Psychological capital: A review and synthesis

Citation:
Newman, Alexander, Ucbasaran, Deniz, Zhu, Fei and Hirst, Giles 2014, Psychological capital: A review and synthesis, *Journal of organizational behavior*, vol. 35, Supplement 1, pp. S120-S138.

This is the accepted manuscript.

© 2014, John Wiley & Sons

This is the peer reviewed version of the article, which has been published in final form at http://dx.doi.org/10.1002/job.1916. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Self-Archiving.

Downloaded from DRO:
http://hdl.handle.net/10536/DRO/DU:30080235

DRO
Deakin Research Online,
Deakin University's Research Repository

Deakin University CRICOS Provider Code: 00113B

Psychological Capital: A Review and Synthesis

Keywords: Psychological capital (PsyCap); leadership; work outcomes

Abstract

The concept of psychological capital (PsyCap) has attracted a great deal of interest from both academics and practitioners and has been linked to employee attitudes, behavior and performance, at different levels of analysis. Yet the nature of the concept, its measurement, the factors which influence its development, as well as when and how it influences individual, team and organizational-level outcomes are the subject of continued debate in the literature. This article offers a detailed and focused review of the existing literature on PsyCap, with the aim of developing an agenda for future research. In particular we call for researchers to pay greater attention to possible multi-level applications of PsyCap research, examine the underlying mechanisms by which PsyCap influences individual, team and organizational-level outcomes, and identify possible factors which may moderate the relationship between PsyCap and its outcomes. In doing this we provide a roadmap for scholars to progress the development of the field.

Introduction

The resource-based theory of the firm has proved to be an extremely popular theoretical foundation for many studies seeking to explain the sources of sustainable competitive advantage for organizations (see Acedo, Barroso, & Galan, 2006; Newbert, 2007). This popularity is justified when we look at evidence pointing to the positive relationship between strategic resources (i.e. those that are valuable, rare and are difficult to imitate or substitute) and organizational performance (Crook, Ketchen Jr., Combs, & Todd, 2008). Among the strategic resources that may contribute to sustainable competitive advantage, human capital has been presented as the most universally valuable and imperfectly imitable resource (Crook**,** Todd, Combs, Woehr, & Ketchen, 2011; Grant, 1996, Kogut & Zander, 1992). Yet, the underlying mechanisms tying human capital to competitive advantage are poorly understood despite the micro-foundations (of resources and capabilities) movement (Coff & Kryscynski,

2011; Foss, 2011). The micro-foundations movement calls for developing a better understanding of individuals (including their idiosyncratic preferences, mental models and motivations), and their interactions with one another (Foss, 2011), in order to better understand "people-based advantages" [i.e. a firm's ability to generate greater economic value than its competitors as a result of its ability to access and utilize employee knowledge, skills and abilities (Coff & Kryscynski, 2011)]. For example, for human capital to generate superior rents for the organization, organizational members must be motivated to first deploy their human capital, and then deploy it in the right way (i.e. towards the development of valuable routines and capabilities).

One form of strategic resource that has gained increasing attention in the literature for its influence on human performance is psychological capital (Ardichvili, 2011). Drawing on ideas from positive psychology (Peterson, 2006; Seligman & Csikszentmihalyi, 2000), positive organizational scholarship (Cameron, Dutton & Quinn, 2003), and the emerging field of positive organizational behavior (Wright, 2003), Luthans and his colleagues developed the construct of psychological capital, hereafter PsyCap, to capture an individual's psychological capacities that can be measured, developed and harnessed for performance improvement (Luthans & Youssef, 2004). Using a number of key criteria, they identify four main psychological resources from the positive psychology literature which form the higher-order construct of PsyCap: self-efficacy, hope, optimism and resilience (Luthans & Youssef, 2007; Luthans, Youssef, & Avolio 2007). They distinguish PsyCap from other forms of people-related capital, namely human and social capital. With its intellectual origins lying in economics, human capital refers to an individual's stock of knowledge, skills and abilities that can be increased by experience and/or investment in education and training (Becker, 1993). The concept of social capital emerged from sociology, and relates to the aggregate of the actual or potential resources which are linked to the possession of a durable network of

relationships of mutual acquaintance and recognition (see Bourdieu, 1986; Coleman, 1988; Grannovetter, 1985; Nahapiet and Ghoshal, 1998). Put simply, human capital is concerned with 'what you know', social capital with 'who you know' whilst PsyCap is concerned with 'who you are' and 'who are you becoming' (Luthans, Avey, Avolio, Norman, Combs, 2006; Luthans & Youssef, 2004).

Over the past decade, a large number of studies have investigated the relationship between PsyCap and employee attitudes, behavior and performance at the individual-level. In recent years scholars have also begun to examine its influence at the team and organizational-level (McKenny, Short, & Payne, in press; Walumbwa, Luthans, Avey, & Oke, 2011). At present there are more than 66 published papers on PsyCap, including the first meta-analytical review (Avey, Reichard, Luthans, & Mhatre, 2011), and a review of the psychometric properties of the PsyCap Questionnaire (PCQ) (Dawkins et al., in press). Although this work affords an important first step demonstrating the veracity of the construct, as well as establishing some boundary conditions in which PsyCap is most effective, it leaves unanswered questions which are highlighted through our systematic review of the literature.

We seek to contribute to the field's understanding of PsyCap in a number of ways. First, by examining a larger number of articles (over five times the number of published articles than in the Avey, Reichard, et al. (2011) meta-analysis and double the number in the Dawkins et al. (in press) psychometric review), we undertake a far more comprehensive review of the literature, delivering greater robustness and confidence in analysis. As well as examining literature on the outcomes of PsyCap, which was the focus of the meta-analysis, we also review an emerging yet significant body of literature on the antecedents of PsyCap, as well as PsyCap's role as a mediator, which has been largely overlooked by prior reviews. In addition, we examine work that has studied the outcomes of PsyCap not covered in prior reviews, such as absenteeism, job search behaviour, creative performance, innovation, safety climate, and

additional moderators such as employee age, organizational identity, and service climate. Consequently, we seek to contribute to the field by clearly highlighting the nomological network of constructs to which PsyCap is most closely related.

Second, building on Dawkins et al. (in press) we focus on measurement issues that were neglected in their psychometric review of the PCQ measure. Specifically, we discuss how to deal with common method and social desirability biases that arise from using self-report measures of PsyCap, highlight alternative measures to capture PsyCap such as other-report and physiological/biological measures, and discuss the appropriateness of elevating PsyCap to a team or organizational-level construct.

Finally, we provide a roadmap for scholars to more systematically target opportunities within the field. In particular we highlight three main areas of research which we argue are worthy of greater attention. Specifically, our review reveals a dearth of research on multi-level applications of PsyCap research, the need to examine the underlying mechanisms by which PsyCap influences individual, team and organizational-level outcomes, and moderators of the relationship between PsyCap and its outcomes at different levels of analysis. As well as providing us with greater knowledge of why PsyCap has a positive influence on workplace outcomes at different levels of analysis and its boundary conditions, research in these areas will have important practical benefits through assisting organizations to design work environments and practices that assist in the development and deployment of PsyCap.

In line with best practice (Short, 2009), we used Web of Science, Google Scholar and other relevant databases to identify peer reviewed articles with PsyCap or psychological capital in their title, abstract and keywords. We restricted our search to articles published since 2004 as this is when Luthans' seminal work on PsyCap was published. As a result a total of 66 articles were identified for inclusion in our review, of which 60 were empirical papers[1].

[1] These articles have been highlighted with an asterisk in the reference section

We organize this paper into two main sections. In the first section, we review the past research on PsyCap. Here we define PsyCap and describe its measurement. We then review research that has examined the antecedents, outcomes, and moderators of PsyCap. In the second section, we develop an agenda for future research.

A Review of the Psychological Capital Literature

Defining Psychological Capital

To define PsyCap, Luthans and his associates provide a set of inclusion criteria. They argue that it needs to be grounded in theory or research, have valid measures and must be state-like (as opposed to trait-like), therefore having the potential to be developed through training and intentional practice (Luthans, 2012; Luthans, Avey, et al., 2008). Based on these criteria Luthans and his co-authors describe PsyCap as an individual's positive psychological state of development which comprises four positive psychological resources: self-efficacy, optimism, hope and resilience. Self-efficacy, based on Bandura's social cognitive theory (Bandura, 1997, 2012), refers to an individual's confidence in their ability to mobilize their motivation, cognitive resources and courses of action in order to achieve high levels of performance (Stajkovic & Luthans, 1998). Individuals with high self-efficacy generally have a stronger belief in their ability to control outcomes and succeed in addressing difficult challenges than those low in self-efficacy (Bandura, 1997). Optimism refers to an individual's expectancy of positive outcomes (Scheier, Carver, & Bridges, 2001). Those high in optimism generally build positive expectancies that motivate them to pursue their goals and deal with difficult situations (Seligman, 1998). Hope is comprised of two components: agency (goal directed energy) and pathways (Snyder, Sympson, Ybasco, Borders, Babyak, & Higgins, 1996). Whereas agency refers to an individual's motivation to succeed at a specific task in a set context, pathways refer to the way or means by which that task may be accomplished (Luthans, Norman, et al., 2008). Individuals with high levels of hope show greater goal

directed energy and are more likely to exhibit the capacity to develop alternative pathways to accomplish their goals (Luthans, Avey, et al., 2008). Finally, resilience refers to the ability of an individual to bounce back from adversity, uncertainty, risk or failure and adapt to changing and stressful life demands (Masten & Reed, 2002; Tugade & Fredrickson, 2004). Individuals high in resilience tend to be better at adapting in the face of negative experiences and changes in the external environment (Luthans, Vogelgesang, & Lester, 2006).

Prior empirical research provides evidence of the PsyCap scale's convergent and discriminant validity from other 'individual difference' variables or 'positive core constructs' such as 'core self-evaluations' and the 'Big-5' personality characteristics (Avey et al., 2009; Luthans, Avolio, Avey, & Norman, 2007). There is also evidence to suggest that PsyCap is 'state-like' in nature and open to development, which positions it somewhere along a continuum between transient states, which are momentary and very changeable, and 'hard wired' traits, which are very stable and difficult to change (Luthans, Avolio, et al., 2007; Walumbwa et al., 2011). Recent work examining whether PsyCap can be developed through training interventions provides support for conceptualizing PsyCap as a developmental state (Demerouti, van Eeuwijk, Snelder, & Wild, 2011; Luthans, Avey, et al., 2006; Luthans, Avey, et al., 2008; Luthans et al., 2010; Luthans, Luthans, & Jensen, 2012).

Although prior work has typically conceptualized PsyCap as a higher-order factor, comprising of the four dimensions of self-efficacy, hope, optimism and resilience, there is growing discussion as to whether other related nomological constructs might be included in the PsyCap scale such as well-being, flow, humor, gratitude, and forgiveness (Luthans, Norman, et al., 2008; Luthans & Youssef, 2007). Although this approach appears plausible, the inclusion of additional dimensions without adequate theoretical justification may in fact lead to conceptual confusion about the definition of the construct (Dawkins et al., in press).

Measuring Psychological Capital

Previous work has measured PsyCap at the individual and team-level through the use of self-report measures. The most widely-used self-report measure has been the four dimensional 24-item PsyCap Questionnaire (PCQ)[2] as developed and empirically validated by Luthans and his colleagues (Luthans, Avolio, et al., 2007). Thirty three out of the 60 empirical studies identified in our review used this measure to capture PsyCap at the individual and team-level. Other studies have either used abbreviated forms of the PCQ measure (15 studies), the implicit-PCQ measure (one study), or used separate measures for each of the underlying dimensions of PsyCap based on existing scales (11 studies). Although a recent review of the literature provided a critical evaluation of the psychometric properties of the PCQ measure (Dawkins et al., in press), it failed to address three main issues of concern for PsyCap researchers; how to deal with common method and social desirability biases that arise from using self-report measures; the possibility of using alternative measures to capture PsyCap such as other-report and physiological/biological measures; and the appropriateness of elevating PsyCap to a team or organizational-level construct.

Dealing with Common Method and Social Desirability Biases

In most studies, data on PsyCap at the individual-level have been self-reported, and collected from a single source at a single point in time, which increases the possibility of both common method variance (CMV) and social desirability response bias. CMV might have inflated the correlations between PsyCap and its outcomes in the studies included in prior meta-analytical work (Avey, Reichard, et al., 2011). Although researchers are increasingly aware of the need to limit CMV between dependent and independent variables by collecting them at different points in time or from different sources (Podsakoff et al., 2003), limited attempt has been made to deal with CMV between the sub-components of PsyCap. Despite evidence supporting the conceptualization of PsyCap as a higher-order construct (Avey, Reichard, et

[2] The Psychological Capital Questionnaire (PCQ) has been copyrighted and is available for research purposes at http://www.mindgarden.com/products/pcq.htm.

al., 2011), critics argue that other factors, such as CMV, may account for the shared variance between the sub-components of higher-order factors (Johnson, Rosen, & Djurdjevic, 2011). A number of solutions have been proposed to test for or reduce CMV when examining the relationships between standalone variables and a higher-order construct. These include partialling out the variance of a marker variable, partialling out the variance of an unmeasured latent CMV factor, using different methods to measure each sub-dimension of a higher-order construct, and measuring each sub-dimension at a different point in time (Johnson et al., 2011; Johnson, Rosen, Chang, Djurdjevic & Taing, in press). These techniques have been effectively used in work examining core self-evaluations as a higher-order factor (Judge, Hurst, & Simon, 2009; Srivastava, Locke, Judge, & Adams, 2010), but to date have not been used in the measurement of PsyCap. The problems associated with common method bias and social desirability response bias that stem from self-report measures might also be avoided by considering alternative measures of PsyCap.

Alternative Measures of PsyCap

As an alternative to self-report measures, Demerouti et al., (2011) propose the use of other-rated measures to capture PsyCap at the individual-level such as asking partners, supervisors and other acquaintances to rate the PsyCap of employees. Harms & Luthans (2012) have also suggested researchers utilize an Implicit PsyCap Questionnaire (I-PCQ) to reduce social desirability response bias and faking issues. This measure has the respondent imagine three stories of an individual that are prompted by positive, ambiguous and negative events. For each story they are then required to answer a question related to the four components of PsyCap. The I-PCQ has been shown to exhibit convergent and discriminant validity vis-à-vis the PCQ (Luthans, 2012). However, although it reduces the likelihood of social desirability response bias, it does not completely eliminate CMV given its self-report nature. Further, the I-PCQ measure has only been validated by one existing study (Harms & Luthans, 2012).

To strengthen the validity of their findings, researchers may consider the use of study designs which capture the underlying components of PsyCap using physiological/biological measures, given growing empirical evidence of a strong association between such measures and positive psychological states. Recent research, for example, has established that individuals high in PsyCap have lower levels of cholesterol (Luthans, Youssef, Sweetman, & Harms, 2013). Other work indicates that individuals experiencing higher levels of psychological wellbeing have improved levels of cardiovascular recovery to negative emotional arousal states, less sleep disturbance, and higher levels of cortisol output (Steptoe, Dockray, & Wardle, 2009). Furthermore, evidence suggests that optimistic individuals typically have higher levels of immune system response to stress (Cohen et al., 1999). Future research might examine whether within-person variability in PsyCap over time corresponds to within-person variability across these and other physiological/biological measures (Akinola, 2010; Lee & Chamberlain, 2007), and their links to within-person changes in attitudes, behavior and performance. This should provide further evidence that PsyCap is state-like in nature, and contribute to recent work which links within-person variability in PsyCap to changes in employee performance (Peterson et al., 2011).

Appropriateness of Elevating the Measurement of PsyCap to the Team/Organizational Level

Although scholars have typically conceptualized PsyCap at the individual-level, it has recently been studied as a team and organizational-level construct. For example, Walumbwa et al. (2011) developed a measure of ‘collective’ PsyCap, describing it as the product of interactive exchanges between members that created an emergent sense of the group’s ability to achieve desired collective goals. Using an eight-item scale, team members rated the collective PsyCap of team. Having assessed inter-rater agreement and reliability, the authors concluded that a collective perceptual measure of team PsyCap was present. As high levels of agreement amongst team members are particularly important to evidence the use of this team-

level perceptual measure, future work may investigate factors which predict PsyCap strength i.e. the degree of within-unit agreement among team members' collective PsyCap perceptions. Research may also seek to ascertain the influence of PsyCap strength on team outcomes, a topic which has gained increasing attention in the team climate literature (González-Romá, Fortes-Ferreira, & Peiró, 2009; Schneider, Salvaggio, & Subirats, 2002).

More recently, McKenny et al. (in press) proposed a measure of organizational-level PsyCap using computer-aided text analysis. They created lists of words that are representative of organizational PsyCap and analysed the frequency with which such words were used in organizational texts, namely CEO letters to shareholders. Although the use of computer-aided text analysis might provide an alternative means to measure PsyCap, such a measure is likely to be subject to social desirability response bias in a similar way to self-report measures. Fiol (1995), for example, has warned against over-relying on information from the content analysis of company documents, given the potential for impression management on the part of the organization. Indeed, McKenny et al. (in press) acknowledge this as one of the limitations of their approach. Further, Duriau, Reger and Pfarrer (2007) highlight how documents such as shareholder letters may be prepared by public relations specialists rather than senior management, and therefore not reflect the views of senior management. Fiol (1995) recommended focusing on non-evaluative statements for text analysis.

Antecedents of Psychological Capital/ Psychological Capital as Mediator

Growing work has identified factors which lead to or inhibit PsyCap formation. This both shows the malleability of the construct to external influences, and also identifies opportunities for intervention. Knowledge of the antecedents of PsyCap can help organizations develop programs to bolster individual PsyCap through the design of workplace systems i.e. support mechanisms and leadership initiatives. We now review research highlighting the antecedents of PsyCap as well as work evidencing PsyCap as

mediating the relationship between these antecedents and various individual, team and organizational outcomes.

There is growing evidence that the provision of workplace support facilitates PsyCap development in employees, as it gives them greater hope to seek out new and different pathways to achieve their goals, and serves as a resource that allows them to bounce back quickly after a setback (Luthans, Norman, et al., 2008). For example, Liu (2013) found that employees who perceived higher levels of supervisor support had higher levels of PsyCap, which in turn predicted higher levels of performance, and Luthans, Norman, Avolio, & Avey (2008) found that PsyCap fully mediated the relationship between a supportive organizational climate and their job performance. Nigah et al. (2012) found that satisfaction with buddying, a socialization mechanism commonly utilized by organizations to support new recruits, led to higher levels of employee PsyCap, and in turn predicted their work engagement. Mathe & Scott-Halsell (2012) revealed that employee perceptions of external prestige were positively associated with their PsyCap.

Recent work demonstrates that individuals who face a stressful working environment and high levels of work-family conflict exhibit lower levels of PsyCap than those who face less stressful experiences. For example, Liu et al. (2012) found that female medical practitioners who felt under-rewarded and over-committed had lower levels of PsyCap, and that PsyCap was negatively associated with depressive symptoms. Similarly, Wang et al. (2012) found that PsyCap partially mediated the relationship between work-family conflict and three dimensions of burnout, for female medical practitioners. A recent study also demonstrated that higher levels of employment uncertainty led to lower levels of PsyCap, which in turn predicted higher levels of stress and lower levels of meaning of life (Epitropaki, 2013).

Combs et al. (2012) found a positive relationship between the strength of an individual's ethnic identity and their PsyCap. The authors argue that as individuals understand more about

their ethical identity and overcome obstacles and challenges along the way, this should enable them to develop their PsyCap. Ngo et al. (in press) examined the influence of an individual's gender role orientation on their PsyCap and perceptions of career success. Although individuals high in masculinity and femininity were found to exhibit higher levels of PsyCap, the mediating effects of PsyCap on subjective career success was stronger for those high in masculinity.

Recent studies have examined the mediating role played by PsyCap in linking transformational and authentic leadership behavior to individual and team-level work outcomes (Gooty et al., 2009; McMurray, Pirola-Merlo, & Sarros, 2010; Rego, Sousa, Marques, & Pina e Cunha, 2012c; Walumbwa, Luthans, et al., 2011; Wooley et al., 2013). At the individual-level, Gooty et al. (2009) found that PsyCap fully mediated the relationship between transformational leadership, and both follower job performance and organizational citizenship behaviors (OCBs). Similar findings are reported by McMurray et al. (2010) who found a positive association between leadership behavior (transformational and transactional) and PsyCap, Wooley et al. (2012) who found a positive relationship between authentic leadership and PsyCap, and Rego et al. (2012) who found that PsyCap fully mediated the relationship between authentic leadership and employee creativity. At the team-level, Walumbwa et al. (2011) found that the collective PsyCap of the team fully mediated the relationship between authentic leadership, and both group performance and group OCBs. Finally, recent work by Story, Youssef, Luthans, Barbuto, & Bovaird (in press) revealed that leader PsyCap was positively related to follower PsyCap, being mediated by the quality of relationships. Despite such findings, few studies have examined the relative importance of other leadership styles to PsyCap development, which involve the delegation of responsibility to subordinates i.e. distributed or participative leadership (Pearce & Conger, 2003).

Outcomes of Psychological Capital

There is evidence showing that PsyCap influences a variety of outcomes at different levels of analysis, some of which we have touched upon in the previous section.

Psychological capital and individual attitudes

Numerous studies have investigated PsyCap's relationship with desirable employee attitudes, such as organizational commitment and job satisfaction (Luthans, Avey, et al., 2008; Luthans, Avolio, et al., 2007) and staying intentions (see Avey, Reichard, et al.'s (2011) meta-analytical review). Individuals high in PsyCap have positive expectations about future outcomes, and greater belief in their ability to deal with various challenges involved in the job. These positive psychological states motivate individuals to exert greater effort, perform well in their job, which in turn enhances their job satisfaction (Luthans, Avolio, et al., 2007). Research has also established that PsyCap positively influences employees' intentions to stay and their commitment towards the mission of their organization (Luthans & Jensen, 2005). Growing work has also examined PsyCap's influence on undesirable employee attitudes at work such as their turnover intentions and cynicism (see Avey, Reichard, et al., 2011). For example, Avey, Hughes, et al. (2008) found that employees high in PsyCap were more empowered, which subsequently reduced their turnover intentions. PsyCap was also found to be positively related to cynicism, but this relationship was not mediated by empowerment. Similar findings on the relationship between PsyCap and employees' intention to quit, as well as cynicism, are reported elsewhere (Avey et al., 2009; Avey, Wernsing, et al., 2008).

Psychological capital and individual/team behavior

PsyCap has also been found to influence desirable and undesirable behaviors amongst employees in the workplace, as highlighted in the findings from recent meta-analytic work (Avey, Reichard, et al., 2011). For example, a positive association has been found between PsyCap and extra-role behaviors, such as organizational citizenship behaviors (OCBs) (Avey, Hughes, et al., 2008; Gooty et al., 2009; Norman et al., 2010). These positive behaviors are

attributed to the positive emotions likely experienced by individuals high in PsyCap who use broader thought-action repertoires to solve problems (Avey, Hughes, et al., 2008). Work has also found a negative link between PsyCap and undesirable behaviors in the workplace, such as counterproductive or deviant behavior (Avey, Hughes, et al., 2008; Norman et al., 2010). Beyond the recent meta-analysis (Avey, Reichard, et al., 2011), our review highlighted additional outcomes associated with PsyCap. Individuals high in PsyCap exhibit lower levels of absenteeism and job search behavior (Avey, Patera, & West, 2006; Avey et al., 2009; Chen & Lim, 2012). In addition, at the team-level Walumbwa, Luthans, et al. (2011) reported that high levels of PsyCap are associated with team OCBs.

Psychological capital and performance

In theory, individuals high in PsyCap have more resources to draw upon to pursue goals (Hobfoll, 2002), and therefore can perform better than those low in PsyCap (Luthans, Avolio, et al., 2007; Luthans, Norman, et al., 2008). Findings from Avey, Reichard, et al.'s (2011) meta-analysis and empirical studies support this. For example, Luthans, Avolio, et al. (2007) found that PsyCap was positively related to individual-level job performance and that it accounted for higher levels of performance over and above personality and core self-evaluations. Similarly, Avey, Nimnicht, & Pigeon (2010) found a positive relationship between PsyCap and both the financial and manager-rated performance of employees in the financial services industry. Finally, using longitudinal data Peterson et al. (2011) demonstrated that employee PsyCap was positively related to both supervisor-rated performance and their financial performance based on individual sales figures. A positive relationship between PsyCap and job performance has also been found in non-US cultures such as China (Luthans, Avey, et al., 2008; Sun, Zhao, Yang, & Fan, 2011), Portugal (Rego, Marques, Leal, Sousa, F., & Pina e Cunha, 2010), and Vietnam (Nguyen & Nguyen, 2012).

Although not addressed by Avey, Reichard, et al.'s (2011) meta-analysis, PsyCap has also been found to influence employees' creative performance, problem solving and innovation at the individual-level. For example, Sweetman et al. (2011) and Rego et al. (2012c) found that PsyCap was positively related to creative performance and Luthans et al. (2011) found that PsyCap was positively related to problem solving performance and reported innovation. Also excluded from Avey, Reichard, et al.'s (2011) meta-analysis is the relationship between PsyCap and performance at the team and organizational-levels of analysis. For example, by using an experimental design with engineers, Walumbwa et al. (2010) found that leader PsyCap was positively related to follower PsyCap, which in turn was positively related to follower performance. Walumbwa et al. (2011) developed the construct of collective PsyCap, which refers to the "group's shared psychological state of development that is characterized by … (the four attributes of individual-level psychological capital)" (p. 6, Walumbwa et al., 2011). They found that collective PsyCap was positively related to team-level performance and mediated the relationship between authentic leadership and OCBs. Likewise Clapp-Smith, Vogelgesang, and Avey (2009) observed that individual team members' PsyCap aggregated to the team level was positively related to team performance. Finally, McKenny et al. (in press) found that organizational-level PsyCap was strongly related to the subsequent financial performance of the organization.

Psychological capital and individual well-being

PsyCap has also been shown to improve the quality of employees' work and personal lives (Baron, Franklin, & Hmieleski, in press; Nguyen & Nguyen, 2010). For example, Baron et al. (in press) found that the PsyCap of entrepreneurs was positively related to their well-being through reducing stress. Further, PsyCap has also been found to influence employee well-being over time (Avey, Luthans, Smith, & Palmer, 2010; Culbertson, Fullagar, & Mills, 2010;

Luthans et al., 2013). In addition, PsyCap has also been found to explain the relationship between unemployment and wellbeing (Cole, Daly, & Mak, 2009).

Other outcomes of psychological capital

Studies have also investigated the relationship between PsyCap and other outcomes not addressed in Avey, Reichard, et al.'s (2011) meta-analysis, such as perception of safety climate, the intent of job seekers to pursue employment with a multinational enterprise, and growth intentions of entrepreneurs. Specifically, Bergheim, Eid, Hystad, Nielsen, Mearns, Larsson, & Luthans (in press) found evidence linking PsyCap to perceptions of safety climate in two separate samples of air traffic controllers, and Alkire and Avey (2013) found that individuals high in PsyCap were more likely to seek employment with a multinational enterprise. Finally, Kauko-Valli & Haapanen (2013) found that out the four dimensions of PsyCap only hope was positively related to the growth intentions of entrepreneurs.

Moderators of the Relationship between PsyCap and Workplace Outcomes

Although a great deal of research has focused on examining the relationship between PsyCap and workplace outcomes, there has been comparatively limited research on the factors which may moderate such a relationship. Our review goes beyond recent meta-analytical work (Avey, Reichard, et al., 2011) which established that PsyCap has a stronger relationship with employee performance in the services industry compared to the manufacturing industry, and in the US rather than in non-US settings, by identifying studies which have examined other boundary conditions of the PsyCap outcomes relationship at the individual and team-levels of analysis. For example, at the individual-level Norman et al. (2010) found that organizational identity moderated the relationship between employee PsyCap and their OCBs/deviant behavior, in such a way that PsyCap's positive influence was stronger when identification with the organization was higher. Walumbwa et al. (2010) found that service climate (a team-level moderator) moderated the relationship between individual-level PsyCap and job

performance whereby the relationship was stronger when service climate was more positive. Baron et al. (in press) found that the stress-reducing influence of PsyCap was stronger for older than younger entrepreneurs. Finally, Hmieleski and Carr (2008) uncovered a positive relationship between the PsyCap of entrepreneurs and new venture performance, especially for those working in dynamic industry environments.

Another stream of research not identified in the meta-analysis has treated PsyCap as a moderating variable at the individual-level of analysis, and examined how it interacts with other variables to influence work outcomes. For example, Abbas, Raja, Darr, and Bouckenooghe (in press) found that the negative relationship between organizational politics and both job performance and job satisfaction was weaker for those high in PsyCap. Roberts, Scherer, & Bowyer (2011) revealed that PsyCap moderates the relationship between stress and incivility in such a way that the relationship is weaker for those high in PsyCap. Cheung, Tang, & Tang (2011) found that PsyCap moderated the relationships between emotional labor and job satisfaction/burnout such that the relationships are weaker for those high in PsyCap. Chawick and Raver (2013) demonstrated that the negative effects of perceived resource constraints on threat approvals and continuous improvement behaviors were only significant for employees low in PsyCap.

There has also been growing work examining whether PsyCap influences follower responses to different leadership behaviors. Cunningham, DiRenzo, & Mawritz (2013) found that the negative influence of abusive supervision, in terms of leading followers to exhibit higher levels of antisocial behavior and lower levels of OCB, was stronger for those low in PsyCap. Similarly, Wang, Sui, Luthans, Wang, & Wu (in press) found that the relationship between authentic leadership and followers' job performance through leader-member exchange was stronger for those low in PsyCap.

Our review leads to four key observations. First, we note that more research has been carried out on the outcomes of PsyCap than its antecedents. This might be attributed to the relatively nascent nature of the field; scholars have concentrated on trying to show that PsyCap "makes a difference" to performance to justify continued focus on the construct. While our review is consistent with recent meta-analytical work (Avey, Reichard, et al., 2011) reporting a positive link between PsyCap and employee attitudes, behavior and performance outcomes at the individual-level of analysis, our review highlights additional outcomes not included in the meta-analysis such as absenteeism, job search behaviour, creative performance, innovation and safety climate. We also identified studies investigating antecedents of PsyCap as well as a growing number of boundary conditions in which PsyCap is more or less influential. Second, we observe that much of the research is based on cross-sectional and self-report data. Only very recently have scholars started to use longitudinal designs or incorporate other measures of PsyCap into their analyses. Third, we have noticed inconsistencies with findings relating to the nature of the relationship between PsyCap and stress at work. Whilst some work suggests that PsyCap acts as a buffer to neutralize the negative effects of stressful working environments (Abbas et al., in press; Roberts et al., 2011), other work suggests that stress at work may lead to lower levels of PsyCap amongst employees (Epitropaki, 2013; Liu et al., 2012; Wang et al., 2012). These distinctions raise questions as to whether PsyCap influences how we respond to the world, as opposed to deriving from the influences of the world. Conceptually we might anticipate that if PsyCap is indeed a psychological resource individuals can draw upon, it will play an important role in buffering the influence of various challenges thrown at the individual. We encourage future research to explore whether this is indeed the case. Finally, although most of the research is at the individual-level of analysis, as highlighted by meta-analytical work (Avey, Reichard, et al., 2011), recent work has started to

examine PsyCap as a team or organizational-level construct, and attempted to explore its relationship with team and organizational outcomes.

Agenda for Future Research

Our review of the PsyCap literature suggests that important research has been conducted over the last few years concentrating on the measurement, antecedents and outcomes of PsyCap. However, being a new field of investigation, there is significant scope to advance our knowledge of PsyCap. In this section, we develop an agenda for future research on PsyCap by highlighting three main gaps in our existing knowledge. Specifically, we call for researchers to pay more attention to possible multi-level applications of PsyCap research, study the underlying mechanisms by which PsyCap influences individual, team and organizational outcomes, and identify possible factors which may moderate the relationship between PsyCap and its outcomes at different levels of analysis. We concentrate on these three areas because we believe they have the greatest potential to enhance theorizing surrounding the PsyCap construct. Research in the three areas highlighted above will provide us with greater knowledge of why PsyCap has a positive influence on workplace outcomes at different levels of analysis, and the contexts in which PsyCap will have the greatest influence (i.e. its boundary conditions). It will also have important practical benefits through assisting organizations to design work environments and practices that assist in the development of PsyCap, and allow individuals and teams to utilize their PsyCap to their advantage and that of their employer. In Figure 1 we use information derived from our literature review to synthesize key findings from previous work, and provide an overview of the nomological network of constructs to which PsyCap in related. The new research directions identified in the future research agenda, provided in the following sections, are highlighted in italics.

Multilevel Applications and PsyCap

Although researchers have begun to study PsyCap as a team or organizational-level phenomenon (McKenny et al., in press; Walumbwa et al., 2011), existing work has predominantly conceptualized PsyCap as an individual-level construct, and examined its antecedents and relationship with work outcomes at the individual-level of analysis. Only in recent years have researchers begun to understand its application at multiple or cross levels of analysis (Walumbwa et al., 2010). Using Figure 1 as a guide, we call on researchers to assess relationships between PsyCap and other variables, at multiple or cross-levels of analysis. Advances regarding our knowledge of the antecedents and outcomes of PsyCap can be achieved through the use of multilevel research designs and analysis in the following ways. First, although a great deal of work has examined same-level direct influences at the individual level, such as the influence of individual-level PsyCap on individual-level job performance and OCBs (i.e., individual-level predictor → individual-level criterion), greater work could be conducted to examine same-level direct influences at the team or organizational-level of analysis. We believe exploring the relationship between PsyCap and outcomes at different levels of analysis confers two key advantages. First, from a conceptual perspective, such studies would not only shed light on the appropriateness of aggregating PsyCap to higher levels of analysis, it would also allow us to assess the suitability and value of the theories underlying predicted relationships. Second, from a practical perspective, an examination of the strength of relationships between PsyCap and outcomes at different levels of analysis, would allow organizations to better assess whether limited resources should be targeted toward developing PsyCap at the individual, team or organizational-level. For example, more work could to be done to examine the relationship between team-level PsyCap and team outcomes such as team satisfaction, engagement and creativity (i.e. team-level predictor → team-level criterion). As individual-level PsyCap has been found to enhance employee job satisfaction (Luthans, Avey, et al., 2008; Luthans, Avolio, et al., 2007), a

similar relationship might be expected between team PsyCap and team satisfaction. Team-level PsyCap might also be associated with team engagement given that self-efficacy, dispositional optimism and resilience are generally linked to goal persistence and engagement (Bandura & Cervone, 1986; Carver, Scheier, & Segerstrom, 2010; Fagan, Palkovitz, Roy, & Farrie, 2009; Hakanen & Lindbohm, 2008). With regard to the relationship between team-level PsyCap and creativity, it would be interesting to explore if the positive relationship between PsyCap and individual creativity (Rego et al., 2012) holds at the team-level. It is possible, for example, that managing team level creativity may be more challenging and thus for PsyCap to have a strong effect of team creativity, organizational intervention may be needed. In addition, only limited work has examined the relationship between organizational-level PsyCap and organizational-level outcomes (i.e. organizational-level predictor → organizational-level criterion). McKenny et al. (in press) argue that PsyCap is important to organization-level outcomes such as innovation performance or firm growth, especially for small and medium-sized enterprises. There is also room for further investigating how organizational-level variables such as HR systems and practices influence the development of organizational-level PsyCap (i.e. organizational-level predictor → organizational-level criterion). For example, given that prior research has revealed that high-performance work systems enhance organizational performance through the development of collective human capital (Takeuchi, Lepak, Wang, & Takeuchi, 2007), high-performance work systems might also contribute to organizational performance through the development of organizational-level PsyCap. Such work provides an empirical bridge connecting resourced based theorizing with PsyCap and the traditional micro orientation of positive psychology approaches.

Second, future research could examine different-level direct influences such as the relationship between team-level PsyCap and individual-level performance (i.e. team-level predictor → individual-level criterion) and that between high-performance work systems and

individual-level PsyCap (i.e. organizational-level predictor → individual-level criterion). This should provide a better understanding as to the relative value of different strategies aimed at PsyCap development, and their subsequent influence on work outcomes. By incorporating predictors at different levels of analysis, research will be able to inform organizations as to the comparative effectiveness of organizational-level interventions (e.g. supportive human resource practices) versus individual or team-level initiatives (e.g. investment in leadership development) in achieving a desired outcome. For example, given that recent work has shown that self-efficacy (an individual-level measure of efficacy beliefs) and collective efficacy (a team-level measure of efficacy beliefs) have differential influences on individual and team-level outcomes (Gully, Incalcaterra, Joshi, & Beaubien, 2002; Tasa, Taggar, & Seijts, 2007), future research might also examine whether individual and collective PsyCap influence outcomes at the individual and team-level in different ways. In addition, given growing evidence that predictors at the individual, team and organizational levels might be differentially associated with measures of self-efficacy and collective efficacy (Chen & Bliese, 2002), future research might examine whether organizational-level predictors of PsyCap such as HR policies, team-level predictors such as leadership, and individual-level predictors such as job characteristics, have stronger effects on individual or collective PsyCap.

Third, researchers may also examine cross-level interactions where the strength of the relationships between the individual-level predictor and outcome criterion may differ as a function of team-level or organizational/industry-level variables. Walumbwa et al. (2010) has already found that the relationship between individual-level PsyCap (i.e. an individual-level predictor) and job performance (i.e. an individual-level criterion) becomes stronger when service climate (i.e. a team-level moderator) is high versus when it is low. Future research could further investigate other potential team-level moderators such as team value

congruence, behavioral integration or cohesion (see section below on moderators). This should enable organizations to design practices at the team or organizational-level which allow PsyCap to be most effectively leveraged to the benefit of the organization. We return to the issue of moderators of the relationship between PsyCap and outcomes in the final section of our future research agenda.

Mediating Mechanisms Underlying the PsyCap/Outcomes Relationship

The PsyCap literature has tended to focus on the antecedents and outcomes of PsyCap, rather than mediators. Although, research has begun to identify potential mediators of the PsyCap/outcomes relationship such as psychological empowerment (Avey, Hughes, Norman & Luthans 2008), research in this area is still very much in its infancy. More research is needed to help us understand the underlying mechanisms through which PsyCap influences workplace outcomes (at different levels of analysis).

At the individual-level we highlight several testable explanations for why individuals high in PsyCap exhibit improved workplace outcomes than those with lower levels of PsyCap. First, an opportunity for future research concerns the extent to which PsyCap influences individual-level work outcomes through enhancing the organization-based self-esteem of employees, namely the extent to which they perceive themselves as being important and worthwhile in their employing organization (Pierce, Gardner, Cummings, & Dunham, 1989). Prior research, demonstrating that self-efficacy influences employee job performance by engendering higher levels of organization-based self-esteem, supports such a proposition (Gardner & Pierce, 1998). Second, given that positive affect partially mediates the relationship between three dimensions of PsyCap (hope, optimism and self-efficacy) and creativity (Rego, Sousa, Marques, & Pina e Cunha, 2012a; 2012b), we call for future research to investigate whether positive affect and similar constructs such as passion (Cardon, 2008), mediate the relationship between PsyCap and individual–level work outcomes such as job performance and

organizational commitment. Third, given that prior research on self-efficacy and performance indicates that individuals high in self-efficacy adjust their goal comparator based on their beliefs in their capabilities and exert greater effort towards goal achievement as a result (Locke & Latham, 1990; Seo & Ilies, 2009; Bandura, 2012), we suggest PsyCap may influence performance outcomes in a similar way. We call for researchers to investigate whether individuals high in PsyCap set higher goals for themselves and strive harder to achieve those goals, therefore performing at higher levels than those low in PsyCap. Finally, we propose that PsyCap may assist individuals to develop stronger networks with others in the workplace (Fredrickson, 2001), providing them with additional sources of emotional support and advice, and improved access to knowledge and information (Corey, Keyes, & Seligman, 2003). This in turn should enable them to perform at a higher level, as well as develop positive attitudes towards their job and the organization. Although researchers have not investigated the relationship between PsyCap and social network development in the workplace, social networks have been found to be robust predictors of employee job performance and retention (Moynihan & Pandey, 2008). In addition, one component of PsyCap, self-efficacy, has been shown to enhance academic performance in an educational setting through promoting pro-social behavior (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996). Further, more optimistic individuals have also been shown to have greater access to sources of network support than those low in optimism (Higgins, Dobrow, & Roloff, 2010). In sum, researchers might usefully consider the mechanisms through which PsyCap yields positive individual-level outcomes; namely through the enhancement of self-esteem; positive affect; goal setting and networking behavior.

At the team-level, further research is needed to provide greater understanding of the mechanisms underlying the relationship between PsyCap and team-level outcomes. For example, team-level PsyCap may influence team work outcomes by enhancing team

empowerment, potency and communication. Empirical work highlights a strong relationship between these latter variables and team work outcomes such as team commitment or team performance (Kirkman & Rosen, 1999; Gully et al., 2002).

Moderators of the PsyCap/Outcomes Relationship

Our review of the literature also highlights a dearth of research on potential moderators of the relationship between PsyCap and workplace outcomes at different levels of analysis. In order to provide us with a better understanding of the situations in which, and for whom, PsyCap will have the greatest impact, further work is needed to identify the boundary conditions of the PsyCap/work outcomes relationship at different levels of analysis. This should enable organizations to design work environments and practices that will support effective utilization of PsyCap by individuals and teams, and ascertain which individuals or teams will benefit the most from PsyCap development.

At the individual-level we might expect PsyCap to have a greater influence on work outcomes for certain individuals. For example, as PsyCap provides individuals with the confidence to build the social networks needed for access to advice and support (Saks & Gruman, 2011), organizational newcomers might benefit more from having higher levels of PsyCap those with longer tenure who already have access to social networks and the requisite knowledge to function effectively in the workplace. PsyCap might also be of greater benefit to minority groups in the workplace such as migrant workers, given that it will provide them with the confidence to seek much needed support and advice from others in the workplace (Combs et al., 2012). The relationship between PsyCap and work outcomes might also be expected to be stronger when the individual has higher levels of human and/or social capital, because the beliefs and motivation associated with higher levels of PsyCap may help channel and put to best use these other forms of capital.

In addition, certain job or task characteristics might be expected to accentuate or attenuate the influence of PsyCap on work outcomes. For example, as recent empirical research demonstrates that self-efficacy only has a significant positive effect on job performance in jobs of low rather than medium or high complexity (Judge, Jackson, Shaw, Scott, & Rich, 2007), PsyCap might have a greater effect on performance outcomes where jobs or tasks as less complex. In addition, as a negative link has been found between self-efficacy and performance in jobs with high levels of performance ambiguity as a result of individuals reducing effort allocation than in jobs with low levels of ambiguity (Schmidt & DeShon, 2010), PsyCap is likely to be more effective when employees are provided with greater clarity as to what is expected of them in their job. In contrast where there are high degrees of performance ambiguity PsyCap is unlikely to have a positive influence on job performance and may even have a negative effect.

At the team-level, researchers might examine potential moderators of the PsyCap/workplace outcomes relationship such as team value congruence (Brown & Trevino, 2006), behavioral integration (Simsek, Veiga, Lubatkin, & Dino, 2005) or cohesion (Beal, Cohen, Burke, & McLendon, 2003). Such factors might be expected to heighten the influence of team-level PsyCap on team-level outcomes, given prior work suggests that when there is greater consensus and shared understanding between team members, they are better able to channel their group efficacy towards goal setting and achievement (Gibson & Earley, 2007). As recent research established that access to team informational resources enhances the link between self-efficacy and creativity (Richter, Hirst, van Knippenberg and Baer, 2012), PsyCap may be expected to generate stronger outcomes for individuals operating in supportive and stimulating team climates. In addition to team climates, more participative or authentic styles of leadership, although often viewed as an antecedent to PsyCap, might facilitate the deployment of PsyCap by individuals. For example, even though employees or

teams report high levels of PsyCap, leadership may be needed to channel this in the right way to guide the behaviors that yield superior outcomes. Indeed, Hitt and Ireland (2002) call for strategic leadership that evaluates, changes, (re)configures and leverages intangible resources (such as human and social capital) in order to create sustainable competitive advantage. As such, while we expect participative or authentic styles of leadership to accentuate the positive relationship between PsyCap and desired outcomes, other more paternalistic or authoritarian styles of leadership may constrain the deployment of individual PsyCap. In the latter case (i.e. where paternalistic or authoritarian styles of leadership are enacted), there may even be a negative relationship between PsyCap and work outcomes.

Finally, more work may be done to examine how organizational or industry-level factors moderate the influence of PsyCap on work outcomes at different levels of analysis. As highlighted in the review, prior work provides some evidence in favor of such a proposition, namely that individual-level PsyCap has a greater influence on employee work outcomes in the more dynamic service sector compared to manufacturing (Avey, Reichard, et al., 2011). However, this stream of research could be refined to consider other environmental characteristics such as knowledge or labor intensity; the level of industrial competition; the degree of industry-wide cooperation (e.g. in the form of alliances, joint ventures etc.); and market dynamism. In addition, PsyCap might be expected to have a stronger influence in more individualistic cultures such as the US where cultural values ascribe individual rights over collective responsibilities. In such cultures, facets of self-belief such as hope, optimism and self-efficacy will speak to these values, in turn energizing the individual into action.

Although our main focus in the section has been on suggesting potential moderators of the PsyCap/work outcomes relationship, future research may also investigate moderators of the relationship between PsyCap and its antecedents such as leadership behavior. For example, researchers might examine whether the personality and demographic characteristics of

followers influence the relationship between leadership behavior and PsyCap, given that prior research has shown such factors to influence the attitudinal and behavioral response of followers to their leaders (Antonakis, Day, & Schyns, 2012).

To conclude, we agree with Luthans et al. (2007) that PsyCap is an untapped human resource that can be developed and sustained with the potential to generate competitive advantage. Thus research that helps us understand how, why and to what extent PsyCap contributes to workplace outcomes at multiple levels of analysis is of crucial importance for individuals and organizations alike.

References

*Abbas, M., Raja, U., Darr, W., & Bouckenooghe, D. (in press). Combined effects of perceived politics and psychological capital on job satisfaction, turnover intentions, and performance. *Journal of Management*, forthcoming.

Acedo, F. J., Barroso, C., & Galan, J. L. (2006). The resource-based theory: Dissemination and main trends. *Strategic Management Journal*, *27*, 621-636.

Akinola, M. (2010). Measuring the pulse of an organization: Integrating physiological measures into the organizational scholar's toolbox. *Research in Organizational Behavior*, *30*, 203-233.

*Alkire, T. D., & Avey, J. B. (2013). Psychological capital and the intent to pursue employment with developed and emerging market multinational corporations. *Human Resource Development International*, *16*, 40-55.

Antonakis, J., Day, D., & Schyns, B. (2012). Leadership and individual differences: At the cusp of a renaissance. *Leadership Quarterly*, *23*, 643-650.

*Ardichvili, A. (2011). Invited reaction: Meta-analysis of the impact of psychological capital on employee attitudes, behaviors, and performance. *Human Resource Development Quarterly*, *22*, 153-156.

Avey, J. B., Avolio, B. & Luthans, F. (2011). Experimentally analyzing the impact of leader positivity on follower positivity and performance. *Leadership Quarterly*, *22*, 282–294.

Avey, J. B., Hughes, L. W., Norman, S. M., & Luthans, K. (2008). Using positivity, transformational leadership and empowerment to combat employee negativity. *Leadership and Organization Development Journal*, *29*, 110–126.

*Avey, J. B., Luthans, F., & Jensen, S. (2009). Psychological capital: A positive resource for combating employee stress and turnover. *Human Resource Management*, *48*, 677–693

Avey, J. B., Luthans, F., & Mhatre, K. H. (2008). A call for longitudinal research in positive organizational behaviour. *Journal of Organizational Behavior*, *29*, 705–711.

*Avey, J. B., Luthans, F., Smith, R. M., & Palmer, N. F. (2010). Impact of positive psychological capital on employee well-being over time. *Journal of Occupational Health Psychology*, *15*, 17-28.

*Avey, J. B., Luthans, F., & Youssef, C. M. (2010). The additive value of positive psychological capital in predicting work attitudes and behaviors. *Journal of Management*, *36*, 430-452.

*Avey, J. B., Patera, J. L., & West, B. J. (2006). The implications of positive psychological capital on employee absenteeism. *Journal of Leadership and Organizational Studies*, *13*, 42-60.

*Avey, J. B., Nimnicht, J. L., & Pigeon, N. G. (2010). Two field studies examining the association between positive psychological capital and employee performance, *Leadership & Organization Development Journal*, *31*, 384-401.

*Avey, J. B. Reichard, R. J., Luthans, F., & Mhatre, K. H. (2011). Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance, *Human Resource Development Quarterly*, *22*, 127-152.

*Avey, J. B., Wernsing, T. S., & Luthans, F. (2008). Can positive employees help positive organizational change? Impact of psychological capital and emotions on relevant attitudes and behaviors. *Journal of Applied Behavioral Science*, *44*, 48-70.

Bandura, A. (1977). *Social learning theory*. New York: General Learning Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.

Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management*, *38*, 9-44.

Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (1996). Multifaceted impact of self-efficacy beliefs on academic functioning. *Child Development*, *67*, 1206-1222.

Bandura, A. & Cervone, D. (1986). Differential engagement of self-reactive influences in cognitive motivation. *Organizational Behavior and Human Decision Processes*, *38*, 92-113.

*Baron, R. A., Franklin, R. J., & Hmieleski, K. M. (in press). Why entrepreneurs often experience *low*, not high, levels of stress: the joint effects of selection and psychological capital. *Journal of Management*, forthcoming.

Beal, D. J., Cohen, R. R., Burke, M. J., & McLendon, C. L. (2003). Cohesion and performance in groups: A meta-analytic clarification of construct relations. *Journal of Applied Psychology*, *88*, 989-1004.

Becker, G. S. (1993). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education.* Chicago: University of Chicago Press.

*Bergheim, K., Eid, J., Hystad, S. W., Nielsen, M. B., Mearns, K., Larsson, G., & Luthans, B. (in press), The role of psychological capital in perception of safety climate among air traffic controllers. *Journal of Leadership and Organizational Studies*, forthcoming.

Bourdieu, P. (1986). The forms of capital. In J.G. Richardson (Ed.), *Handbook of theory and research for the sociology of education*. New York: Greenwood Press.

Brown, M., & Trevino, L. (2006). Socialized charismatic leadership, values congruence, and deviance in work groups. Journal of Applied Psychology, *91*, 954–962.

Cameron, K., Dutton, J., & Quinn, R. (2003). *Positive Organizational Scholarship*. San Francisco, CA: Berrett-Koehler Publishers.

Cardon, M. S. (2008). Is passion contagious? The transference of entrepreneurial passion to employees. *Human Resource Management Review, 18*, 77-86.

Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). *Optimism. Clinical Psychology Review, 30*, 879-889.

*Caza, A., Bagozzi, R. P., Wooley, L., Levy, L., & Caza, B.B. (2010). Psychological capital and authentic leadership: Measurement, gender, and cultural extension. *Asia-Pacific Journal of Business Administration, 2*, 53-70.

*Chadwick, I. C., & Raver, J. L. (2013). Continuously improving in tough times: Overcoming resource constraints with psychological capital. Orlando, Florida, US: Academy of Management Conference 2013.

Chen, G. & Bliese, P. D. (2002). The role of different levels of leadership in predicting self- and collective efficacy: Evidence for discontinuity. *Journal of Applied Psychology, 87*, 549-556.

*Chen, D. J. Q., & Lim, V. K. G. (2012). Strength in adversity: The influence of psychological capital on job search. *Journal of Organizational Behavior, 33*, 811-839.

*Cheung, F., Tang, K. S., & Tang, S. (2011). Psychological capital as a moderator between emotional labor, burnout, and job satisfaction among school teachers in China. *International Journal of Stress Management, 18*, 348-371.

*Clapp-Smith, R. O., Vogelgesang, G., & Avey, J. B. (2009). Authentic leadership and positive psychological capital: The mediating role of trust at the meso-level of analysis. *Journal of Leadership and Organization Studies, 15*, 227–240.

Coff, R. W., & Kryscynski, D. (2011). Invited editorial: drilling for micro-foundations of human capital–based competitive advantages. *Journal of Management*, *37*, 1429–1443.

*Cole, K., Daly, A., & Mak, A. (2009). Good for the soul: The relationship between work, wellbeing and psychological capital. *The Journal of Socio-Economics*, *38*, 464-474.

Coleman, J.S. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, *94*, 95–120.

*Combs, G. M., Milosevic, I., Jeung, W., & Griffith, J. (2012). Ethnic identity and job attribute preferences: The role of collectivism and psychological capital. *Journal of Leadership and Organization Studies*, *19*, 5-16.

Corey, L. M., Keyes, J. H., & Seligman, M. (2003). *Flourishing: Positive psychology and the life well-lived*. Washington DC: American Psychological Association.

Crook, T. R., Ketchen Jr., D. J., Combs, J. G., & Todd, S. Y. (2008). Strategic resources and performance: A meta-analysis. *Strategic Management Journal*, *29*, 1141-1154.

Crook**,** T. R., Todd, S. Y., Combs, J. G., Woehr, D. J., & Ketchen, D. J. (2011). Does human capital matter? A meta-analysis of the relationship between human capital and firm performance. *Journal of Applied Psychology*, *96*, 443-456.

*Culbertson, S. S., Fullagar, C. J., & Mills, M. J. (2010). Feeling good and doing great: The relationship between psychological capital and well-being. *Journal of Occupational Health Psychology*, *15*, 421-433.

*Cunningham, Q. W., DiRenzo, M. S., & Mawritz, M. B. (2013). Abusive supervision and employee outcomes: The influence of psychological contract violation and psychological capital. Orlando, Florida, US: Academy of Management Conference 2013.

*Dawkins, S., Martin, A., Scott, J., & Sanderson, K. (in press). Building on the positives: A psychometric review and critical analysis of the construct of Psychological Capital. *Journal of Occupational and Organizational Psychology*, forthcoming.

*Demerouti, E., van Eeuwijk, E., Snelder, M., & Wild, U. (2011). Assessing the effects of a "personal effectiveness" training on psychological capital, assertiveness and self-awareness using self-other agreement. *Career Development International*, *16*, 60-81.

Duriau, V. J., Reger, R. K., & Pfarrer, M. D. (2007). A content analysis of the content analysis literature in organization studies: Research themes, data sources, and methodological refinements. *Organizational Research Methods*, *10*, 5-34.

*Epitropaki, O. (2013). Employment uncertainty and the role of authentic leadership and positive psychological capital. Orlando, Florida, US: Academy of Management Conference 2013.

Fagan, J., Palkovitz, R., Roy, K., & Farrie, D. (2009). Pathways to paternal engagement: Longitudinal effects of risk and resilience on non-resident fathers. *Developmental Psychology*, *45*, 1389-1405.

Fiol, C. M. (1995). Corporate communications: Comparing executives' private and public statements. *Academy of Management Journal*, *38*, 522–536.

Foss, N. J. (2011). Micro-foundations for resource-based theory. *Journal of Management*, *37*, 1413–1428.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, *56*, 218-226.

Gardner, D. G., & Pierce, J. L. (1998). Self-esteem and self-efficacy within the organizational context: An empirical examination. *Group & Organization Management*, *23*, 48-70.

Gibson, C. B., & Earley, P. C. (2007). Collective cognition in action: Accumulation, interaction, examination and accommodation in the development and operation of group efficacy beliefs in the workplace. *Academy of Management Review*, *32*, 438-458.

González-Romá, V., Fortes-Ferreira, L., & Peiró, J.M. (2009). Team climate, climate strength and team performance. A longitudinal study. *Journal of Occupational and Organizational Psychology, 82*, 511-536.

*Gooty, J., Gavin, M., Johnson, P., Frazier, L., & Snow, D. (2009). In the eyes of the beholder: Transformational leadership, positive psychological capital and performance. *Journal of Leadership and Organization Studies*, *15*, 353–357.

Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American Journal of Sociology*, *91*, 481-510.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, *17*, 109–122.

Gully, S. M., Incalcaterra, K. A., Joshi, A., & Beaubien, J. M. (2002). A meta-analysis of team-efficacy, potency, and performance: Interdependence and level of analysis as moderators of observed relationships. *Journal of Applied Psychology*, 87, 819-832.

Hakanen, J. J., & Lindbohm, M. L. (2008). Work engagement among breast cancer survivors and the references: The importance of optimism and social resources at work. *Journal of Cancer Survivorship*, *2*, 283-295.

*Harms, P. D., & Luthans, F. (2012). Measuring implicit psychological constructs in organizational behavior: An example using psychological capital. *Journal of Organizational Behavior*, *33*, 589-594.

Higgins, M., Dobrow, S. R., & Roloff, K. S. (2010). Optimism and the boundaryless career: The role of developmental relationships. *Journal of Organizational Behavior*, *31*, 749-769.

Hitt, M. A., & Ireland, R. D. (2002). The essence of strategic leadership: Managing human capital and social capital. *Journal of Leadership and Organisation Studies*, *9*, 3-14.

Hobfoll, S. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, *6*, 307–324.

*Hmieleski, K. M., & Carr, J. C. (2008). The relationship between entrepreneur psychological capital and new venture performance. *Frontiers of Entrepreneurship Research*. Babson Park, MA: Babson College.

*Jensen, S., & Luthans, F. (2006). Relationship between entrepreneurs' psychological capital and their authentic leadership. *Journal of Managerial Issues*, *13*, 254-273.

Johnson, R. E., Rosen, C. C., & Djurdjevic, E. (2011). Assessing the impact of common method variance on higher-order multidimensional constructs. *Journal of Applied Psychology*, *96*, 744-761.

Johnson, R. E., Rosen, C. C., Chang, C. H., Djurdjevic, E., & Taing, M. U. (in press). Recommendations for improving the construct clarity of higher-order multidimensional constructs. *Human Resource Management Review*, forthcoming.

Judge, T. A., Jackson, C. L., Shaw, J. C., Scott, B. A., & Rich, B. L. (2007). Self-efficacy and work-related performance: The integral role of individual differences. *Journal of Applied Psychology*, *92*, 107-127.

Judge, T., Hurst, C., & Simon, L. (2009). Does it pay to be smart, attractive, or confident (or all three)? Relationships among general mental ability, physical attractiveness, core self-evaluations, and income. *Journal of Applied Psychology*, *94*, 742-755.

*Kauko-Valli, S. A., & Haapanen, M. (2013). Positive psychological capital and growth intentions of entrepreneurs. Orlando, Florida, US: Academy of Management Conference 2013.

Kirkman, B. L., & Rosen, B. (1999). Beyond self-management: Antecedents and consequences of team empowerment. *Academy of Management Journal*, *41*, 58-74.

Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science, 3*, 383–397.

*Larson, M., & Luthans, F. (2006). Potential added value of psychological capital in predicting work attitudes. *Journal of Leadership and Organization Studies, 13,* 45-62.

Lee, N., & Chamberlain, L. (2007). Neuroimaging and psychophysiological measurement in organizational research. *Annals of the New York Academy of Sciences, 1118,* 18-42.

*Liu, Y. (2013). Moderating effect of positive psychological capital in Taiwan's life insurance industry. *Social Behavior and Personality, 41,* 109-112.

*Liu, L., Chang, Y., Fu, J., Wang, J., & Wang, L. (2012). The mediating role of psychological capital on the association between occupational stress and depressive symptoms among Chinese physicians: A cross-sectional study. *BMC Public Health, 12,* 219-227.

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice-Hall.

Lubatkin, M. H., Simsek, Z., Ling, Y., & Vega, J. F. (2006). Ambidexterity and performance in small to medium-sized firms: The pivotal role of top management team behavioral integration. *Journal of Management, 32,* 646-672.

*Luthans, F. (2012). Psychological capital: Implications for HRD, retrospective analysis, and future directions. *Human Resource Development Quarterly, 23,* 1-8.

*Luthans, F., Avey, J. B., Avolio, B. J., Norman, S., Combs, G. (2006). Psychological capital development: Toward a micro-intervention. *Journal of Organizational Behavior, 27,* 387–393.

*Luthans, F., Avey, J. B., Avolio, B. J., & Peterson, S. J. (2010). The development and resulting performance impact of positive psychological capital. *Human Resource Development Quarterly, 21,* 41–67.

*Luthans, F., Avey, J. B., Clapp-Smith, R., & Li, W. (2008). More evidence on the value of Chinese workers' psychological capital: A potentially unlimited competitive resource? *International Journal of Human Resource Management, 19*, 818–827.

*Luthans, F., Avey, J. B., & Patera, J. L. (2008). Experimental analysis of a web-based training intervention to develop psychological capital. *Academy of Management Learning and Education, 7*, 209–221.

*Luthans, F., Avolio, B. J., Avey, J. B., & Norman, S. M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology, 60*, 541–572.

*Luthans, F., Avolio, B. J., Walumbwa, F., Li, W. (2005). The psychological capital of Chinese workers: Exploring the relationship with performance. *Management and Organization Review, 1*, 247–269.

*Luthans, B. C., Luthans, K. W., & Jensen, S. M. (2012). The impact of business school students' psychological capital on academic performance. *Journal of Education for Business, 87*, 253-259.

*Luthans, F., Norman, S. M., Avolio, B. J., & Avey, J. B. (2008). The mediating role of psychological capital in the supportive organizational climate-employee performance relationship. *Journal of Organizational Behavior, 29*, 219–238.

*Luthans, F., Vogelgesang, G. R., & Lester, P. B. (2006). Developing the psychological capital of resiliency. *Human Resource Development Review, 5*, 25–44.

*Luthans, F., & Youssef, C.M. (2004). Human, social, and now positive psychological capital management. *Organizational Dynamics, 33*, 143–160.

Luthans, F., & Youssef, C.M. (2007). Emerging positive organizational behavior. *Journal of Management, 33*, 321-349.

Luthans, F., Youssef, C. M., & Avolio, B. J. (2007). *Psychological capital: Developing the human competitive edge*. Oxford, UK: Oxford University Press.

*Luthans, F., Youssef, C. M., & Rawski, S. L. (2011). A tale of two paradigms: The impact of psychological capital and reinforcing feedback on problem solving and innovation. *Journal of Organizational Behavior Management, 31*, 333-350.

*Luthans, F., Youssef, C. M., Sweetman, D. S., & Harms, P. D. (2013). Meeting the leadership challenge of employee well-being through relationship PsyCap and health PsyCap. *Journal of Leadership and Organizational Studies, 20*, 118-133.

*Luthans, K. W., & Jensen, S. M. (2005). The linkage between psychological capital and commitment to organizational mission. *Journal of Nursing Administration, 35*, 304-310.

Masten, A. S., & Reed, M. G. J. (2002). Resilience in development. In C. R. Snyder, & S. Lopez (Eds.), *Handbook of positive psychology* (pp. 74–88). Oxford, UK: OUP.

*Mathe, K., & Scott-Halsell, S. (2012). The effects of perceived external prestige on positive psychological states in quick service restaurants. *Journal of Human Resources in Hospitality & Tourism, 11*, 354-372.

Mathieu, J. E., & Chen, G. (2011). The etiology of the multilevel paradigm in management research. *Journal of Management, 37*, 610-641.

*McKenny, A. F., Short, J. C., & Payne, G. T. (in press). Using computer aided text analysis to elevate constructs: An illustration using psychological capital. *Organizational Research Methods*, forthcoming.

*McMurray, A. J., Pirola-Merlo, A., & Sarros, J. C. (2010). Leadership, climate, psychological capital, commitment, and wellbeing in a non-profit organization. *Leadership and Organization Development Journal, 31*, 436-457.

Menon, T., Morris, M. W., Chiu, C. Y., & Hong, Y. Y. (1999). Culture and the construal of agency: Attribution to individual versus group dispositions. *Journal of Personality and Social Psychology, 76,* 701-717.

Mitchell, R., Parker, V., Giles, M., Joyce, P., & Chiang, V. (2012). Perceived value congruence and team innovation. *Journal of Occupational and Organizational Psychology, 85,* 626-648.

Moynihan, D. P., & Pandey, S. K. (2008). The ties that bind: Social networks, person-organization value fit, and turnover intention. *Journal of Public Administration Research and Theory, 18,* 205-227.

Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital and the organizational advantage. *Academy of Management Review, 23,* 242-266.

Newbert, S. L. (2007). Empirical research on the RBV of the firm: An assessment and suggestions for future research. *Strategic Management Journal, 28,* 121-146.

*Ngo, H. Y., Foley, S., Ji, M. S., & Loi, R. (in press). Linking gender role orientation to subjective career success: the mediating role of psychological capital. *Journal of Career Assessment*, forthcoming.

*Nguyen, T. D., & Nguyen, T. T. M. (2012). Psychological capital, quality of work life, and quality of life of marketers: Evidence from Vietnam. *Journal of Macromarketing, 32,* 87-95.

*Nigah, N., Davis, A. J., & Hurrell, S. A. (2012). The impact of buddying on psychological capital and work engagement: An empirical study of socialization in the professional services sector. *Thunderbird International Business Review, 54,* 891-905.

*Norman, S. M., Avey, J. B., Nimnicht, J. L., & Graber-Pigeon, N. P. (2010). The interactive effects of psychological capital and organizational identity on employee citizenship and deviance behaviors. *Journal of Leadership and Organization Studies, 17,* 380–391.

Pearce, C. L., & Conger, J. A. (2003). All those years ago: The historical underpinnings of shared leadership. In C. L. Pearce, & J. A. Conger (Eds.), *Shared leadership: Reframing the hows and whys of leadership* (pp. 1–18). Thousand Oaks, CA: Sage.

Peterson, C. (2006). *A primer in positive psychology.* New York, NY: OUP

Peterson, S. J., Walumbwa, F. O., Byron, K., & Myrowitz, J. (2009). CEO positive psychological traits, transformational leadership, and firm performance in high-technology start-up and established firms. *Journal of Management*, *35*, 348-368.

*Peterson, S. J., Luthans, F., Avolio, B. J., Walumbwa, F. O., & Zhang, Z. (2011). Psychological capital and employee performance: A Latent Growth Modelling Approach. *Personnel Psychology*, *64*, 427-450.

Pierce, J. L., Gardner, D. G., Cummings, L. L., & Dunham, R. B. (1989). Organization-based self-esteem: Construct definition, measurement and validation. *Academy of Management Journal*, *32*, 622-648.

Podsakoff, P. M., Mackenzie, S. B., & Podsakoff, N. P. (2003). Common method bias in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*, 879-903.

Preacher, K. J., Zyphur, M. J., & Zhang, Z. (2010). A general multilevel SEM framework for assessing multilevel mediation. *Psychological Methods*, *15*, 209-233.

Preacher, K. J., Zhang, Z., & Zyphur, M. J. (2011). Alternative methods for assessing mediation in multilevel data: The advantages of multilevel SEM. *Structural Equation Modeling*, *18*, 161-182.

*Rego, A., Marques, C., Leal, S., Sousa, F., & Pina e Cunha, M. (2010). Psychological capital and performance of Portuguese civil servants: exploring neutralizers in the context of an appraisal system. *International Journal of Human Resource Management*, *21*, 1531–1552.

Rego, A., Sousa, F., Marques, C., & Pina e Cunha, M. (2012a). Retail employees' self-efficacy and hope predicting their positive affect and creativity. *European Journal of Work and Organizational Psychology*, *21*, 923-945.

Rego, A., Sousa, F., Marques, C., & Pina e Cunha, M. (2012b). Optimism predicting employees' creativity: The mediating role of positive affect and the positivity ratio. *European Journal of Work and Organizational Psychology*, *21*, 244-270.

*Rego, A., Sousa, F., Marques, C., & Pina e Cunha, M. (2012c). Authentic leadership promoting employees' psychological capital and creativity. *Journal of Business Research*, *65*, 429-437.

Richter, A. W., Hirst, G., van Knippenberg, D., & Baer, M. (2012). Creative self-efficacy and individual creativity in team contexts: Cross-level interactions with team informational resources. *Journal of Applied Psychology*, *97*, 1282-1290.

*Roberts, S., Scherer, L. & Bowyer, C. (2011). Job stress and incivility: What role does psychological capital play? *Journal of Leadership & Organizational Studies*, *18*, 449-58.

Saks, A. M. & Gruman, J. A. (2011). Organizational socialization and positive organizational behaviour: Implications for theory, research, and practice. *Canadian Journal of Administrative Sciences*, *28*, 14-26.

Scheier, M. F., Carver, C. S., & Bridges, M. W. (2001). Optimism, pessimism, and psychological well-being. In E. C. Chang (Ed.), *Optimism & Pessimism: Implications for Theory, Research, and Practice* (pp. 198-216). Washington DC: APA.

Schmidt, A. M., & DeShon, R. P. (2010). The moderating effects of performance ambiguity on the relationship between self-efficacy and performance. *Journal of Applied Psychology*, *95*, 572-581.

Schneider, B., Salvaggio, A. N., & Subirats, M. (2002). Climate strength: a new direction for climate research. *Journal of Applied Psychology*, *87*, 220-229.

Seligman, M. E. P. (1998). *Learned optimism.* New York, NY: Pocket Books.

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology. *American Psychologist, 55*, 5–14.

Seo, M., & Ilies, R. (2009). The role of self-efficacy, goal, and affect in dynamic motivational self-regulation. *Organizational Behavior and Human Decision Processes, 109*, 120–133.

Short, J. (2009). The art of writing a review article. *Journal of Management, 35*, 1312-1317.

Simsek, Z., Veiga, J. F., Lubatkin, M., & Dino, R. (2005). Modeling the multilevel determinants of top management team behavioral integration, *Academy of Management Journal*, *48*, 69-84.

Snyder, C. R., Sympson, S., Ybasco, F., Borders, T., Babyak, M., & Higgins, R. (1996). Development and validation of the state hope scale. *Journal of Personality and Social Psychology*, *70*, 321–335.

Souitaris, V. & Maestro, M. (2009). Polychronicity in top management teams: The impact of strategic decision making processes and performance of new technology ventures. *Strategic Management Journal, 31*, 652-678.

Srivastava, A., Locke, E. A., Judge, T. A., & Adams, J. W. (2010). Core self-evaluations as causes of satisfaction: The mediating role of seeking task complexity. *Journal of Vocational Behavior, 77*, 255-265.

Stajkovic, A. D., & Luthans, F. (1988). Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin, 124*, 240-261.

Steptoe, A., Dockray, S., & Wardle, J. (2009). Positive affect and psychobiological processes relevant to health. *Journal of Personality, 77*, 1747-1776.

*Story, J. S. P., Youssef, C. M., Luthans, F., Barbuto, J. E., & Bovaird, J. (in press) Contagion effect of global leaders' positive psychological capital on followers: does

distance and quality of relationship matter? *International Journal of Human Resource Management*, forthcoming.

*Sun, T., Zhao, X. W., Yang, L. B., & Fan, L. H. (2012). The impact of psychological capital on job embeddedness and job performance among nurses: a structural equation approach. *Journal of Advanced Nursing*, *68*, 69–79.

*Sweetman, D., Luthans, F., Avey, J. B., & Luthans, B. (2011). Relationship between positive psychological capital and creative performance. *Canadian Journal of Administrative Science*s, *28*, 4-13.

Takeuchi, R., Lepak, D. P., Wang, H., & Takeuchi, K. (2007). An empirical examination of the mechanisms mediating between high-performance work systems and the performance of Japanese organizations. *Journal of Applied Psychology*, *92*, 1069-1083.

Tasa, K., Taggar, S., & Seijts, G. H. (2007). The development of collective efficacy in teams: A multilevel and longitudinal perspective. *Journal of Applied Psychology*, *92*, 17-27.

Tekleab, A. G., Quigley, N. R., & Tesluk, P. E. (2009). A longitudinal study of team conflict, conflict management, cohesion, and team effectiveness. *Group & Organization Management*, *34*, 170-205.

Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, *86*, 320-333.

*Walumbwa, F. O., Luthans, F., Avey, J. B., & Oke, A. (2011). Authentically leading groups: The mediating role of collective psychological capital and trust. *Journal of Organizational Behavior*, *32*, 4–24.

*Walumbwa, F. O., Peterson, S. J., Avolio, B. J., & Hartnell, C. A. (2010). An investigation of the relationship between leader and follower psychological capital, service climate and job performance. *Personnel Psychology*, *63*, 977–1003.

* Wang, H., Sui, Y., Luthans, F., Wang, D., Wu, Y. (in press). Impact of authentic leadership on performance: Role of followers' positive psychological capital and relational processes. *Journal of Organizational Behavior*, forthcoming.

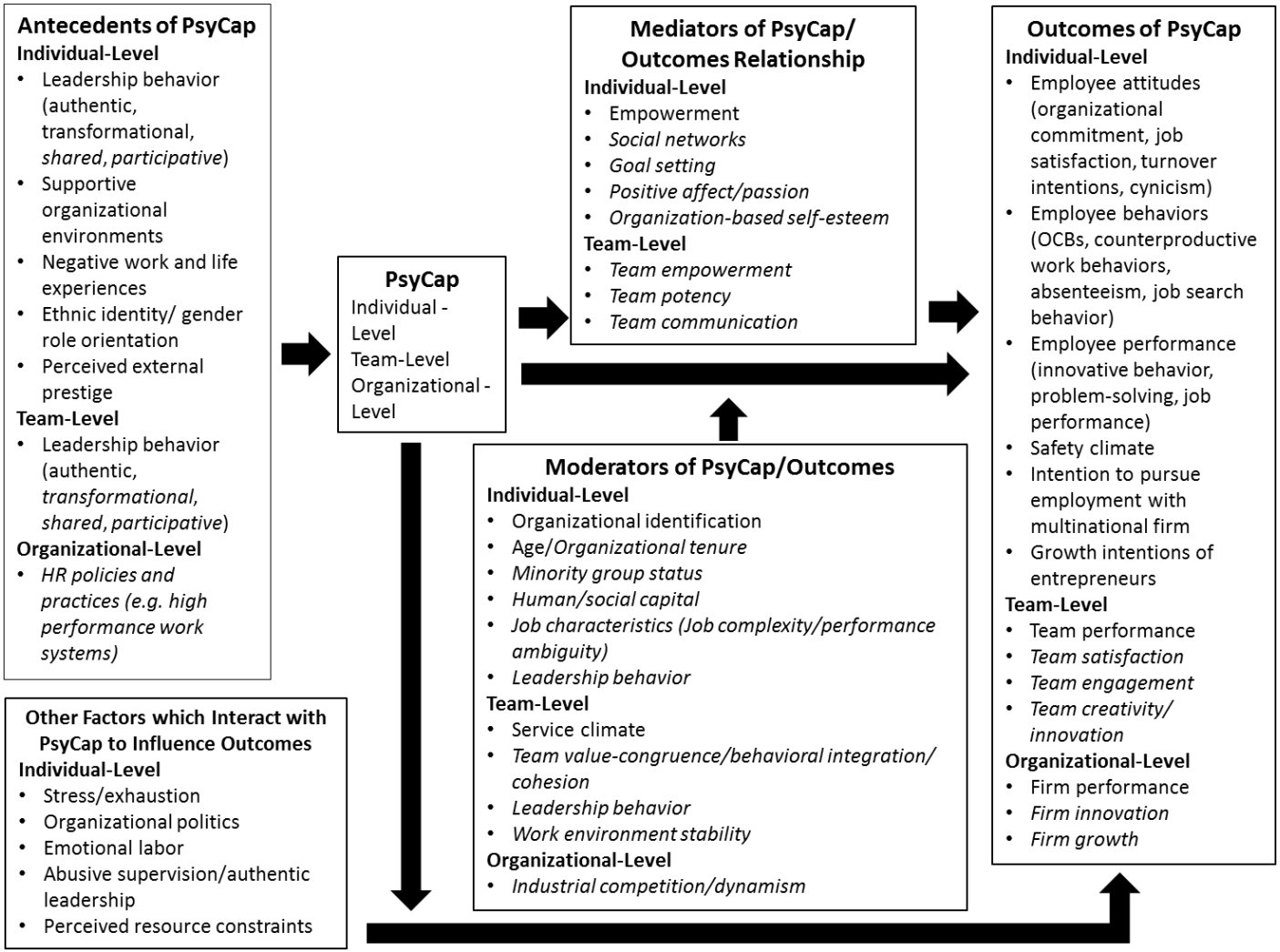
*Wang, Y., Liu, L., Wang, J., & Wang, L. (2012). Work-family conflict and burnout among Chinese doctors: The mediating role of psychological capital. *Journal of Occupational Health, 54*, 232-240.

*Wooley, L., Caza, A., & Levy, L. (2013). Authentic leadership and follower development: psychological capital, positive work climate, and gender. *Journal of Leadership and Organizational Studies*, *18*, 438-448.

Wright, T. A. (2003). Positive organizational behavior: An idea whose time has truly come. *Journal of Organizational Behavior, 24*, 437–442.

*Zhong, L. (2007). Effects of psychological capital on employees' job performance, organizational commitment, and organizational citizenship behaviour. *Acta Psychologica Sinica*, *39*, 328-334.

Figure 1: An Organizing Framework for Extant and Future Research on Psychological Capital (PsyCap) [1]



[1] Italicized items relate to new themes identified in the future research agenda