements: hope, optimism, self-efficacy, and resilience (Luthans, Youssef, & Avolio, 2006). Evidence suggests that these four elements synergistically lead to higher performance in the workplace than any of the elements individually (Avey et al., 2011; Newman et al., 2014; Luthans, Youssef-Morgan & Avolio, 2015). PsyCap is proposed to be a ‘resource bank’ that enables individuals to succeed in multiple life domains, including work, relationships and health (Hobfoll, 2002). Williams, Kern, and Waters (2016a) propose that PsyCap may also be considered a set of attitudes, due to a number of common processes and mechanisms between the two, including the cognitive, affective and conative processes through which PsyCap influences wellbeing (Luthans et al., 2010; Youssef-Morgan & Luthans, 2014).

From this perspective, PsyCap provides an evidence-based framework that organizations can use to support organization members to develop four specific positive attitudes. A hopeful attitude is one where organization members have high levels of agency (goal-directed energy) and can generate pathways and plans to meet their goals (Snyder et al., 1996). An optimistic attitude
comprises a positive expectation about the future (Scheier & Carver, 1985). A self-efficacious attitude involves “a conviction/confidence about one’s abilities to mobilize the motivation, cognitive resources, or courses of action needed to successfully complete one’s tasks and responsibilities” (Stajkovic & Luthans, 1998, p.66). A resilient attitude is demonstrated through “positive adaptation in the context of significant adversity or risk” (Masten & Reed, 2002, p. 74).

Further supporting their conceptualization as attitudes, the four elements of PsyCap have been found to be open to change (Youssef & Luthans, 2007). Work-based PsyCap interventions have been shown to significantly increase attitudes of hope, optimism, efficacy, and resilience in organizational members (e.g., Luthans, Avey, & Patera, 2008; Luthans et al., 2010). For example, Luthans et al. (2006) developed a series of micro PsyCap interventions lasting from 1 to 3 hours and found that PsyCap significantly increased by three percent. As such, PsyCap is a valid model for organizations to use when developing positive attitudes in employees.

6.1.3 Attitude stability

There are different views regarding the stability of attitudes over time. Some models, such as MODE (Motivation and Opportunity as Determinants, Fazio, 2007) and the meta-cognitive model, (MCM; Petty, Brinol, & DeMarree, 2007), propose that attitudes are stored in long-term memory and are stable over time. Other models (e.g., Schwarz, 2007; Associative-Propositional Evaluation Model, APE, Gawronksi & Bodenhausen, 2007), suggest that attitudes are formed in ‘real time’, and as such, are impacted by the situational context and whatever information is accessible at that time. A third perspective combines these perspectives, suggesting that “current evaluations are constructed from relatively stable attitude representations” (Cunningham & Zelazo., 2007, p. 736). Together, these viewpoints suggest that research should take a more nuanced view of the stable versus context-driven features of attitudes (Bohner & Dickel, 2011). The current study answers this call by examining the relationship between ‘real time’ attitudes developed through training with more stable attitudes related to employee perceptions of organizational culture.
6.1.4 Implicit versus explicit attitudes

There is also evidence that attitudes operate at different levels of consciousness. *Explicit attitudes* are formed by individuals engaging in conscious reflection of factors that influence their evaluations and decisions. However, several studies have illustrated the limited accuracy of conscious reflection, as people have difficulty identifying what factors actually influence their attitudes and decisions (Nisbett & Wilson, 1977; Wilson, 2002). *Implicit attitudes* operate outside of an individual’s full awareness and control. Although not easily reached through reflection, implicit attitudes have been shown to have powerful effects on behavior (Kay Wheeler, Bargh, & Ross, 2004; Shantz & Latham, 2009). Implicit positive perceptions of others are associated with higher levels of organizational satisfaction, less cynicism, greater identification with their organization, and more positive peer-ratings of personality and popularity (Wood, Harms, and Vazire, 2010).

The cognitive processes underlying implicit and explicit attitudes may differ. Work by Fazio and Olson (2003) and Gawronski and Strack (2004) support the idea of a dual processing model of explicit and implicit cognition, in which the processes operate independently yet in parallel. These and other studies have shown that implicit processes are far less influenced by cognitive and motivational factors such as social desirability and evaluation than explicit cognitions (Roberts, Harms, Smith, Wood, and Webb, 2006). Neurological research using functional magnetic resonance imaging provides further evidence for the dual processing model, by showing that implicit cognitions are processed in areas of the brain associated with automatic somatic and affective systems whereas explicit cognitions are processed in areas associated with deliberation and executive control (Lieberman, 2007).

Implicit processes are thought to be slow learning, in that they need a number of experiences to produce an aggregate knowledge base (McClelland, McNaughton, and O’Reilly, 1995), but fast acting, in that processing takes place in parallel and in millisecond cycles (Lord, Diefendorff, Schmidt, and Hall, 2010) and so require less cognitive resources to function. Given the knowledge-based, high-cognitive load work that dominates many 21st century organizations, it is
likely that implicit processing is extensive in organizational life (Johnson and Steinman, 2009). This has led to calls for research to examine “how people’s explicit attitudes towards a company change through preceding shifts in implicit cognitions” (Uhlmann et al., 2012, p. 588). Further, implicit psychological constructs have been associated with a range of important organizational outcomes (Schultheiss, 2008) and specifically, implicit positive perceptions of others are associated with higher levels of organizational satisfaction in employees and greater identification with their organization, (Wood, Harms and Vazire, 2010). The current study examines the influence of implicit positive perceptions of organization culture and as such includes measures of both implicit and explicit perceptions of virtues in the organization culture (OV).

6.1.5 Attitude development

The Iterative-Reprocessing Model (IRM; Cunningham & Zelazo, 2007; Van Bavel, Xiao, & Cunningham, 2012) suggests that reflective processes play an important role in evaluation and attitude development. According to this model, objects of thought trigger an evaluative cycle through which lower-order, automatic (implicit) stored evaluations influence and are influenced by higher-order, reflective (explicit) real-time processes (see Figure 2). This cycle leads to a dynamic evaluation of attitude objects drawing on associations stored in memory and current information. As such, evaluation is the current processing state of the whole evaluative system, which is influenced by those elements of the stored attitude that are currently active and by the level of reflective real-time processing that takes place. Thus, in contrast to other models (Fazio & Olson, 2003; Gawronski & Strack, 2004), the IRM suggests that implicit and explicit cognitive and affective processes work in constant collaboration rather than as separate parallel systems. Further, the model proposes that the context, motivational state, and evaluative processes experienced immediately prior – known as the “pre-appraisal process” - also influences the evaluation process (see Figure 2). Each iterative cycle of evaluation is influenced by new contextual or motivational information, which creates a new evaluation of the attitude that considers finer attitude-object detail, the context and/or current goals (see Figure 2).
The number of times an attitude object goes through the iterative process depends on personal and situational variables such as cognitive ability, motivation, and opportunity (Fazio, 1990). Therefore, evaluations may be formed very quickly and remain stable for a time, or they may go through many iterative cycles over a long period of time and be continually altered and updated. Increasing reflective processes in individuals enables the more nuanced and/or goal congruent evaluations needed to navigate complex environments, self-regulate, and appraise abstract concepts such as virtues in the organization culture (Van Bavel, Xiao, & Cunningham, 2012). For example, consider the IRM process in a work context to explain how attitudes around a performance review can evolve. An employee has their annual performance review. Based on past experiences, their stored attitude associated with performance reviews is that they are negative, stressful experiences. However, in this specific situation, their manager adopts a positive, strengths-based approach to the performance review. The employee obtains feedback to improve their work, and the review has become less stressful. The actions of the manager create a change in context which means that a general attitude about reviews (that they are negative and stressful) and becomes more specific (reviews can be less stressful if approached in a positive way). Hence, while the automatic, stored (implicit) attitudes help to make quick assessments, these attitudes are dynamic and can be altered.
when the context or goals change through the influence of reflective (explicit) real-time processes. As such, the IRM suggests that there may be similar patterns for explicit and implicit evaluations, an assertion that is tested in the current study.

6.1.6 The current study

Applying the IRM within the IO-OI framework, we propose that positive employee development through training can develop positive attitudes in employees (such as PsyCap) (see Figure 1) which may trigger the iterative evaluation cycle (see Figure 2). Theoretically, training to develop PsyCap may provide organizational members with new goals and contextual information that enables them to develop increasingly positive attitudes – both explicit and implicit. These positive explicit and implicit attitudes may in turn support a positive pre-appraisal process (see Figure 2) which enables employees to see virtuous contextual and motivational cues in their organizational environment, thus increasing their perception of positive organizational culture and levels of work happiness (see Figure 1). This leads to hypotheses 1 and 2:

**H1:** Explicit attitudes of PsyCap and OV will be positively associated with work happiness. Specifically, a) employee explicit PsyCap will be positively correlated with explicit OV, such that higher levels of PsyCap contribute to seeing more virtue in the organization culture, and greater virtue in the organization culture contributes to individual-level PsyCap. And b) explicit PsyCap and explicit OV will be independently correlated with greater employee work happiness, both cross-sectionally and prospectively.

**H2:** Implicit attitudes of PsyCap and OV will be positively associated with work happiness. Specifically, a) employee implicit PsyCap will be positively correlated with implicit OV, such that higher levels of implicit PsyCap contribute to seeing more virtue in the organization culture, and implicit OV contributes to implicit PsyCap. Further, b) implicit PsyCap and implicit OV will be independently correlated with greater employee work happiness, both cross-sectionally and prospectively.
We further propose that the positive pre-appraisal process may lead to positive cycles of evaluation, as positive individual attitudes (PsyCap) are supported and reinforced by positive context and motivational cues in the organizational environment (OV), reflecting the iterative cycle of attitude development (Figure 2). This positive spiral may in turn lead to higher levels of employee happiness at work. Equally, it is surmised that the iterative process can work in a negative cycle, such that when the positive pre-appraisal process enabled through the development of specific positive attitudes (PsyCap) is not supported and reinforced by positive context and motivational cues in the organizational environment (OV), employee work happiness decreases. This leads to hypothesis 3:

\[ H3: \text{Reflecting the positive spiral of the IRM process as shown in figure 2, work happiness will be higher when positive PsyCap attitudes are supported by a positive evaluation of the organization environment (OV) than when they are not.} \]

Finally, the IRM argues that implicit and explicit processes work in collaboration rather than as separate systems; as such explicit and implicit attitudes would reflect similar changes over time. We test this through hypothesis 4:

\[ H4: \text{Based on the IRM, implicit and explicit evaluations will have similar patterns of change over time.} \]

In this quasi-experimental study, 69 school staff members completed questionnaires at three time points (pre-intervention, immediately post intervention, 8 weeks post intervention). After the first assessment, 51 of the staff members completed a training program that focused on developing PsyCap, with the remaining staff members constituting a control group. Williams, et al., (2016a) found that the intervention successfully developed PsyCap (positive employee attitudes in Figure 1). The current study focuses on the 51 employees who completed the training (i.e., the intervention group) to examine underlying processes to foster work happiness and specifically, whether through the development of implicit and explicit positive attitudes (PsyCap), the iterative reprocessing of attitudes was triggered.
6.2 Method

6.2.1 Participants

A group of 51 employees (27 female, 24 male) of a large independent school in Victoria, Australia participated in this study; 27 were members of teaching staff (15 female, 12 male) and 24 were employed in non-teaching roles (12 female, 12 male). All 51 participants in the intervention group completed the questionnaire at time 1 and 2; 38 (73%) completed it at time 3. Participants were primarily between 35 and 64 years of age (25-34: $n = 3$, 35-44: $n = 12$, 45-54: $n = 15$, 55-64: $n = 17$, 65+: $n = 4$). There were no significant differences between those who completed all three time points versus those missing at time 3 in terms of demographics (age, gender, role in school, hours worked, tenure status) or in terms of time 1 implicit and explicit PsyCap, OV, or work happiness.

6.2.2 Measures

Participants completed a survey, which combined pre-established scales measuring implicit and explicit PsyCap, employee perception of the virtues present in the organization (OV), and employee work happiness. At time points 1 and 2 the survey was completed by pen and paper and the results were input by the researcher. At time-point 3 the survey was completed on-line. A measure for implicit OV developed by the authors was also in the survey battery.

PsyCap. Explicit attitudes of PsyCap were measured through the 24-item self-rated PsyCap Questionnaire (PCQ; Luthans, Avolio, & Avey, 2007), which has been tested in a variety of samples, including service, manufacturing, high-tech, military, and education sectors and across national cultural settings. In the PCQ, the four factors (hope, optimism, resilience, and self-efficacy) are measured by six items each, which were adapted from other scales. Example items include: “There are lots of ways around any problem” (hope); “When things are uncertain for me at work, I usually expect the best” (optimism); “I usually take stressful things at work in stride” (resilience); and “I feel confident presenting information to a group of colleagues” (self-efficacy). Items were scored on a 6-point Likert scale from “strongly disagree” (1) to “strongly agree” (6), and were averaged together to represent the individual’s level of PsyCap (24 items, Cronbach’s $\alpha_{t1} = .89$, $\alpha_{t2} = .85$, $\alpha_{t3} = .88$).
Implicit attitudes of PsyCap were measured using the I-PCQ (Harms & Luthans, 2012), which uses a semi-projective technique with written prompts followed by short questions. To elicit implicit attitudes related to PsyCap, respondents were presented with three situational prompts and asked to imagine stories relating to the prompt about a fictional character (not themselves). They were then asked to respond to construct-targeted questions about the stories they generated. The three prompts were based in an organizational context with one presenting a positive experience (i.e., “Someone has a new job”), one a negative experience (i.e., “Someone makes a mistake at work”), and the third an ambiguous experience (i.e., “Someone talks to their supervisor”). Harms and Luthans (2012) propose that the ambiguous prompt is similar to the Rorschach Ink-Blot Test (Rorschach, 1921) in that it is particularly open to interpretation and projection by the respondent.

For each of the stories, participants indicated on a 7-point Likert scale how much each PsyCap factor represents the character (-3 = the opposite is very true of this character, 0 = irrelevant thought/feeling for this character, and +3 = very true of this character). The four factors of PsyCap were assessed as follows: “believing that they can accomplish their goal” (hope); “expecting good things to happen in the future” (optimism); “believing that they can bounce back from any setbacks that have occurred” (resilience); and “feeling confident and self-assured in their ability” (self-efficacy). Each prompt also included four filler items to help disguise the intent of the measure. The 12 items (the four PsyCap questions across the three stories) were averaged together to represent an overall Implicit PsyCap score ($\alpha_{t1} = .88$, $\alpha_{t2} = .93$, $\alpha_{t3} = .91$).

**Organizational Virtuousness (OV).** The Organizational Virtuousness Scale (Cameron, Bright, & Caza, 2004) was used to measure explicit OV. Work by Cameron et al., (2004) resulted in a five factor model which suggests that organizational virtuousness (OV) comprises: 1) organizational forgiveness, 2) organizational trust, 3) organizational integrity, 4) organizational optimism, and 5) organizational compassion. Items included: “we try to learn from our mistakes here, consequently missteps are quickly forgiven” (forgiveness); “people trust the leadership of this organization” (trust); “this organization demonstrates the highest levels of integrity” (integrity); “we are optimistic
that we will succeed, even when faced with major challenges” (optimism); and “this organization is characterized by many acts of caring and concern for other people” (compassion). Each of the 15 items was scored on a 6-point Likert scale from “strongly disagree” (1) to “strongly agree” (6), with higher scores indicating a greater perceived presence of that dimension of OV. The items were averaged together to represent an individual’s explicit OV score (15 items, \( \alpha_{t1} = .96, \alpha_{t2} = .93, \alpha_{t3} = .95 \)).

While there is an existing measure of implicit PsyCap (I-PCQ) attitudes, there is not an existing measure of implicit attitudes of OV. We sought advice from Peter Harms (co-author of the I-PCQ) to construct an implicit OV measure. Using the three prompts from the I-PCQ, the existing measure was extended to include 10 items from the explicit organizational virtuousness scale (Cameron et al., 2004). For each of the stories, the five factors of OV were assessed by two items, such as “we forgive mistakes when they are acknowledged and corrected” (forgiveness) and “honesty and trustworthiness are hallmarks of this workplace” (trust). The 10 items across the three prompts were averaged together to represent an individual’s implicit OV (30 items, \( \alpha_{t1} = .96, \alpha_{t2} = .98, \alpha_{t3} = .97 \)). Information regarding the development and initial psychometric testing for the implicit OV measure is provided in the Supplementary Materials. (For thesis purposes this information is provided in Chapter 3, p.58)

**Work Happiness.** Work happiness was defined using Fisher’s (2010) model comprising 1) engagement with the work itself; 2) satisfaction with the job, including contextual features such as pay, co-workers, supervision, and environment; and 3) feelings of affective commitment to the organization as a whole. As a single existing measure of this model does not currently exist, three scales were used to represent these three factors. Engagement with work was measured using the 9-item Utrecht Work Engagement Scale (UWES-9; Schaufeli & Bakkar, 2003). Job satisfaction was measured with the 8-item Job in General Scale (JIG; Russell et al., 2004). Affective commitment to the organization was measured using a 9-item positively phrased version of the 15-item Organizational Commitment Scale (Mowday et al., 1979). Williams, Kern & Waters, (2016) conducted
a preliminary psychometric test of these scales in representing Fisher’s model (N=330) using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Based on the results of the EFA and reliability analyses four items were removed from the battery, resulting in a final measure of 22 items, which were used here (α_{t1} = .95, α_{t2} = .86, α_{t3} = .91).

6.2.3 Procedure

Participants completed a three-day training course, which comprised approximately six hours training contact time. Training materials were delivered via a mix of lecture and small group (2-4 people) activities, within groups of approximately 14-16 individuals. Each group was facilitated by two trainers, both of whom had received specialist training from the program authors to deliver the training materials. The program was based on materials developed by staff at the University of Pennsylvania’s Positive Psychology Center and draws from the relevant theories and research underpinning the four elements of PsyCap. Examples from the training include: 1) participants are taught how to dispute negative thinking patterns with more optimistic perspectives, to foster optimism and hope; 2) participants learn about the ABC Model of cognitive behavioral therapy (Ellis, 1957) and how to identify deeply held beliefs that may be driving unhelpful thought patterns and behaviors to build resilience; and 3) at the end of each topic, participants identify how they could use the skill or knowledge taught in their personal and professional lives to build efficacy.

Participants were invited to complete a questionnaire at three time points: prior to day one of the training intervention (time 1), at the end of the final day of the intervention (time 2), and eight weeks after the intervention ended (time 3). Completion of the survey was voluntary, which was outlined in a plain language statement provided to participants at time 1 and reinforced in the verbal preamble given by the researcher prior to the first survey. Before completing the survey at time 1, participants created a unique user name, which they used to complete the surveys again at times 2 and 3. This ensured anonymity whilst enabling the marrying of results across the three measurement occasions. The University of Melbourne’s ethics review board approved all procedures.
The survey was available in hard copy at times 1 and 2. The responses were subsequently inputted manually by the researcher. At time 3 the survey was available online via the independent survey hosting website Survey Monkey (www.surveymonkey.com.au) and a link to the survey was sent to the participants via the research site’s email system. The survey was available for a period of 10 days. Regular reminders, via email and verbal announcements at daily staff briefings were made by the researcher throughout that time to encourage participation.

6.2.4 Data analysis

Descriptive statistics and correlations were used to examine associations among explicit PsyCap, explicit OV, and work happiness across the three time points (hypotheses H1\textsubscript{a} and H1\textsubscript{b}). This was then repeated for implicit PsyCap, implicit OV, and work happiness (H2\textsubscript{a} and H2\textsubscript{b}).

Hypothesis 3 predicted that work happiness at time 3 (after the IRM process has time to work) would be highest when positive attitudes (PsyCap) are supported by perception of virtuousness in the organization culture (OV). Beginning with the explicit measures, participants who increased from time 2 to time 3 on both PsyCap and OV were coded as 1, and participants who decreased/stayed the same on one or both variables were coded as 0. This was repeated with the implicit measures. The mean work happiness levels at time 3 for the two groups were then compared using standardized t-tests.

Finally, based on the IRM, hypothesis 4 predicted that explicit and implicit attitudes of PsyCap and OV would follow the same pattern over time. Following the principles outlined by Barnes et al. (2012), a trend analysis was conducted for participants’ levels of explicit and implicit PsyCap and OV. Specifically, for the four variables (explicit and implicit PsyCap and explicit and implicit OV), time 2 values were regressed on time 1 values, and time 3 values were regressed on time 2, using standard linear regression. Significantly positive beta weights indicate an increase from one time point to the next, and were coded as +1. Significantly negative beta weights indicate a decrease and were coded as -1. Non-significant changes were coded as 0. Then, a variable was created to indicate whether the pattern was the same for explicit and implicit variables (coded 1), or different (coded 0). For
instance, if a participant increased from time 1 to time 2 and decreased from time 2 to time 3 on both the implicit and explicit PsyCap measures, they were coded as 1 for the final variable. A participant who increased then decreased on explicit PsyCap but increased and increased on implicit PsyCap was coded as 0. This coding was repeated for OV. An independent samples chi square tested whether there were a greater number of participants with the same pattern versus those with a different pattern.

6.3 Results

6.3.1 Associations among psychological capital (PsyCap), organizational virtuousness (OV), and work happiness

Table 1 shows the means, standard deviations, and correlations amongst explicit PsyCap, implicit PsyCap, explicit OV, implicit OV, and work happiness, within and across the three measurement occasions. Supporting H1a, explicit PsyCap and OV were strongly positively correlated with one another, both cross-sectionally and over time, such that individuals with greater PsyCap perceived greater OV in the organization, and vice versa. Partially supporting H1b, explicit OV was strongly and significantly correlated with work happiness cross-sectionally and over time. Explicit PsyCap was significantly correlated with work happiness cross-sectionally, but was not significantly prospectively related to work happiness. H2a was partially supported; correlations between implicit PsyCap and implicit OV were significant and positively associated within time but not prospectively. For example, correlation between time 2 implicit PsyCap and implicit OV was $r = .91$, whereas the correlation between time 2 implicit PsyCap and time 3 implicit OV was $r = .13$. In partial support of H2b, the associations between implicit PsyCap, implicit OV and work happiness within time were significantly positive at time 1 and time 3, but were not significant at time 2. Across time, implicit PsyCap, implicit OV, and work happiness were decreasingly correlated with one another.

6.3.2 The impact of positive PsyCap and OV attitudes on work happiness

Hypothesis 3 predicted that work happiness would be higher when positive PsyCap attitudes are supported by a positive evaluation of the organization environment (OV) than when they are not;
Table 6.1
Means, standard deviations and correlations for explicit and implicit PsyCap, explicit and implicit organizational virtuousness (OV) and work happiness within and across three measurement time-points.

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>12</th>
<th>13</th>
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<td>51</td>
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<td>1.00</td>
<td></td>
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<tr>
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<td>.83**</td>
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<td>6 Explicit PsyCap Time 2</td>
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<td>.25</td>
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<td>.02</td>
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<td>-.05</td>
<td>.54**</td>
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<td>.33*</td>
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<td>0.71</td>
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<td>.22</td>
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<td>1.00</td>
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<td>0.47</td>
<td>.14</td>
<td>.20</td>
<td>.50**</td>
<td>.03</td>
<td>.359*</td>
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<td>.46**</td>
<td>.33*</td>
<td>.50**</td>
<td>.47**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: PsyCap = psychological capital, OV = organizational virtuousness. Work happiness is the average standardized scores on job satisfaction, engagement, and commitment, with a constant added to eliminate negative values.

* p < .05, **p < .01
this was partially supported. For the explicit measures, four participants (11%) increased in PsyCap and OV from time 2 to time 3, and 33 participants (89%) decreased in one or both variables. For the implicit measures, 13 participants (34%) increased in both implicit PsyCap and implicit OV from time 2 to time 3 and 25 (66%) decreased or stayed the same in one or both measures. The increase group had higher levels of work happiness than the decrease group for both the explicit measures (increase: $M = 0.96$, $SD = .01$; decrease: $M = 0.93$, $SD = .07$) and for the implicit measures (increase: $M = 0.95$, $SD = .05$; decrease: $M = 0.93$, $SD = .08$), although the difference was not statistically significant (explicit: $t(35) = .79$, $p = .08$; implicit: $t(36) = .97$, $p = .16$).

6.3.3 Patterns of change in implicit and explicit attitudes

Finally, Hypothesis 4 predicted that implicit and explicit evaluations would have similar patterns of change over time. Table 2 shows the results of regressing each variable on the prior time point. On average, there were significant increases across the two time points in both explicit PsyCap and explicit OV, with no significant change in the implicit measures. Although the $\beta^2$ was significant (PsyCap: $\beta^2(1) = 5.45$, $p = .02$; or OV: $\beta^2(1) = 6.81$, $p = .009$), an examination of the pattern of results showed an opposite pattern, with a greater number of individuals having different patterns of change than the same. Only 18 participants had the same patterns of change for implicit and explicit PsyCap, and only 17 participants had the same patterns of change for implicit and explicit OV. Thus hypothesis 4 was not supported.
Table 6.2.

Number of participants who increased /decreased in implicit and explicit PsyCap and OV from Time 1 to Time 2 and Time 2 to Time 3.

<table>
<thead>
<tr>
<th></th>
<th>Time 1 - Time 2</th>
<th>Time 2 – Time 3</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>N</td>
<td>incr</td>
</tr>
<tr>
<td>PsyCap</td>
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<td></td>
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<td>Explicit</td>
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<td>37</td>
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<tr>
<td>Implicit</td>
<td>51</td>
<td>35</td>
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<tr>
<td>OV</td>
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<tr>
<td>Explicit</td>
<td>46</td>
<td>38</td>
</tr>
<tr>
<td>Implicit</td>
<td>51</td>
<td>37</td>
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</tbody>
</table>

Note. PsyCap = psychological capital, OV = organizational virtue, incr. = number whose score increased across the time period, decr. = number whose score decreased across the time period, SE = standard error.

* p < .05, ** p < .01

6.4 Discussion

This study examined the Iterative-Reprocessing Model (IRM) of evaluation as a process underlying the associations between positive employee attitudes (PsyCap), perception of positive organization culture (OV), and work happiness. Notably, employee PsyCap, OV and work happiness were associated through implicit and explicit evaluation processes. This supports the call for examination of non-conscious processes such as implicit attitudes in organizational research (Latham, Stajkovic, and Locke, 2010). Results also suggest that the IRM is a promising model for future researchers seeking to understand associations amongst inside factors and outside factors that influence employee work happiness. Moreover, they provide additional support that both inside-out and outside-in factors influence work happiness, that increased PsyCap enables employees to evaluate virtues in their work environment more easily (Williams et al., 2015) and for the dual intervention approach proposed by the IO-OI model (Williams et al., 2016b). Practically, this research highlights the value of fostering positive employee attitudes at work as well as positive attitudes towards work to foster work happiness and emphasizes the
need for outcomes from positive employee development programs to be supported and reinforced by organizational culture.

6.4.1 Inside and Outside predictors of work happiness

The IO-OI model suggests that factors both inside and outside employees impact their well-being. In the current study, inside and outside factors were operationalized as PsyCap and OV, respectively. Within and across time, PsyCap and OV were positively associated with one another. As expected, OV correlated with work happiness cross-sectionally and over time. However, PsyCap was only correlated with work happiness at time 3.

The timing of the intervention on the work calendar may provide insight into the lack of association between work happiness and PsyCap until the final assessment. Williams, et al. (2015) propose that PsyCap attitudes enable and support employee work happiness as it provides them with the personal resources to perform well in their work role. However, the training intervention was held at the end of an extended holiday period, such that prior to time 1, much of the current sample had been away from their work role for approximately 10 weeks. As such, the sample did not have an opportunity to apply positive PsyCap attitudes in the workplace until after the intervention finished. By time 3, the sample had returned to work for 8 weeks and, therefore, they had the opportunity to access positive PsyCap attitudes at work. By the end of this 8-week period, a positive significant association was found between PsyCap and work happiness. This suggests that training may only be effective if employees have the opportunity to put the training into practice in their work role. It might also suggest that there is a time-lag process for people to take what they learn in training and put it into practice at work. Future studies should consider the timing of interventions and the time-lag effect of transfer of training as a potential confound.

6.4.2 The iterative reprocessing of attitudes and positive attitude development

The Iterative-Reprocessing Model (IRM) suggests that implicit evaluation processes influence and are influenced by explicit reflective processes in an ongoing evaluative cycle (Cunningham & Zelazo, 2007; Van Bavel, et al., 2012). The model provides an organizing framework for leaders to understand how to develop positive attitudes in their employees as
automated (implicit) and reflective (explicit) attitudes collaboratively work together (Van Bavel et al., 2012). While the current findings support the value of including implicit and explicit attitudes in employee wellbeing research, there was not support for parallel processes occurring at implicit and explicit levels. While the model suggests that the two levels would co-occur, more participants had different patterns than the same.

There are several possible explanations for this pattern of results. It may indeed be that the model mis-specifies the patterning of explicit and implicit attitudes, or that the processes operate independently yet in parallel (Fazio & Olson, 2003; Gawronski & Strack, 2004). Alternatively, the timing of measures used in the study may have been insufficient for capturing the dual process. Cunningham & Zelazo (2007) propose that the iterative cycles of evaluation take place in milliseconds, whereas the current study considered much longer time scales (3 days and 8 weeks). Further consideration of the time course of the IRM is needed.

The IRM further suggests that attitude development and change is influenced by a pre-appraisal process, contextual information, and motivational factors (Van Bavel et al., 2012). Based on this, it was expected that when increases in PsyCap are supported and reinforced by positive context and motivational cues in the organizational environment (OV), higher levels of employee happiness at work ensue. Although the pattern of results followed this expectation, associations were not significant. The small sample size limits the power to find such a pattern. Thus, while the hypothesis proposed is not supported, the pattern of results suggests that further research in this area is worthwhile.

6.4.3 Implicit and explicit attitudes

A particular strength of the study is that it included both explicit and implicit measures, responding to the call for examination of non-conscious processes such as implicit attitudes in organizational research (Latham, Stajkovic, and Locke, 2010) and specifically in relation to organization culture (Uhlmann et al., 2012).

Across time, patterns of association amongst implicit PsyCap, implicit OV, and work happiness matched the explicit ones, in that variables closer in time were more strongly
correlated, and correlation strength declining over time. McClelland et al. (1995) proposed that implicit processes need several experiences to produce an aggregate knowledge base; as such they are slower to change and are more stable. The weakening association between implicit attitudes over time in the current study challenges this, and provides support for Van Bavel et al.’s (2012) proposition that implicit attitudes are as open to change as explicit ones. It also suggests that implicit measures access different aspects of employee attitudes to explicit ones.

Many phenomena of interest to researchers operate outside of an employee’s conscious awareness and control and various studies have illustrated the limited accuracy of conscious reflection through the difficulty people have identifying influencing factors in their attitudes and decisions (e.g. Nisbett and Wilson, 1977; Wilson, 2002). There are a number of reasons for the need to understand and measure non-conscious processes such as implicit attitudes. First, the knowledge-based high-cognitive load work in organizations likely means that that implicit processing is extensive in organizational life (Johnson and Steinman, 2009) and as such is worthy of study. Second, a range of important organizational outcomes such as leadership performance, creativity and employee health outcomes have been associated with implicit psychological constructs (Schultheiss, 2008).

Third, as results of the current study and other research shows, there is evidence that explicit and implicit attitudes can explain unique variance in outcomes of interest and are not necessarily correlated (Bing et al., 2007; McClelland, Koestner, and Weinberger, 1989). This suggests that there may be an additive influence of implicit attitudes (and other implicit constructs) on outcomes of interest. Fourth, implicit attitudes are processed in the automatic somatic and affective systems of the brain (Lieberman, 2007) and so are less susceptible to problems with self-report measures such as socially desirable responding (Roberts, Harms, Smith, Wood, and Webb, 2006) and can change more quickly. As such, it may be that the implicit measures provide a timelier reflection of attitude change. Further, the projective nature of many implicit measures may access changes in self-concept more quickly and be less dependent on changing behavior, such that implicit measures may be more effective in capturing the immediate
impact of interventions. This provides a strong rationale for future organizational research to include both explicit and implicit measures.

6.5 Study Limitations and Strengths

The results of this study need to be considered within a number of limitations. First, the outcome variable, work happiness, was based on Fisher’s (2010) model, but there is not a single validated measure to date that measures work happiness as a construct comprising engagement, commitment, and satisfaction. The current study used a refined measure from previous research (Williams et al., 2016a), which combined three psychometrically validated measures for the three inter-related domains proposed by the model. Further testing of Fisher’s model and a psychometrically strong measure of the model is needed.

Second, self-report measures were used, such that associations might reflect common source bias rather than true effects. The current study added two implicit measures, but incorporating other approaches and objective measures (e.g., customer experience surveys and levels of employee absenteeism), will be useful. Third, the implicit OV measure was developed specifically for this study. The measure mirrored the I-PCQ (Luthans and Harms, 2012), and initial psychometrics of the measure were adequate, but a full test of the measure was beyond the scope of this study. Further development of a validated implicit OV measure is needed. Fourth, the sample size was small, which limited the analyses possible. Finally, the study was conducted with employees who work in a school, which may not be generalizable to workers from other sectors.

Despite these limitations, the study makes several valid contributions. By investigating the attitudinal processes underlying the interrelationships between PsyCap, perception of organizational virtues, and work happiness with a sample of school employees, the current study integrates aspects of the fields of attitudes, positive organizational scholarship, positive organizational behavior and positive education. It is one of the first studies to apply the theory of the IRM to explain associations amongst PsyCap, OV and work happiness, to test the IRM theory in a field-based setting and, to examine how PsyCap, OV, and work happiness interrelate through changes in explicit and implicit attitudes over time. The intervention-based design of the study
provides valuable understanding of the patterns of the associations between PsyCap, OV, and work happiness when PsyCap is intentionally targeted for development and it provides support for the dual-approach to developing work happiness proposed by the Inside-out Outside-in model. Further, it responds calls from the field including the need to explore the influence of implicit attitudes in the workplace (Uhlmann et al., 2012) and the need to understand more about the underlying mechanisms of positive psychology interventions (Lyubomirsky & Layous, 2013).

6.6 Conclusion

There is increasing evidence that employee happiness at work influences positive outcomes for both employees and organizations. As such, wellbeing has become an important area of focus in positive organizational research. This study highlights the merit in understanding non-conscious processes such as implicit attitudes in wellbeing research, and their value to positive psychology interventions measurement programs. Further, the understanding of attitudinal processes underlying changes in work happiness that comes from the study provides an important foundation for effectively building and supporting employee wellbeing. It is hoped that attitudes receive considerably more attention in workplace wellbeing research in the future.
Chapter 7 Overview:

This chapter draws together the key content and contributions of the thesis. It provides a high-level discussion of the findings and highlights implications for research and practice. It summarizes the main theoretical contributions of the thesis and concludes by articulating ways in which the IO-OI model can contribute to future research in the field of Positive Psychology.
Chapter 7

Overall Discussion and Conclusions

The overall aim of this PhD was to take a systems perspective in exploring pathways and processes underlying work happiness in school staff to inform the design of future interventions that target the wellbeing of employees in schools and organizations more broadly. This body of work contributes to theory, research and practice in proposing a new way to consider change through the Inside-out Outside-in model; by integrating the fields attitudes, positive organizational scholarship (POS), positive organizational behavior (POB) and positive psychology (PP); through the development of measures of work happiness and implicit organizational virtuousness, and through the empirical findings that arose from a series of three studies. This final chapter will review and discuss the key content and unique contributions of the thesis, indicate implications and future directions and place this thesis within the larger context of positive psychology and organizational research.

7.1 Summary of Thesis Content and Contributions

The key findings and contributions of this PhD are summarized in table 7.1. The table also details if publications and/or presentations related to the findings have been made.

The work undertaken to review and synthesize the existing literature (chapter 1) identified the need for schools to support the wellbeing of their students and staff in order to reach education policy goals and to attract and retain teaching staff in the future. It also identified the need for positive psychology to adopt a systems perspective in the implementation of intervention programs in order to effectively address the multiple levels through which wellbeing is influenced and functions.

The literature review was extended to examine factors influencing employee wellbeing and integrated the literature on attitudes to generate the Inside-out Outside-in (IO-OI) model, a dual
process model to developing work happiness (chapter 2). The IO-OI model suggested that the work happiness of employees is influenced by individual-level personal resources developed through positive employee development and positive attitudes (inside-out factors), and social and job resources developed at the organizational level through positive strategies and positive organizational culture (outside-in factors). Associations between these factors were tested through a repeated measures correlation field study (study 1, chapter 4). Overall, results suggested that work happiness is influenced directly and separately by employee positive attitudes (psychological capital, PsyCap) and perception of organizational virtuousness (OV) within and across time, and that a synergistic effect may exist between PsyCap and OV. Study 1 provided initial support for the theory proposed in the IO-OI model and advanced theoretical understanding of employee wellbeing in the workplace.

The IO-OI model further proposed three processes as connecting outside-in and inside-out factors - selective exposure, confirmation bias and attitude development. These processes were explored through two intervention studies exploring the outcomes of a positive psychology training at work. Results of the first PPI study (study 2, chapter 5) provided some support for selective exposure and confirmation bias as underlying processes connecting inside-out and outside-in factors. Results of the second PPI study (study 3, chapter 6) provided some evidence of the process of attitude development as an explanatory mechanism for the associations between positive attitudes (PsyCap), perception of OV and work happiness (study 3, chapter 6). This study also provided further support for the IO-OI model, as inside-out and outside-in factors were found to influence employee wellbeing through implicit and explicit evaluation processes. Further, the results showed different patterns and associations between implicit and explicit measures of PsyCap and OV, highlighting the value of including implicit measures in PPI evaluation programs.
### Table 7.1. Key thesis content and contributions to theory and research.

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Aims</th>
<th>Methodology</th>
<th>Results &amp; Contribution</th>
<th>Published</th>
<th>Presented</th>
</tr>
</thead>
</table>
| 1       | Review and synthesis literature relevant to employee wellbeing in organizations and specifically schools. | Theoretical literature review and synthesis of 107 articles and book chapters. | a) Schools are potential loci for social change and need to operate as virtuous organizations that intentionally support and develop wellbeing of their student and staff.  
b) An imbalance exists in the current approach to the application of positive psychology in schools that focuses mainly on students, is programmatic in application and lacks a systems perspective. | No | No |
| 2       | Develop a conceptual model based on extant literature, to examine pathways and processes to develop employee wellbeing. | Theoretical literature review and synthesis of 184 articles and book chapters. | a) Integrates the fields of attitudes, positive organizational scholarship (POS), positive organizational behavior (POB) and positive psychology (PP).  
b) Suggests two approaches and three specific processes that influence development of employee wellbeing.  
c) Proposes the Inside-out Outside-in Model. | Yes | Yes |
| 4       | Test Fisher’s (2010) theoretical model of work happiness. Analyze naturally occurring patterns of relationships prior to intervention. | Confirmatory factor analysis and reliability analysis of data collected over three time-points (N=260).  
Descriptive statistics, correlations, regression and ANOVA analyses. | a) Advances theoretical understanding of ways in which constructs from POS, POB and PP inter-relate.  
b) First empirical test of Fisher’s theory of work happiness.  
c) Evidence that work happiness is influenced directly and separately by employee psychological capital (PsyCap) and perception of organizational virtuousness (OV) within and across time.  
d) Evidence that a synergistic effect between PsyCap and OV may exist.  
e) Results suggest inside-out and outside-in factors influence employee wellbeing. | Yes | Yes |
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<th>Chapter</th>
<th>Aims</th>
<th>Methodology</th>
<th>Results &amp; Contribution</th>
<th>Published</th>
<th>Presented</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Refine work happiness measure. Investigate the impact of developing one variable (PsyCap) on the other variables under study (OV and work happiness). Examine selective exposure and confirmation bias as underlying mechanisms for associations between variables and higher levels of work happiness.</td>
<td>Confirmatory factor analysis, exploratory factor analysis and reliability analysis using combined data set (N=330). Standardized t-tests, descriptive statistics, correlation, regression analyses and one-way ANOVA of intervention group (n=51).</td>
<td>a) Advances theoretical understanding of processes that underlie PPIs. b) Advances theoretical understanding of selective exposure and confirmation bias in a field study setting. c) First study to explore selective exposure and confirmation bias processes to explain associations between PsyCap, OV and work happiness. d) Some evidence that selective exposure and confirmation bias influence associations between PsyCap, OV and employee work happiness. e) Psychometric testing to refine work happiness measure (22 items).</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>6</td>
<td>Investigate patterns of change and associations in implicit and explicit variables under study. Examine attitude development as an underlying mechanism for associations between variables.</td>
<td>Descriptive statistics and correlations, standardized t-tests, chi square tests of the intervention group (n=51).</td>
<td>a) Advances theoretical understanding of processes that underlie PPIs. b) First study to test the iterative reprocessing model (IRM) theory of attitudes in a field-based setting and apply the IRM to explain associations between PsyCap, OV and work happiness. c) Evidence that Inside-out and Outside-in factors influence employee wellbeing through implicit and explicit evaluation processes. d) Evidence that attitude development provides some insight to the explanatory mechanisms for the synergistic influence of employee PsyCap and perception of OV on work happiness. e) Results highlight the value of including implicit measures in measurement of PPIs. f) Development and preliminary psychometric testing of an implicit organizational virtuousness measure.</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
A number of measures were developed for use in this research (chapter 3). The first empirical test of Fisher’s (2010) model of work happiness was conducted as part of study 1. The measure was subsequently refined through psychometric testing for use in studies 2 and 3. Measures to assess the processes of selective exposure and confirmation bias in a field context were developed for use in study 2, and an implicit measure of organizational virtuousness was developed for use in study 3. Each of these advances theoretical understanding of their respective fields and are tools that can be tested and refined further and used in future research.

7.2 Theoretical Contributions

Several theoretical implications arise from the model and findings of the thesis. Whereas a growing amount of research focuses on strategies to enhance employee wellbeing, adopting a systems perspective provided a more complete understanding of the complexity of developing wellbeing at work, explicitly identifying multi-level factors that influence employee wellbeing and the dynamic processes between them. Drawing on this perspective, the Inside-out Outside-in (IO-OI) model provides a framework for addressing employee wellbeing while taking into account dynamic factors involved.

The IO-OI model extends current theory and contributes to positive organizational psychology literature by integrating the fields of attitudes, POS and POB. These related areas are often studied separately, yet their integration might best address the complex influences on employees within an organization. The studies map psychological capital, organizational virtuousness and multi-dimensional workplace wellbeing together, identifying inter-relationships.

Moving away from the traditional taxonomies of change such as speed, scale or point of initiation i.e. ‘top-down’, ‘bottom-up’, the IO-OI model adopts a new perspective to change by focusing on the target of the locus for change (i.e., inside or outside the individual). In doing so, the IO-OI model highlights the need to adopt a systems perspective to developing wellbeing by addressing factors inside the employee and outside, in their work context. This extends existing change theory and opens a new agenda for future research that could examine, for example, alternative inside-out and outside-in pathways to those tested in this thesis; the influence of the
timing and phasing of inside-out and outside-in factors and the applicability of the model to outcome variables other than work happiness and in organizations other than schools.

The thesis progresses the field of wellbeing research by providing a first empirical test and subsequent refinement of Fisher’s (2010) theory of employee work happiness. This helps to develop theoretical understanding of work happiness through empirical evidence and provides a start point for future research to assess work happiness via a multi-dimensional measure.

Selective attention and confirmation bias have been shown to influence decision making in health, politics and research settings (Hart et al., 2009; Hergovich et al., 2010; Nickerson, 1998). This thesis examines selective exposure and confirmation bias in the workplace. Exploring their role as underlying mechanisms explaining associations between positive employee attitudes, organization culture and levels of work happiness extends current theoretical understanding and adds to existing literature. Specifically, the processes of selective attention and confirmation bias may explain why individual level (inside-out) and organizational level (outside-in factors) have reciprocal and synergistic associations on work happiness and how an upward and expanding self-reinforcing cycle can be created to support and foster work happiness across organizations. This develops existing understanding of the two processes, as their mutually reinforcing and synergetic effect has not previously been proposed and they have not been examined as explanatory mechanisms for increasing workplace happiness. Testing the processes in a field-based setting builds on existing research into these two processes, which has mainly been laboratory based.

The thesis proposes that PsyCap, which has been traditionally considered a psychological resource bank, can also be conceptualized as a positive attitude. In doing so it opens a field of literature and research that has not yet been explored in understanding the processes and mechanisms through which PsyCap has impact. Findings also indicate that positive attitudes at work influence positive attitudes towards work to create employee wellbeing at work and that these associations operate through explicit and implicit cognitive processes. The development of general positive attitudes such as hope, optimism, resilience and efficacy may provide a new conceptual pathway to developing wellbeing at work. The understanding of attitudes as the ‘active ingredient’
in positive psychology interventions brings a new perspective to potential mechanisms underlying their influence. In addition to applying attitude theory to the conceptualization of PsyCap, this thesis applied the theoretical iterative reprocessing model (IRM) of attitude development (Cunningham et al., 2007) as a joining mechanism between inside-out and outside-in interventions. In identifying and examining attitudes as an underlying variable to develop work happiness, this thesis contributes to the attitudes and positive psychology literature, which it is hoped future researchers will continue to explore. The results of the attitude measures in these studies also suggest differences in implicit and explicit attitude processes in response to the PPI. This highlights the value that the use of implicit measures in addition to explicit measures brings to the understanding and evaluation of PPIs. Finally, this thesis also provided preliminary psychometric and empirical tests of implicit Organizational Virtuousness. This extends current conceptualizations of organizational virtuousness to include perceptions that exist at a less conscious level and suggests a valid research agenda may exist in exploring implicit attitudes towards organizational level constructs. Finally, the thesis provides the initial validation for a tool through which implicit OV may be examined in future research.

7.3 Practical Contributions

The IO-OI model and empirical findings of the thesis have a number of implications for practice. In highlighting the need to create change both within and outside of employees, the model suggests that multi-approach positive psychology interventions may be more effective to develop, support and sustain employee wellbeing. The findings of the three studies highlight the need for leaders to intentionally influence factors inside the employee and factors outside the employee in the work environment. It also provides support for processes that enable reciprocal and synergistic associations between inside and outside factors. As such organizations need to develop both factors to foster sustainable employee wellbeing, which may involve using interventions to intentionally develop, support and sustain positive attitudes in the employee (e.g. employee development programs, mentoring, job shadowing) and interventions to intentionally develop, support and sustain positive culture in the organization (e.g. setting Everest goals, using strengths-based
feedback). Both PsyCap and organizational virtuousness have evidence-based development interventions that practitioners can use to support and foster work happiness in this way.

Further illustrating the complexity of wellbeing, the study findings suggested a temporal limit to the associations and influence of inside-out and outside-in factors on work happiness. For example, in study 1 (Chapter 4) the correlation between PsyCap and work happiness at time 1 was $r = .65$, whereas the correlation between PsyCap at time 1 work happiness at time 3 was $r = .45$. The declining associations over time suggest that one-off or short-term employee development initiatives may not be sufficient for sustainable change; actions to develop positive ‘inside’ factors in employees and positive ‘outside’ factors in the work environment need to be consistently embedded in organizational practices and processes in order to support, foster and sustain employee work happiness. In studying school staff, this research also has implications for the field of positive education, as the IO-OI model provides schools with a theoretical framework that will support them in taking a systems perspective to implementing positive psychology.

7.4 Limitations and Future Research

The studies in this thesis have a number of limitations. The outcome variable, work happiness, was based on Fisher’s (2010) model, for which there is not a single validated measure. Through the three studies, a measure of work happiness was validated and refined, however further testing of Fisher’s model and a psychometrically strong measure of the model is needed. A number of the other measures in the studies were also developed for this research as existing validated measures were not available (selective exposure, confirmation bias and implicit organizational virtuousness). As such, further validation of the measures used in the studies is needed. Finally, the use of self-report measures may mean that results are subject to common source bias rather than true effects.

Notwithstanding these limitations, the studies may have a number of implications for future research. The results of all three studies suggested that there is a time limit to the associations between positive attitudes (PsyCap) positive culture (OV) and work happiness, and the processes
that connect them. Further, two of the studies involved a positive psychology intervention (PPI), which took place after an extended holiday period for the staff involved in the study. Results suggest that this may have influenced levels of and associations among the variables under study. Taken together this suggests that future research should consider time as a mediating variable and the timing of interventions as a potential confound.

The role of the processes of selective exposure and confirmation bias in developing work happiness was explored. Results suggest that there may be a ‘tipping point’ in the strength and specificity of attitude present for the processes to be triggered. As such future research should consider strength of attitude as an independent variable of interest and consider specifying initial attitudes and preferences closely in order to improve sensitivity to detecting selective exposure processes. Further, selective attention and confirmation bias were associated within time but not across time which implies that there may be a temporal limit to the influence of confirmation bias. Based on this, future studies should investigate the temporal unfolding of confirmation bias. Future research could also explore how selective exposure and confirmation bias have influence in field-based contexts other than schools and with other variables of interest, for example, in influencing the uptake of new organizational processes by employees in a commercial business. Finally, the synergistic association between selective exposure and confirmation bias was supported through work happiness mean comparisons but not regression analyses. Sample size limited further analyses, as such, future research into these processes with larger samples would be valuable.

The iterative reprocessing model (IRM) of attitudes was found to provide some insight to the explanatory mechanisms for associations between positive attitudes (PsyCap), positive culture (OV) and work happiness. Further research examining this process would be worthwhile. Results also suggest that the ‘projective’ nature of implicit attitude measures may be more effective in capturing the immediate impact of the positive psychology training interventions. As such, it will be valuable for future research to include not only the typical explicit measures, but also various implicit measures in PPI measurement programs.
7.5 Inside-out Outside-in Beyond the Current Study

One of the aims of the current study was to help schools understand pathways to create wellbeing for their staff through a model that adopted a systems approach to creating change. Schools are complex dynamic systems in which many inter-connecting factors influence the wellbeing of both students and staff (Kern et al., 2015). It is hoped that the IO-OI model will assist schools in understanding the multiple levers for change that are available and need to be accessed if elevated wellbeing is to be sustained.

Many of the challenges and complexities that face schools in fostering staff wellbeing also face other organizations. Commercial, non-profit and government organizations face increasing global competition, complex market dynamics and the financial pressure to deliver higher performance for lower cost. Fostering staff wellbeing in this operating environment requires a strategic and intentional approach that will have impact by influencing different levels and dynamic processes within the organization system. The IO-OI model potentially can provide the road map for taking such an approach and is it hoped that a broad range of organizations will find it useful and relevant in creating their own map to increase workplace wellbeing.

The IO-OI model might also be useful for outcomes other than work happiness. A ‘generic’ version of the model (see Figure 1) could be used for creating positive organizational change to achieve other outcomes of interest.

The process for using this model would involve: 1.) identifying outcomes of interest that will meet the need in the organization; 2.) understanding the specific positive attitudes and the cultural environment that will support the identified outcome variable(s) and, 3.) designing interventions that will intentionally support development of the culture through positive practices and strategies and that will intentionally foster the specific positive attitudes identified through employee development. In addition to these three core steps, factors such as measurement and timing and phasing of the activities would also need to be considered.
7.6 Conclusion

The wellbeing of employees is associated with positive outcomes at the individual and organizational levels and as such is becomingly an increasingly important factor in the successful operation of organizations. This is equally true for schools, with their increasingly complex operating environment and pressure to achieve a broad array of targets and objectives. The study and development of wellbeing in schools has been criticized for taking an overly individualistic, piecemeal approach that focuses on students, rather than taking a whole-of-school approach that includes school staff. Schools are dynamic complex systems in which a wide variety of factors both inside the employee and outside, in the school environment influence individual wellbeing whilst at work. The Inside-Out Outside-In (IO-OI) model provides a framework for schools and other organizations to unpack and identify these influencing factors and suggests the underlying processes that connect them. In proposing the IO-OI model it is hoped that schools and organizations that use it will take a more holistic, systems perspective to fostering employee wellbeing that is both effective and sustainable.
Supplementary Analysis and Appendices

Supplementary Exploratory Analysis

Study 2: Selective exposure and confirmation bias

In addition to testing the hypotheses for Intervention Study 1, supplemental exploratory analyses examined differences between the control group and two sets of groups: 1) the highest and lowest levels of work happiness at time 3 and, 2) the largest and smallest change in work happiness from time 1 to time 3.

These exploratory analyses examined differences between groups based on changes in work happiness from time 1 to time 3 and levels of work happiness at time 3. The results of three groups were compared for PsyCap, OV, culture ratings, sentence stems, and work happiness at each of the three time points (giving 15 measurement points): the top tertile in the treatment group, the bottom tertile in the treatment group and the control group.

Figure 1 shows the mean deviation from the full sample in PsyCap, OV, culture ratings, sentence stems, and work happiness for the comparison groups based on work happiness at time 3.

The profiles of the highest and lowest tertile groups show distinct differences from each other and the control group. The highest tertile group positively deviates from the full sample mean in 14 out of the 15 measurement points; the exception is sentence stems ratings at time 1, when they equal the full sample mean. Mean scores for this group decline from time 1 to time 2, and subsequently increase from time 2 to time 3. In all measures, time 3 results for the highest tertile group are higher than at time 1; the largest increases were in sentence stems (10.4%) and culture rating (9.5%).

The lowest tertile group is below the full sample mean at 12 of the 15 measurement points. The three exceptions (i.e., when they meet or exceed the full sample mean) are OV and culture rating at time 1 and work happiness at time 2. The trend in this group’s results shows a decline over
time, with all results at time 3 lower than time 1. The largest reductions between time 1 and time 3 were in culture rating (83.70%) and OV (39.69%).

The control group was above the full sample mean on one measurement point – PsyCap at time 1; at all other measurement points this group was below the full sample mean. The largest difference between this group and the full sample is in culture rating, in which the control group is more than 1.00 below the full sample mean at time 1, time 2 and time 3. Most measures decrease over time for this group; however results for OV and sentence stems are higher at time 3 than time 1.

Figure 2 shows the mean deviations in PsyCap, OV, culture ratings, sentence stems, and work happiness for the comparison groups based on changes in work happiness from time 1 to time 3. Once again the profile of each group is distinct. The highest tertile group (i.e., those in the top 33% of change in work happiness from time 1 to time 3) meets or are below the full sample mean on 12 of the 15 measurement points. The three measurement points on which they are above the mean are sentence stem ratings at time 2 and time 3 and work happiness at time 3. This group increased in four of the five measures over time 1, time 2 and time 3; the exception to this was culture ratings, which decreased marginally from time 1 to time 2 (1%) and by 28% from time 1 to time 3.

The lowest tertile group (i.e., those in the bottom 33% of change in work happiness from time 1 to time 3) meets or positively deviate from the full sample mean on 10 of the 15 measurement points. Four of the 5 occasions on which this group is below the full sample mean are at time 3 (PsyCap, OV, sentence stems, and work happiness); one is at time 2 (sentence stems). The lowest tertile group decreased in all five measures across time 1, time 2 and time 3; the largest decreases were in OV time 1 to time 2 (22.5%) and culture ratings time 2 to time 3 (32%).

The analyses found unique profiles between tertile groups based on changes in work happiness from time 1 to time 3 and levels of work happiness at time 3. The highest tertile group based on work happiness at time 3 had higher levels of all constructs measured at all 3 time points than the lowest tertile group. This suggests that the participants who came into the study with the highest levels of work happiness maintained that position over the study duration resulting in a slightly higher level of work happiness at time 3 than baseline. By comparison, the lowest tertile
group were lower than the group mean in most measures at time 1 (exceptions were organizational
virtuousness and culture ratings) and subsequently reduced in all measures from both time 1 to time
2 (day 1 to day 3 of the training intervention) and time 2 to time 3 (day 3 of training intervention to 7
weeks later). Still, the change profiles indicated that those who changed the most were those with
lower time 1 scores. That is, those who changed the most had the greatest room for change. Similar
results have been found in previous studies (e.g. Froh, Kashdan, Ozimkowski, & Miller, 2009).

These results are relative to this sample; however, these comparisons suggest that if there are
limited organizational resources available to support and develop work happiness, they might best
be used to work with those who are at lower levels to begin with and so have the most to gain.
Those high in well-being still may benefit and increase further, but resources might be best spent on
those who are struggling more. As an alternative to sample mean, organizations may also consider
comparing group results to a norm and focus resources on those members below a certain level.

The group profiles also provide some further support for a selective exposure-confirmation
bias cycle in both its positive and negative form. For example, the group with the lowest change
between baseline and time 3 decreased in culture rating (selective exposure), sentence stem
completion (confirmation bias) and work happiness at each time point. In contrast, results of the
group with the highest work happiness levels at time 3 support a positive reinforcing cycle, with
positive culture rating, sentence stems and increased levels of work happiness at times 1 and time 3.
Figure 1: Deviation from the full sample mean for the three comparison groups in PsyCap, organizational virtuousness, culture ratings, sentence stems and work happiness (WH) across three time-points. Groups based on change in work happiness time 1 to time 3.
Figure 2: Deviation from the full sample mean for the three comparison groups in PsyCap, organizational virtuousness, culture ratings, sentence stems and work happiness (WH) across three time-points. Groups based on work happiness at time 3.
Appendix A

Survey Battery, Study 1

Before you begin, please create your unique username by entering the first 3 letters of your Mother’s name, followed by the first 3 letters of your Father’s name in the box below.

e.g. Mother’s name = Jane           Father’s name = David       Username = jandav

This will enable us to compare your results at the start and end of the course, without identifying you.

Your username: 

Below are some general demographic questions. Please circle your answer to each question.

At which campus do you work?
BH  C  Tt  T

Are you Male or Female?
Female  Male

How old are you?
18-24 yrs  25-34yrs  35-44yrs  45-54yrs  55-64yrs  65 years +

Are you a member of teaching or non-teaching staff?
Teaching Staff  Non-Teaching Staff

How many hours are you contracted to work at GGS per week?
37.5+ hrs   30-37.5 hrs  20-29.5 hrs  10-19.5 hrs  9.5 hrs or less

How long have you worked at this organization?
I am new this year  1-5 yrs  6-10 yrs  11-15yrs  16–20 yrs  20+yrs
**Psychological Capital** (Selected items from the PCQ 24)

*Below are statements that describe how you may think about yourself right now. Please indicate your level of agreement or disagreement with each statement.*

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Disagree Somewhat</th>
<th>Agree</th>
<th>Agree Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel confident analyzing a long-term problem to find a solution.</td>
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<tr>
<td>I feel confident in representing my work area in meetings with management.</td>
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<tr>
<td>I feel confident contacting people outside the organization (e.g., suppliers, customers) to discuss problems.</td>
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<tr>
<td>I feel confident presenting information to a group of colleagues.</td>
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<tr>
<td>Right now I see myself as being pretty successful at work.</td>
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<tr>
<td>I can think of many ways to reach my current work goals.</td>
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<td>I can be “on my own,” so to speak, at work if I have to.</td>
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<tr>
<td>I usually take stressful things at work in stride.</td>
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<td>I can get through difficult times at work because I’ve experienced difficulty before.</td>
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<tr>
<td>I feel I can handle many things at a time at this job.</td>
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<tr>
<td>When things are uncertain for me at work, I usually expect the best.</td>
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<tr>
<td>I approach this job as if “every cloud has a silver lining.”</td>
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</table>

Organizational Virtuousness

The following items refer to your perception of this organization. Please indicate the extent to which each statement matches your understanding of this organization.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Disagree Somewhat</th>
<th>Agree</th>
<th>Agree Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>A sense of profound purpose is associated with what we do here.</td>
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<tr>
<td>In this organization we are dedicated to doing good in addition to doing well.</td>
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<tr>
<td>We are optimistic that we will succeed, even when faced with major challenges.</td>
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<tr>
<td>Employees trust one another in this organization</td>
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<tr>
<td>People are treated with courtesy, consideration, and respect in this organization.</td>
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<tr>
<td>People trust the leadership of this organization.</td>
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<td>Acts of compassion are common here.</td>
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<tr>
<td>This organization is characterized by many acts of caring and concern for other people.</td>
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<tr>
<td>Many stories of compassion and concern circulate among organization members.</td>
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<tr>
<td>Honesty and trustworthiness are hallmarks of this organization.</td>
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<td>This organization demonstrates the highest levels of integrity.</td>
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<td>This organization would be described as virtuous and honorable.</td>
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<td>We try to learn from our mistakes here, consequently missteps are quickly forgiven.</td>
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<td>This is a forgiving compassionate organization in which to work.</td>
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<tr>
<td>We have very high standards of performance, yet we forgive mistakes when they are acknowledged and corrected.</td>
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</table>


Job Satisfaction

Think of your job in general. All in all, what is it like most of the time? Please rate each of the following 8 words or phrases.

<table>
<thead>
<tr>
<th>Yes, like this</th>
<th>No, not like this</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td></td>
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<tr>
<td>Undesirable</td>
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<tr>
<td>Better than most</td>
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<tr>
<td>Disagreeable</td>
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<tr>
<td>Makes me content</td>
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<tr>
<td>Excellent</td>
<td></td>
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<tr>
<td>Enjoyable</td>
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<tr>
<td>Poor</td>
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Work Engagement

The following 9 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. Please indicate how often you feel by marking the column that best describes how frequently you feel that way.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Never (Almost never, a few times a year or less)</th>
<th>Rarely (Once a month or less)</th>
<th>Sometimes (A few times a month)</th>
<th>Often (Once a week)</th>
<th>Very often (A few times a week)</th>
<th>Always (Every day)</th>
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<tbody>
<tr>
<td>At my work I feel bursting with energy</td>
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<td>At my job I feel strong and vigorous</td>
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<td>I am enthusiastic about my job</td>
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<td>My job inspires me</td>
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<td>When I get up in the morning I feel like going to work</td>
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<td>I feel happy when I am working intensely</td>
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<td>I am proud of the work that I do</td>
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<td>I am immersed in my work</td>
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<td>I get carried away when I am working</td>
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</table>


Organizational Commitment

Listed below are a series of statements that represent possible feelings that individuals might have about the company or organization for which they work. With respect to your own feelings about this organization, please indicate the degree of your agreement or disagreement with each statement by checking one of alternatives given.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Moderately Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Slightly Agree</th>
<th>Moderately Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.</td>
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<td>I talk up this organization to my friends as a great organization to work for.</td>
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<td>I would accept almost any type of job assignment in order to keep working for this organization.</td>
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<td>I find that my values and the organization’s values are very similar.</td>
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<td>I am proud to tell others that I am part of this organization.</td>
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<tr>
<td>This organization really inspires the very best in me in the way of job performance.</td>
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<tr>
<td>I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.</td>
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<tr>
<td>I really care about the fate of this organization.</td>
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<tr>
<td>For me this is the best of all possible organizations for which to work.</td>
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Appendix B

Survey Battery, Studies 2 and 3

Before you begin, please create your unique username by entering the first 3 letters of your Mother’s name, followed by the first 3 letters of your Father’s name in the box below.

e.g. Mother’s name = Jane         Father’s name = David   Username = jandav

This will enable us to compare your results at the start and end of the course, without identifying you.

Your username: ____________________________

Below are some general demographic questions. Please circle your answer to each question.

At which campus do you work?
BH   C   Tt   T

Are you Male or Female?
Female   Male

How old are you?
18-24 yrs  25-34 yrs  35-44 yrs  45-54 yrs  55-64 yrs  65 years+

Are you a member of teaching or non-teaching staff?
Teaching Staff   Non-Teaching Staff

How many hours are you contracted to work at this organization per week?
37.5+ hrs   30-37.5 hrs  20-29.5 hrs  10-19.5 hrs  9.5 hrs or less

How long have you worked at this organization?
I am new this year   1-5 yrs  6-10 yrs  11-15 yrs  16-20 yrs
20+ yrs

Implicit Psychological Capital + Organizational Virtuousness

In the following three pages you will see a series of statements. Your task is to invent stories about the people in these statements. Try to imagine what is going on. Think about what happened before, who the characters are, what they are thinking and feeling, what will happen next, and how will the story end. You don’t need to write the story down, just think about it until it is clear in your mind. Then respond to the items after each of the three statements using your own thoughts about what the character is thinking and feeling. Plan to spend around 2-4 minutes per story.

There are no right or wrong stories. Imagine whatever kind of story you like.
**Someone Talks to Their Supervisor**

*Remember your task is to invent a story about someone in this statement. Again, you don’t need to write the story down, just think about it until it is clear in your mind. Then respond to the following items using your own thoughts about what the character is thinking and feeling.*

*Rate the degree to which the character in your story thinks or feels using the following scale:*

<table>
<thead>
<tr>
<th><strong>Respond to the following items using your own thoughts about what the character is thinking and/or feeling...</strong></th>
<th>The opposite is very true of this character</th>
<th>The opposite is somewhat true of this character</th>
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<tr>
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<tr>
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Someone Has a New Job

Remember your task is to invent a story about someone in this statement. Again, you don’t need to write the story down, just think about it until it is clear in your mind. Then respond to the following items using your own thoughts about what the character is thinking and feeling.

Rate the degree to which the character in your story thinks or feels using the following scale:

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Someone Makes a Mistake at Work

Remember your task is to invent a story about someone in this statement. Again, you don’t need to write the story down, just think about it until it is clear in your mind. Then respond to the following items using your own thoughts about what the character is thinking and feeling.

Rate the degree to which the character in your story thinks or feels using the following scale:

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Selective Exposure - Culture Rating

Please look at the words in the table below and use the scale guide to choose any number between 0-100 to indicate how much you feel the quality is present in the culture of this organization.

**Scale Guide:**
0 = not in the culture at all
50 = in the culture sometimes/in some areas
100 = strongly evident in the culture

If an example comes to mind, please include a story from your experience at this organization that demonstrates to you how the word is present in the culture.

<table>
<thead>
<tr>
<th>Word</th>
<th>Number (0-100)</th>
<th>Example story</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimism</td>
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<tr>
<td>Suspicion</td>
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<tr>
<td>Pessimism</td>
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<td>Blame</td>
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<td>Trust</td>
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<td>Integrity</td>
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<td>Forgiveness</td>
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<td>Indifference</td>
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<tr>
<td>Compassion</td>
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<tr>
<td>Dishonesty</td>
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</tbody>
</table>
Confirmation Bias: Sentence Completion Task

Below are 15 incomplete sentences. Read each one and finish it by writing the first thing that comes to your mind. Work as quickly as you can. Do not spend too much time on each item. If you cannot complete an item, circle the number and return to it later.

1. This organization is...
2. When people come to work at this organization they feel...
3. At this organization we often...
4. What people most like about working at this organization is....
5. Most people at this organization...
6. The culture at this organization ...
7. At this organization we don’t...
8. What employees most like about this organization is....
9. Managers at this organization...
10. At this organization we...
11. The happiest time on this job is...
12. The average worker at this organization considers...
13. What employees don’t like about this organization is...
14. Coming to work is...
15. What people don’t like about working at this organization is...
**Explicit Psychological Capital** (Selected items from the PCQ 24)

*Below are statements that describe how you may think about yourself right now. Please indicate your level of agreement or disagreement with each statement.*

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Disagree Somewhat</th>
<th>Agree</th>
<th>Agree Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel confident analyzing a long-term problem to find a solution.</td>
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<tr>
<td>I feel confident in representing my work area in meetings with management.</td>
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<tr>
<td>I feel confident contacting people outside the organization (e.g., suppliers, customers) to discuss problems.</td>
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<tr>
<td>I feel confident presenting information to a group of colleagues.</td>
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<tr>
<td>Right now I see myself as being pretty successful at work.</td>
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<tr>
<td>I can think of many ways to reach my current work goals.</td>
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<tr>
<td>I can be “on my own,” so to speak, at work if I have to.</td>
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<tr>
<td>I usually take stressful things at work in stride.</td>
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<tr>
<td>I can get through difficult times at work because I’ve experienced difficulty before.</td>
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<tr>
<td>I feel I can handle many things at a time at this job.</td>
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<tr>
<td>When things are uncertain for me at work, I usually expect the best.</td>
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<tr>
<td>I approach this job as if “every cloud has a silver lining.”</td>
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</table>

**Explicit Organizational Virtuousness**

*The following items refer to your perception of your organization. Please indicate the extent to which each statement matches your understanding of your organization.*

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree</th>
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<tr>
<td>A sense of profound purpose is associated with what we do here.</td>
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<td>In this organization we are dedicated to doing good in addition to doing well.</td>
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<tr>
<td>We are optimistic that we will succeed, even when faced with major challenges.</td>
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<tr>
<td>Employees trust one another in this organization</td>
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<tr>
<td>People are treated with courtesy, consideration, and respect in this organization.</td>
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<tr>
<td>People trust the leadership of this organization.</td>
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<tr>
<td>Acts of compassion are common here.</td>
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<tr>
<td>This organization is characterized by many acts of caring and concern for other people.</td>
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<tr>
<td>Many stories of compassion and concern circulate among organization members.</td>
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<tr>
<td>Honesty and trustworthiness are hallmarks of this organization.</td>
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<tr>
<td>This organization demonstrates the highest levels of integrity.</td>
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<tr>
<td>This organization would be described as virtuous and honorable.</td>
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<tr>
<td>We try to learn from our mistakes here, consequently missteps are quickly forgiven.</td>
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<tr>
<td>This is a forgiving compassionate organization in which to work.</td>
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<tr>
<td>We have very high standards of performance, yet we forgive mistakes when they are acknowledged and corrected.</td>
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</tbody>
</table>


**Job Satisfaction**

*Think of your job in general. All in all, what is it like most of the time? Please rate each of the following 8 words or phrases.*

<table>
<thead>
<tr>
<th>Word</th>
<th>Yes, like this</th>
<th>No, not like this</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td></td>
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<tr>
<td>Undesirable</td>
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<tr>
<td>Better than most</td>
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<tr>
<td>Disagreeable</td>
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<tr>
<td>Makes me content</td>
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<tr>
<td>Excellent</td>
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<td>Enjoyable</td>
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<tr>
<td>Poor</td>
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</tbody>
</table>

Work Engagement

The following 9 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. Please indicate how often you feel by marking the column that best describes how frequently you feel that way.

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Almost never (A few times a year or less)</th>
<th>Rarely (Once a month or less)</th>
<th>Sometimes (A few times a month)</th>
<th>Often (Once a week)</th>
<th>Very often (A few times a week)</th>
<th>Always (Every day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At my work I feel bursting with energy</td>
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<td>At my job I feel strong and vigorous</td>
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<td>I am enthusiastic about my job</td>
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<td>My job inspires me</td>
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<tr>
<td>When I get up in the morning I feel like going to work</td>
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<td>I feel happy when I am working intensely</td>
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<td>I am proud of the work that I do</td>
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<td>I am immersed in my work</td>
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<td>I get carried away when I am working</td>
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</table>


Organizational Commitment

Listed below are a series of statements that represent possible feelings that individuals might have about the company or organization for which they work. With respect to your own feelings about your organization, please indicate the degree of your agreement or disagreement with each statement by checking one of alternatives given.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Moderately Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Slightly Agree</th>
<th>Moderately Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful.</td>
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<td>I talk up this organization to my friends as a great organization to work for.</td>
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<td>I would accept almost any type of job assignment in order to keep working for this organization.</td>
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<td>I find that my values and the organization's values are very similar.</td>
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<td>I am proud to tell others that I am part of this organization.</td>
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<td>This organization really inspires the very best in me in the way of job performance.</td>
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<td>I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.</td>
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<td>I really care about the fate of this organization.</td>
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<td>For me this is the best of all possible organizations for which to work.</td>
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</tbody>
</table>

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