DOCTOR OF BUSINESS ADMINISTRATION

Evaluating authentic behaviour change in leadership development programmes

Enric Bernal

2013

Aston University

EVALUATING AUTHENTIC BEHAVIOUR CHANGE IN LEADERSHIP DEVELOPMENT PROGRAMMES

ENRIC BERNAL

Doctor of Business Administration

ASTON UNIVERSITY

June 2013

THESIS SUMMARY

EVALUATING AUTHENTIC BEHAVIOUR CHANGE IN LEADERSHIP DEVELOPMENT PROGRAMMES

ENRIC BERNAL
Doctor of Business Administration
ASTON UNIVERSITY
June 2013

The global economic crisis that hit the western countries strongly has emphasised the need to abandon the economic-performance significance of leadership and return to a meaning-making significance. While a lot of research has been done in the field of leadership and management disciplines, little has been done on how to develop leadership. This study evaluated the degree in which leadership training in the marketplace today was effective at developing authentic leadership and, therefore, at changing individual behaviour.

Since none of the leadership theories address how behavioural change is actually achieved, theories of change were integrated in the current study. A conceptual model combining Authentic Leadership Development (ALD) theory and the Theory of Planned Behaviour (TPB) was proposed. Furthermore, this study explored the relationship between a positive contemplation of change and the actual change observed in individuals after the leadership intervention.

In order to test this conceptualisation, a longitudinal quasi-experimental study was conducted. Leaders were surveyed in this study one month before and one month after the programme. Three complementary questionnaires were distributed to participants in one of four leadership development programmes (two corporate initiatives and two business-school programmes).

Analyses showed that leaders who attended a leadership intervention (as compared to a control group) developed higher levels of authentic leadership, as rated by themselves and others in their working environment and controlling for baseline scores. The results also indicated that intentions were developed through the interventions and that the development of such intentions translated into changes in authentic behaviour. Intentions mediated the relationship between attitude and authentic leadership. In addition, when contemplation of change was high and attitudes towards authentic leadership were positive, the development of intentions was stronger. The implications of these findings for the theory and practice of leadership development programmes and the impact on organisational performance are discussed.

Key words: *Authentic Leadership Development (ALD), Theory of Planned Behaviour (TPB), Programme Evaluation, Change Readiness, Stages of change.*

ACKNOWLEDGEMENTS

This project is the result of hard work and the collaboration of many individuals who assisted me in the development of this research study and the writing of the thesis.

First of all, I would like to thank my supervisors: Prof. Helen Higson, Prof. Michael West, and Prof. Geoff Thomas for their help, their guidance and their patience with the development of this endeavour. Thank you also to Allan Lee, doctoral researcher at the work and organisational psychology for his help during the intense data analysis period.

This research would have not been possible without the collaboration the four organisations from which data was obtained:

Specially, I would like to thank David Jestaz, Head of Corporate University at EDF for his generous funding to my studies and for being the first organisation that agreed to participate in this research.

Thank you to Gene Johnson, former Head of EMEA Talent Management at DELL, which opened the doors of this corporation to this study.

Thank you also to Aline Masuda, co-Head of HR Academic Department and Marjolein Overmars, EMBA Programme Manager at EADA for allowing me to collect data from students at this business school and for providing me with the electronic software to manage surveys on-line.

And thank you to Martin Flash, GMP Programme Manager, CEDEP for agreeing, last minute, to participate in this research study and for his patience in obtaining aggregated results.

I also would like to thank Ranjit Gil and Jeanette Ikuomola for all administrative assistance and guidance that during these years have provided me.

Lastly, I would like to thank my wife, Kelly Simmons, provided me with the "family space" to take this project to fruition.

Thank you all from the deepest of my heart!

LIST OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

During the past fifty years, leadership research has shifted from a meaning-making significance of leadership to economic-performance significance, and this shift has been problematic (Glynn & DeJordy, 2010; Podolny, Khurana, & Hill-Popper, 2005). The financial crisis that started in 2008 and evolved into a global economic crisis in 2009 and caused a slowdown of most of the western economies has been called a crisis of values (e.g. Bernal, 2010; Bernal, Cos, & Tarré, 2011; Bernal & Zoggel, 2011; Lüfkens, 2010). This study defends the need to return to meaning making by nurturing value-based leadership theories. Authentic Leadership (Avolio & Gardner, 2005), which is premised around the idea of authenticity, incorporates the morality and ethical values of leaders as a key characteristic of successful leadership in today's world.

While a lot of research has been done in the field of leadership and management disciplines, little has been done on how to develop leadership (Avolio, 2007). Leadership development is the least explored topic within the field of leadership research and theory (Avolio, Avey, & Quisenberry, 2010; Day, Harrison, & Halpin, 2008). In a meta-analysis of the leadership development research looking at the past 100 years, Avolio and Chan (2008), found that only 200 studies out of 12,500 focused on leadership development and state that "*the best leadership development programme is yet to be devised, because our understanding of leadership development is incomplete, and our theories of leadership development are still at an embryonic stage*" (p. 227). Day and O'Connor (2003, p.12) called for a "*science of leadership development; a theory that provides solutions for improving leadership development instead of only explaining what leadership is or is not*".

Furthermore, executives report that a great part of what leaders use to lead effectively comes from experience more than from formal training (LaHote, Simonetti, & Longenecker, 1999; McCall Jr, 2004; Thomas & Cheese, 2005). Thus, we need to answer key questions like: How effective are leadership development programmes? How can we measure that development? And what do they actually develop? Much research is needed before we can answer all of these questions. The answers will help us to understand how we need to modify training interventions in order to constitute an effective catalyst for leadership development.

The field is starving for empirical research that advances the science of leadership development (Avolio & Chan, 2008; Day, 2001; Murphy & Riggio, 2003), particularly with studies that help us to understand the lasting effects of leadership development programmes, and can begin to show the possible benefits of leadership development for individuals and organisations. As such, we might be better to justify the amount of money and time invested in these programmes. Millions every year are dedicated to the development of leadership (Aguinis & Kraiger, 2009; Avolio et al., 2010; Huselid, Jackson, & Schuler, 1997; Thompson, Koon, Woodwell, & Beauvais, 2002; Training, 2012) as these programmes are seen as a source of competitive advantage (McCall, 1998), yet there are few programmes that measure their real impact on individuals, teams and organisations (Avolio et al., 2010). A key question of this study is whether leadership training in the marketplace today are effective at developing authentic leadership.

In this way, this study contributes to the body of knowledge of the new science of leadership development by measuring the real impact that leadership interventions have on executive learning. Learning is understood as a transformational effect on the individual, resulting in (large or small) noticeable behavioural change. Clark (1993, p. 47) defines transformational learning as a way in which people change: "*they are different afterwards, in ways both they and others can recognize*"; and as Kegan

(2000) defends, transformational learning is not only about adding new knowledge, but also about increasing self-consciousness. So this study looks at behavioural change that is both recognizable to themselves and others, and is accompanied by increased self-awareness on the part of the leader in question.

Behavioural change has been assumed, however, as a result of leadership development interventions, but we know that long lasting change is a complex process that takes considerable time and effort (Prochaska, Norcross, & Diclemente, 2006) and involves the development of strong intentions towards the new behaviours (Ajzen, 1991). Since none of the leadership theories address how behavioural change is actually achieved, theories of change that can help us to explain how and why individuals change, are integrated in the current study. This research is set to explore how the development of behavioural intentions influence the modification of authentic leadership behaviour, and to what degree leadership development programmes help individual leaders develop these intentions.

The biggest contribution to knowledge of this study within the new science of leadership development is the integration of a leadership development theory (i.e. Authentic Leadership Development -ALD- theory (Avolio & Gardner, 2005)) with a theory of individual behaviour change (Theory of Planned Behaviour – TPB (Ajzen, 1991)). This combination of theories responds to previous research, which highlighted the importance of testing integration and complementarity of existing theories vs. developing new models (Avolio, 2007; Derue, Nahrgang, Wellman, & Humphrey, 2011). In the present study, while ALD theory provides the basis for analysing whether leadership is developed, TPB allows this study to explain why people change, or not, as a result of a leadership development intervention. The development of intentions to behave authentically is posited, therefore to be an antecedent of the actual behaviour. This integration of a theory of leadership and a theory of individual change from health psychology has not been done before and

shows promise of being combined for future research in a more general sense in the leadership development field of study.

Four completely different programmes (two corporate talent development initiatives and two business-school open enrolment programmes), in different European locations, are tested. Hence, this research advances our understanding of how people change, or not, as a result of leadership development interventions. The findings provide insight into how, and for whom these programmes should be designed in order to accelerate leader's development.

Furthermore, this study explores the relationship between readiness for change and the actual change observed in individuals after the leadership intervention. This is why this study incorporates a behaviour change model to understand better differences in individuals following the same leadership programme. This research explored whether leadership development programmes helped individuals change their authentic leadership behaviour, and if so, how the development of behavioural intentions influence the modification of such behaviour. It also explored the relationship between individual's readiness for change and the actual change observed in individuals after the leadership intervention. The design of studies testing leadership development with the presence of mediators and moderators has been raised as a gap in previous meta-analytic reviews in the literature (e.g. Judge & Piccolo, 2004).

In addition, this study addresses other gaps raised in the study of this field: the need to use more longitudinal designs, staging away from more pervasive cross-sectional studies (Gardner, Lowe, Moss, Mahoney, & Cogliser, 2010; Webb & Sheeran, 2006); the need to perform more field experiments with control groups (Avolio, Reichard, Hannah, Walumbwa, & Chan, 2009b), developed in business and corporate settings (Hayward & Voller, 2010); the need to evaluate leadership

programmes that are designed to manipulate leadership (Reichard & Avolio, 2005), and that are longer than one day (Avolio & Chan, 2008).

I. LITERATURE REVIEW

This chapter presents a literature review for leadership development and behavioural change. Section 1 provides an overview of the evolution of leadership theories. Section 2 discusses the existing literature on leadership development. Section 3 discusses what do we know about the effectiveness of leadership development interventions. Finally section 4 discusses theories of change, relevant to the measurement of changing behaviour.

This thesis is concerned about whether people change as a result of leadership development programmes and if so, explores reasons why and how individuals are successful at modifying their behaviour. Responding to identified gaps in the literature (e.g. Avolio, 2007; Derue et al., 2011), this study avoids adding to the excessive proliferation of new theories (Avolio, 2007) and integrates existing well researched constructs to test their complementarity and validity together.

Chapter I presents the most relevant literature to situate the reader in the broader context and to justify its choices over the available alternatives and provides the literature review for the research questions and hypotheses that will be developed in Chapter II. Specifically, this literature review focuses on literature that discusses leadership development and theories of individual behaviour change relevant to this study. This chapter presents the effectiveness of leadership development and theories of change separately, whereas chapter II discusses and proposes its integration.

The first section below provides an overview of the evolution of leadership theories to understand better where the development of leadership has historically been, and is, within the different research philosophies and approaches.

1. Leadership theories

Leadership is one of the most studied and debated topics in social sciences (e.g. Bass, 1990; Bennis, 2007). The first two approaches to studying leadership centred on the leader as an individual, *trait* and *behavioural* theories.

Trait theories attributed the history of society to the acts of great men (Heifetz, 1994) and began to search for heritable attributes that differentiated leaders from non-leaders and explained individual's leadership effectiveness (Galton & Eysenck, 1869). These theories assume that certain traits or characteristics tend to influence effective leadership (e.g. honesty, integrity, self-confidence, drive, cognitive ability, and knowledge of the business) (Zaccaro, 2007).

While research investigating personality traits showed inconsistent results (Judge, Bono, Ilies, & Gerhardt, 2002) and most researchers have transitioned away from the trait theory, there is recent interest (e.g. Ng, Ang, & Chan, 2008; Oh, Wang, & Mount, 2011) in organizing personality traits in a five-factor model (often termed *Big Five*) representing the most salient aspects of personality relevant to leadership (Goldberg, 1990). The five dimensions are: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Judge and his colleagues (2002) in a qualitative and quantitative review of personality and leadership found out that, except for Agreeableness, the other factors were useful traits in relation to leadership and that Extraversion was the most important trait of leaders and effective leadership. The authors note however that many situational factors may moderate the validity of personality in predicting leadership.

Extreme interpretations of trait theory consider 'leadership characteristics' as innate, and consequently exclude a majority of people from being considered as good leaders, and lend one to question any value in formal leadership development. Recent

research, however, has found that natural leadership qualities are evident early on, and are then developed over their lifespan (Boyatzis, 2008; Doh, 2003). Today, the great majority of leadership researchers seem to agree that leadership is developable to a great extent (e.g. Avolio & Chan, 2008; Doh, 2003). In a study with twins, Arvey, Zhang, Avolio, et al. (2007) found that only 30% of leadership emergence comes from heritage.

Behavioural theories appeared in response to the criticism of trait theory. Scholars approached leadership under the belief that leaders differentiate themselves by observable enduring behaviours. The focus of their research has been in identifying those universal leadership behaviours, with the belief that individuals can develop them with learning and practice (Skinner, 1974). This approach opened the way to create leadership development programmes, even though researchers have identified dozens of different leader behaviours and typologies (Fleishman et al., 1991). The theory today, is questioned by researchers who defend, despite numerous behaviour-based studies, that there is no evidence that a certain list of behaviours would be more important than any other (Yulk, Gordon, & Taylor, 2002).

In the most comprehensive meta-analysis of leadership literature, Derue et al. (2011) review, for the first time, the effectiveness of both trait and behavioural theories combined. The authors proposed an integrative model that spans across and compares both leadership paradigms and call for further integration in leadership research theory. One of the overall conclusions of their meta-analytic review indicates that leader behaviours had a greater impact on leadership effectiveness than did leader traits.

Situational and contingency theories of leadership appeared when scholars, seeking also alternatives to trait theory, shifted the focus away from the leader and

toward the followers and/or the specific situation in which these leaders were leading. In contrast to trait and behavioural theories, contingency theory assumes that leadership can vary across situations. Their research found that different situations call for different leadership characteristics and behaviours, therefore, no single optimal psychographic profile of a leader exists. Perrow (1970), specifically argued that the real causes of effective and ineffective organisational leadership reside in structural features (of the organisation) rather than the characteristics of the people who lead those organisations. Despite the importance of situational theories in the literature and the general acceptance that leaders in one situation will not necessarily be perceived as leaders in another situation (Fiedler, 1967; Hersey, Blanchard, & Johnson, 2008; Stogdill, 1974), contingency approaches lack more empirical support (Graeff, 1997; Vroom & Jago, 2007).

The above approaches (i.e. trait, behavioural, and situational) are referred to as *traditional leadership theories* (Antonakis & House, 2002; Avolio et al., 2009b; Bryman, 1992). They spawned a broader understanding that leadership is both a natural trait and a developable competency and that leadership is much more than the leader itself, including the follower, and the context.

After this, *newer* theories of leadership, which consider the leader as a change agent (Bass, 1985), emerged and explained leadership effectiveness by: leader-follower relationship, leader charisma, leader focus on ethics, on its transformational effect on followers, etc. Some authors suggest that these newer positive forms of leadership (e.g. transactional, charismatic, authentic) are more effective at influencing follower attitudes, behaviours, and performance (Avolio et al., 2009b), than traditional forms of leadership.

Currently the trend is toward a more holistic study of leadership, (Avolio, Walumbwa, & Weber, 2009c) and there is a growing interest in constructs such as

collective leadership (also called shared or collaborative leadership), which considers leadership as an impersonal process, and focuses on the "*relationship between people, their interdependency, and their ability to act upon a shared vision*" (Hannum, Martineau, & Reinert, 2007, pgs. 5-6). An extreme view of this would describe leaders as mere puppets of the system, where the structure and the larger conditions, such as the social forces, give the leader no ability to influence its outcomes (Vroom & Jago, 2007).

Still, most modern theorists understand leadership as both a process of which the individual leader is a central part, and, as a competency that needs to be modulated and adapted to different situations (Avolio & Gardner, 2005; Gardner, Avolio, Luthans, & et al., 2005a; Kernis, 2003). No single set of leadership skills and traits define leaders in all circumstances. Instead, the leader's competency includes the ability to adapt and modify one's style or behaviour (i.e. self-regulation) to accommodate specific situations (e.g. the organisational culture, or the followers' competency level).

Despite these recent research trends, many organisations continue to use a wide variety of trait-based assessments for leader selection (Dobbins & Platz, 1986; Fulmer & Conger, 2004; Phillips & Schmidt, 2004). Derue et al. (2011) found that conscientiousness (e.g. being thorough, careful, efficient, organised, and systematic) was the most consistent trait predictor of leadership effectiveness, specially when combined with extraversion (e.g. being outgoing, talkative and with an energetic behaviour) and agreeableness (e.g. being kind, sympathetic, cooperative, warm and considerate). The authors also highlight that while having certain traits may predispose individuals to certain behaviour, behaviours are the more important predictor of leadership effectiveness.

Charismatic leadership, "*which redounds in trait, behavioural, and transformational approaches*" (Glynn & DeJordy, 2010, p. 125), sees the power of the leader to influence followers in extraordinary and transformative ways, in its personal abilities and talents (Conger & Kanungo, 1987).

All these put in evidence the state of confusion of the field of leadership, without a dominant theoretical approach or research paradigm (Glynn & DeJordy, 2010; Yukl, 1989). Up to this point we also have seen that the foundational ground of leadership theory has been attempting to produce models that explain what successful leadership is and where it comes from. We have also seen that a majority of the early leadership research was concerned about the prediction of high performance (Glynn & DeJordy, 2010) and assumed that leadership is based on endurable leader characteristics (traits or behaviours) and, therefore, not likely to be developable. Because this study, more than examining leadership definitions or its organisational outcomes, is concerned to understand whether leadership competency is developed, the next section explores what research already exists in the area of leadership development. We have seen that only newer theories of leadership incorporate the notion of leadership development and, therefore, the next section reviews such theories.

2. Leadership Development

Pioneering work on leadership development research focussed on the development of individual leaders and built upon adult learning theory. Adult development literature can be traced to the late 1960s when theorists challenged Piaget's view (Flavell, 1963), arguing that adult learning is a complex process that

occurs beyond formal operations. These theories, referred to as postconventional or postformal, are arguably a good base for advancing the needed science of leadership development. One criticism of leadership development theories building on adult development theory (e.g. Lord & Hall, 2005) is their focus on the individual leader, ignoring the followers and the context (Avolio, 2007; Avolio & Chan, 2008).

Lord and Hall's (2005) theory, for instance, which proposes that leaders progress from novice to intermediate and to expert, is very complementary to Uhl-Bien's (2003a), who proposed a leadership development theory that focused on the relational aspects of leadership. The two theories could complement each other in a more complete theory that integrated the individual and her relationship with others. Modern constructs of leadership (i.e. newer theories) view the leader as one element of the whole context, much bigger than the leader alone (Uhl-Bien, 2003b).

Leadership development literature has classified development as *formal* or *informal* (Clarke, 2004; Enos, Kehrhahn, & Bell, 2003). Formal development activities have also been referred to as *off-the-job* or *classroom-based,* and informal development activities have been referred to as *on-the-job* or *work-based* (Ready & Conger, 2003; Woodall, 2000). Formal (off-the job) interventions can be broad in nature and include scenarios (e.g. business games, case studies), simulations (e.g. role plays), and outdoor activities (e.g. team challenges) (see Avolio et al., 2009b; Yukl, 2006). Informal (on-the job) interventions have been also divided into self-help (e.g. books, videotapes), and developmental activities (e.g. job rotation, mentoring, action learning) (see Day, 2001; Yukl, 2006). According to this view, the leadership development programmes included in this research falls under the formal type of development.

There are, however, other types of prevalent leadership development activities today such as coaching and 360-degree feedback (Day, 2001), which may bridge this

formal-informal classification. Also, some authors pointed out that this formal/informal classification neglects the inclusion of important elements such as corporate culture and values, which have an effect on the development of the leader and suggest the inclusion of organisational context strategies (Quatro, Waldman, & Galvin, 2007).

So, how have newer theories of leadership incorporated formal or informal ways of development? Some authors have questioned the relevance of leadership theory in leadership development research (Murphy & Riggio, 2003), yet often, the practice of leadership development in organisations is based on theories of leadership (Ardichvili & Manderscheid, 2008). For this reason this section reviews and discusses leadership theories that contemplate its development aspects and which have ample scholarly evidence and evaluation: leader-member exchange, servant, and transformational leadership theories.

Leader-Member Exchange (LMX) theory, developed by Graen and colleagues (Dansereau, Graen, & Haga, 1975) focuses on the quality of the relationship between the leader and the led. LMX theory suggests that effective leadership is achieved through this dyadic relationship. LMX, classified by Graen and Uhl-Bien (1995) as a relational theory, has been gaining popularity in research in the past few years. LMX postulates that leaders will behave differently with followers that are similar to them (e.g. giving more attention, responsibility and reward), than to followers that are different (e.g. giving them less attention and managing them through more formal rules) (Graen, Liden, & Hoel, 1982).

Despite the ample research on LMX, the reports of its actual practical applications are scarce (Ardichvili & Manderscheid, 2008). Avolio et al. (2009c) also note that one of the limitations of LMX, which is widely recognised, is its narrow focus on the dyadic leader-follower relation, as opposed to a broader context including, for

example self awareness, and ethical behaviours. But the more important criticisms for the present study, that LMX has received, concern its lack of integrative theory that explain the cause-effect relationship among its variables, and the limited number of empirical studies that explore how LMX quality is improved (Martin, Epitropaki, Thomas, & Topaka, 2010). This is the reason why this LMX has not been considered a good theory to ground this study.

Servant leadership (Block, 1993; Greenleaf, 2002; Spears, Lawence, & Blanchard, 2001) is another newer form of leadership theory, which has been applied to several consulting and development contexts (Ardichvili & Manderscheid, 2008). This theory proposes that to the extent that leaders see themselves as servants to those they lead, they will increase followers' capacity to do their work. Servant leadership includes important aspects of other contemporary leadership theories, such as self-awareness and authentic behaviour (i.e. integrity, trust, courage, hope, and perseverance), but it misses other key elements such as the leader's self-regulation and positive psychological capital (Avolio & Gardner, 2005).

Despite numerous practitioner applications, servant leadership theory has been largely based on popular literature more than supported by empirical research (Avolio & Gardner, 2005). Derue et al. (2011), for instance, were forced to exclude theories such as servant leadership and ethical leadership in their meta-analytic study due to the lack of research data. Thus, this study did not consider either servant leadership to be a good theoretical base for the current research.

Transformational leadership (Bass, 1985; Bass & Avolio, 1994; Burns, 1978) is a process that leaders and followers engage in, that raises one another's level of morality and motivation by appealing to ideals and values (Bass, 1985). Transformational leadership is frequently compared to two other leadership

behaviours: Transactional leadership, which focuses on the exchange of something that has value for both leaders and followers; and Laissez-faire leadership, which is a more passive form of managing people (Avolio et al., 2009c; Burns, 1978). In Derue's et al. (2011) comparative study, passive leadership raised as the less desirable way of leading. The authors point out that even engaging in suboptimal leadership behaviours is better than inaction.

Transformational leadership is explained through four dimensions: *idealized influence, inspirational motivation, intellectual stimulation and individual consideration*. *Idealized influence* (i.e. leaders who have high standards of moral and ethical conduct, who are positively regarded by followers and who engender their loyalty) and *inspirational motivation* (i.e. leaders who have a strong vision for the future based on values and ideals), are highly correlated (Bono & Judge, 2004) and are sometimes combined to form a measure of charisma (Bass, 1998). *Intellectual stimulation* refers to leaders who challenge organisational norms, encourage divergent thinking, and who push followers to develop innovative strategies. Finally, *individual consideration* refers to leaders who consult with their followers, who are sensitive to their unique developmental needs and who coach them.

Unlike LMX and Servant Leadership, Transformational leadership theory has both significant applications in practitioner leadership training and development (Avolio & Gardner, 2005), and also a significant body of research that documents the validity of this theory (Bass, 1998). Transformational leadership started to be an integral part of the academic and practitioner world in the 1990s (Edwards, Elliott, Iszatt-White, & Schedlitzki, 2013). In Derue et al.'s (2011) meta-analysis, the authors report that transformational leadership was the most consistent predictor of successful leadership across all their effectiveness criteria. This theory, developed in the last few decades, rises as a strong leadership theory in which this study could be based. For

this reason, below, further debate is provided about the validity and applicability of transformational leadership theories.

Judge and Piccolo (2004) in a meta-analytic test from 1887 to 2003 including longitudinal and multisource designs, found an overall small to medium validity for transformational leadership ($d = 0.44$, according to Cohen's (1992) criteria). The authors reviewed all relevant journal articles and dissertations of this period with primary data that measured leadership and contained the necessary information to calculate correlations among variables of interest. The resulting set of studies analysed in their meta-analysis was of 87. This meta-study analysed the relationship between transformational, transactional and laissez-faire leadership with the following leadership criteria: (a) follower job satisfaction, (b) follower leader satisfaction, (c) follower motivation, (d) leader job performance, (e) group or organisation performance, and (f) rated leader effectiveness. Three types of transactional leadership where analysed: Contingent reward, managing by exception-active, and managing by exception-passive. The results of their study indicated that transformational leadership and contingent reward leadership showed the highest overall validity in predicting the six leadership criteria. Transformational leadership appeared to display stronger relationship with criteria that reflected follower satisfaction and motivation (a, b and c) than with criteria that reflected performance (d, e, and f). This results are in line with Derue's et al. (2011) meta-analysis who reported that despite transformational leadership being a theory originally conceptualized around change-oriented behaviours (Bass, 1985), it has a significant relational component and it overlaps conceptually and empirically with relational constructs such as *consideration*.

Judge and Piccolo (2004) reported, however, that transformational leadership failed to predict leader job performance and the study showed lower effect sizes

(0.44) than the medium to large effects reported by Lowe, Kroeck, and Sivasubramaniam (1996) of (d = 0.73). The study found a significant amount of variance in correlations unaccounted for, suggesting the presence of moderators across studies. This reinforces, once again, the need for further empirical studies that validate leadership constructs, specially helping us understand how specific competencies are developed.

Transformational leadership has also been studied in relation to personality traits to ascertain whether this type of leadership was innate or was developable. Bono and Judge's (2004), investigated the relationship between the five-factor model of personality (i.e. Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness) and ratings of transformational and transactional leadership behaviours. Their meta-analysis accumulated 384 correlations from 26 independent studies and found that Extraversion was the personality trait with the strongest and most consistent correlate with the composite of transformational leadership dimensions. The results of this meta-analysis linking personality with ratings of transformational and transactional leadership behaviours were however weak, supporting the transformational leadership is not likely to be a heritable trait.

Authentic leadership, which could be understood as a type of transformational leadership theory (Avolio & Gardner, 2005), emerged in the early 2000's and has developed alongside other constructs of transformational leadership. Bass and Steidlmeier (1999) introduced the concept of *authentic transformational leadership* to distinguish the leader who is both transformational and ethical/authentic. Authentic leadership focuses, therefore, on having a transformational effect on followers but incorporates the concept of authenticity. Avolio and Gardner mention that for a leader

to be viewed as transformational (see: Bass, 1985; Burns, 1978), they must be authentic, yet being an authentic leader does not necessitate that the leader be transformational (Avolio & Gardner, 2005). Spitzmuller and Ilies (2010) considered authentic leadership as a predecessor of transformational leadership and explored the positive effects of leader authenticity on follower perceptions of transformational leadership.

During the past fifty years, leadership research has shifted from a meaning-making significance of leadership to economic-performance significance, and this shift has been problematic (Glynn & DeJordy, 2010; Podolny et al., 2005). This study defends the need for return to meaning making by nurturing value-based leadership theories. It is encouraging to see that authentic leadership development has gained popularity recently in the practitioner and academic world (Cooper, 2005; Edwards et al., 2013).

Authentic Leadership Development (ALD) theory, developed by Avolio, Gardner, and colleagues (2005), is premised around the idea of authenticity: leaders are most effective when they are being true to themselves. ALD incorporates the ethical/moral value of individual leaders, a much needed aspect of leadership in today's world. Research has attempted to study the term *leadership* as a value-free concept, probably for the convenience of analytical reasoning and empirical examination. Yet, on the contrary, leadership is not a value-free construct; all leadership theories are loaded with implicit norms and values (Heifetz, 1994). Authenticity, as a construct, was already present during the period of the ancient Greeks and was captured in their timeless admonition to "be true to oneself" (Harter, 2002). Several authors have started to write about authentic leadership and described the term as referring to a leader who has courage (Terry, 1993), who has principles, is able to navigate the

organisation through turbulent times (Abdullah, 1995), and who has the ability to build lasting organisations (George, 2003).

The financial crisis that started in 2008 and evolved into a global economic crisis in 2009 has been called a crisis of values (Lüfkens, 2010). As a consequence of the collapse of the banking system in most western countries, several authors and thought leaders pointed out the loss of ethical values within organisations (e.g. Bernal, 2010; Bernal et al., 2011; Bernal & Zoggel, 2011). Authentic leadership theory is described as a process that leaders and followers engage in that raises one another's level of morality and motivation by appealing to ideals and values (Burns, 1978). Or as Luthans and Avolio describe (2003, pg. 241), "Authentic leaders are guided by explicit and conscious values that enable them to operate at higher levels of moral integrity".

Most of the theories of leadership focus on the qualities of leadership (e.g. the five-factor model of personality) and are only addressing the issue of leader development afterwards (Avolio & Gardner, 2005). LMX for instance, has seen some studies showing the benefits of increasing LMX (Graen, Novak, & Sommerkamp, 1982), but very little applied research exists explicitly aiming at improving the leader-member relationship quality (Martin et al., 2010). Authentic Leadership Development (ALD) theory has been conceptualized specifically to focus on the development of leadership (Avolio, 2007; Avolio & Chan, 2008) and addresses one of the historical gaps of leadership literature, which dedicated little attention to how leadership was developed. This was an important reason why ALD theory has been chosen as the theoretical ground for this study. In the absence of a general model for the development of leadership skills (Day, 2000; Day & Halpin, 2004; Yukl, 2006) it is desirable to study leadership development efforts within the framework of a leadership theory (Avolio, 2007).

Also, ALD theory is supported by empirical research and has an agreed construct and a standard measure. If there is divergence within the basic principles of a theory, then it does not provide a solid foundation for examining the ability of a leadership intervention to develop leaders. This is the case for spiritual leadership, where there lacks consensus on the definition of spirituality (Dent, Higgins, & Wharff, 2005). Servant leadership, is a theory where is neither a consensus on its definition nor a unique scale to measure it (Avolio et al., 2009c). Other theories such as LMX, have also seen many different measures proposed over the past years (Yukl, 2006). In ALD, on the contrary, there is convergence to a standard measure: the Authentic Leadership Questionnaire (Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008) to assess the development of authentic leadership.

One of the questions of this study is whether corporate and business-school leadership development programmes in the marketplace today are effective at developing authenticity and authentic leadership in their participants. The construct of ALD is generic enough to be able to measure leadership development from programmes that are not specifically intended to develop authentic leadership. In the experience of this researcher, corporate and business-school programmes are most likely not designed with specific adherence to one of the constructs used in academic literature. For this reason, a theory of leadership development that is generic enough to be applicable to several programme interventions at different corporations, cultures and audiences has been chosen.

ALD focuses on the leader's sense of self and proposes that authentic leadership development is preceded by the leader's ability to develop *self-awareness*, understood as the capacity to understand one's own emotions, motives and goals; and *self-regulation*, understood as the capacity to align personal values with one's

intentions and actions (Gardner, Avolio, & Walumbwa, 2005b). Self-awareness is one of the key predictors of authentic leadership, and has been considered to be a meta-competency of leadership (e.g. Hall, 2004). Furthermore, top rated leadership development programmes for executives such as the Leadership Development Programme (LDP)® from the Center for Creative Leadership, are predominantly based on increasing the level of self-awareness in the participant (CCL, December 2012). Kets de Vries, Hellwing, et al. (2008), in an exploratory study to assess the effects of INSEAD's *Challenge of Leadership (COL)* programme, showed that by increasing the leaders' level of self-awareness, they became more people oriented, better listeners, having a better emotional intelligence, and improving behaviours such as reward, feedback, and team building.

Self-regulation, the second key component of ALD, links how leaders and followers regulate the translation of their awareness into behaviours–actions that are considered authentic. Bandura (1979) who introduced the concept of self-regulation of behaviour, proposed that this is possible through actions such as goal-setting. The competency is mastered once the individual is capable of changing old patterns of behaviour, and is able to regulate behaviour in front of specific situations. The nature of self-regulation, for instance, is very applicable to leading in different cultural contexts (Avolio, 2007; Lord & Brown, 2004). Self-regulation in ALD theory includes important characteristics such as *moral capital* (i.e. the moral/ethical perspective of the leader and the capacity to be aware of the inherent values that guides one's actions); and *positive psychology* (i.e. the capacity to draw positive meaning from different life experiences).

Practitioners have incorporated the idea of authenticity and self-knowledge in leadership training and coaching since the early 1990s (see: Cashman, 1998). But, while in the past few years both academic and practitioner attention on ALD has

increased substantially, the theory is still in its early stages of development (Ardichvili & Manderscheid, 2008), and that poses some challenges and limitations for its use (Cooper, 2005). Avolio and Chan (2008) call for the need to incorporate more longitudinal research, that recognizes the individual differences of leaders when tracking their development. This research addresses such gaps and provides further empirical evidence in support of ALD theory as it incorporates a longitudinal measure for ALD and takes into account the leaders' readiness for change before the intervention.

So far, the most relevant newer theories of leadership have been discussed yet they do not talk about how effective leadership development programmes are in developing such leadership competencies and behaviours. Next section evaluates how much do we know today about the effectiveness of leadership interventions.

3. Leadership Development Effectiveness

While there seems to be enough evidence in favour of the benefits that training and development produces for individuals, teams and organisations (Aguinis & Kraiger, 2009), and could be a source of competitive advantage (McCall, 1998) to the sponsoring organisations, there are many unknown variables at play that make it difficult to attest categorically that training has always positive effects. The reality is that many millions of Euros are spent annually on professional services focussed on developing leaders (Avolio et al., 2010; Hayward & Voller, 2010; Huselid et al., 1997; Thompson et al., 2002) without empirical explanation of which strategies and theories are useful for what, and when they should be applied. Many authors propose that the practice of leadership development has far outpaced its theory and science (Avolio &

Chan, 2008; Day, Zaccaro, & Halpin, 2004; Derue et al., 2011; Dragoni, Tesluk, Russell, & Oh, 2009; Mumford & Manley, 2003) and call for the need for more research on what individuals and organisations can do to develop successful leadership behaviours (Dragoni et al., 2009). This study addresses such gap, providing further evidence through a robust experimental research design.

Given the amount of research in the area of leadership development, relatively few published studies examine the impact of leadership or management development (Hayward & Voller, 2010). Nevertheless, over the past 40 years, a few hundred relevant studies evaluate the effects of managerial and leadership interventions. The best way, therefore, to analyse globally what we know about the effectiveness of leadership development is by reviewing quantitatively based meta-analyses that focussed on this. Meta-analyses evaluating the impact of training and leadership interventions will provide us ground for assessing what we know and what we do not know about the effectiveness of leadership development programmes. Aguinis and his colleagues (2009; 2008) emphasise that results from meta-analytic reviews should be given more importance than individual studies because they are more reliable.

Meta-analyses, to be able to compare results from different studies, have to standardise the way such results are reported. Following Hedges and Olkin's (1985) convention, the meta-analysis reviews included in this paper used the unbiased effect size estimator '*d*'. According to Cohen's (1992) criteria, $d = 0.20$ is considered a small effect size, $d = 0.50$ is a medium effect, and $d = 0.80$ is a large effect.

It is good to start this analysis as far back as possible to be able to see how slow the knowledge of leadership development effectiveness has evolved in time. Burke and Day (1986) evaluated 70 published and unpublished studies of managerial training effectiveness from 1951 until 1982. This meta-analysis showed that while managerial training was moderately effective as a whole, more empirical research

was needed before any firm conclusions could be drawn. The authors developed four criterion-measure categories on the basis of two dimensions: *knowledge learning - behavioural change*, and *subjectivity - objectivity of results*. Results for the criterion-measure of subjective behaviour, relevant to the current research, showed true mean effect sizes of $d = 0.49$ but its results varied significantly across the three areas studied (general management, self-awareness and human relations): general management and self-awareness had true effect sizes of $d = 0.44$ and 0.40 respectively, in contrast to $d = 0.65$ for human relations, showing that this training had a relatively large percentage of the observed effect size variance accounted for. This meta-analysis can be viewed as an initial step in clarifying what we knew about managerial training and highlighting areas where future research was needed (Burke & Day, 1986). Additionally, the results of this meta-analysis indicated that different managerial training methods do not necessarily lead to increased knowledge and improved job performance, and the authors suggested the existence of moderators such as the level of the trainer, which might significantly influence the effectiveness of training programmes.

Collins and Holton (2004) performed a meta-analysis that follow-up in time Burke's et al. (1986) and explored the effectiveness of managerial leadership development with 83 studies conducted between 1982 and 2001. This analysis showed slightly more positive results than its predecessor with effect sizes ranging from $d = 0.35$ to 1.01 for behavioural change outcomes. These conclusions are similar to Bayley's unpublished meta-analysis (1988) that reported highly significant effects of continuing education on behavioural change in clinical practices. On the other hand, it contrasts with Lai's unpublished meta-analysis (1996) that found that educational leadership training had a small effect when leader behaviour changes were measured.

So far, these analyses provide little evidence of which elements of a leadership development programme are useful for whom, and when they should be applied. Collins and Holton (2004) concluded that little was done by previous research to determine which theories were more or less appropriate for different training objectives. Day (2000) and Murphy and Riggio (2003) criticize leadership development programmes as not being strongly enough grounded in learning theory (see for example: Hooijberg, Hunt, & Dodge, 1997). One of the studies that manifested the importance of linking leadership theory with leadership development was a study conducted by Kuhnert and Lewis (1987) that built on transactional and transformational leadership and proposed that leadership development is linked to the development of peoples' egos, and that this occurs in stages (from the egocentric leader to the leader that works across different value systems).

The third meta-analytic review of leadership impact considered here is a study done by Avolio, Reichard, Hannah, et al. (2009b) who identified nearly 500 leadership studies from 1981 to 2008. Out of these, 200 lab and field studies that met their criterion for empirically based interventions, were selected and analysed quantitatively. The purpose of this meta-analysis was to address the question of: Do leadership interventions or leadership development initiatives make a difference, and if so, by what models or methods and with which outcomes?

This study showed, on average, that leadership interventions produced a 66% probability of achieving a positive outcome (d = 0.26 to 1.08), compared to only 34% chance of success for the comparison group (for the data set corrected for outliers). These results are similar to Collins and Holton's (2004) meta-analysis and empirically show that experimental/quasi-experimental leadership interventions do make a positive difference across a broad array of interventions, organisations types, leadership levels, theories, levels of quality of research and outcomes. The ranges of

these effects however, are quite heterogeneous and vary significantly when assessing moderators such as type of leadership theory.

From the 200 studies analysed, 62 referred to what the authors classified as leader training/development programmes, and the rest were other type of formal and informal interventions (i.e. scenario or vignette, actor or role play, leader assignment, and altering leader expectations of their followers). Interestingly, the study showed slightly lower effect sizes from training/developmental interventions versus the other types of interventions, indicating that the real impact of a training effort could be lower than other forms of leadership interventions. These results support the elimination of the separation between formal and informal leadership interventions. In other words, this study understands leadership development inclusive of any type of formal (on-the-job) and informal (off-the-job) intervention.

The results of this meta-analysis vary also depending on the type of leadership theory tested in the studies. They were organised in three groups: *traditional* (i.e. including trait, behavioural, and contingency approaches to leadership which dominated research up to 1970s); *newer* (including charismatic, inspirational, transformational, and visionary leadership which dominated research from 1980s); and *Pygmalion* based leadership (such as self-fulfilling prophecy by increasing followers performance). The results of the study showed equivalent effect sizes between traditional and newer interventions. Pygmalion interventions produced the largest effect size (up to 79% chance of success), compared to newer theory interventions (with 64% chance of success). The authors suggest that leaders may not be able to be truly transformational without being able to create self-fulfilling prophecies in their followers. Therefore, Pygmalion approaches could be included as newer forms of leadership interventions, and these would raise the effects for that category and therefore its effects over traditional.

Finally, with respect to the type of outcomes of the interventions (i.e. affective, behavioural, and cognitive), at an aggregated level, affective showed slightly lower impacts than did those leadership interventions measured by behavioural and cognitive outcomes. Here again, results varied depending on the type of theory evaluated. Traditional theories, for instance, had a larger effect on behavioural outcomes, while newer theories had a larger effect on affective outcomes. Avolio et al. (2009b) note that one typical methodological problem in leadership development evaluation is the arbitrary manner in which measurement criteria for key variables and constructs are determined. They suggest giving greater consideration to the choice of dependent variables with respect to the theoretical framework that is being tested.

The fourth, and most recent, meta-analysis found in literature that evaluated the effectiveness of managerial training and/or leadership development was published by Powell and Yalcin (2010). This meta-analysis offers a more expanded view of managerial training over time as it evaluates its effectiveness for a 50-year-period: 1952 and 2002. The authors specifically looked at studies which based their research on Kirkpatrick's model (1959), who proposed four training evaluation steps: Reaction (i.e. how well the trainees liked the programme), Learning (i.e. what principles, facts and techniques were understood and absorbed by programme participants), Behaviour (i.e. how the programme modified trainee's on-the-job behaviour), and Results (i.e. the extent in which such intervention affected specific organisation's key result indicators).

This quantitative meta-analytic study, after evaluating 85 interventions and 4,779 individuals, reported only moderate effect sizes. The authors highlighted that there doesn't seem to be much improvement in the effectiveness of managerial training over the fifty-year period covered in the study. Additionally, they reported that the type of programme outcome (i.e. Learning, Behaviour, Results) appeared to

moderate programme impact. Specifically, interventions designed to achieve learning outcomes tended to have the largest effect sizes and were consistently significant relative to programs targeted at behaviour and results outcomes.

From these four meta-analyses of leadership development, we can conclude that experimental/quasi-experimental leadership interventions have a positive impact across a broad array of interventions, organisations, and management levels. Still, there is a great variance in the results of the various programmes that should be further explored. Collins and Holton (2004) for instance, found that some programmes were tremendously effective (with effect sizes of 2.10), while others failed miserably (with negative effect sizes of -1.39).

The Center for Creative Leadership (CCL) regularly performs evaluations of the impact of their Leadership Development Programme (LDP)® in Europe on participants' leadership competencies. A study performed in 2008 (Lineberry et al.) showed that 92% of raters reported observing impact at the individual level and 96% reported observing impact at the organisational level. A more recent study (Eckert, Isaakyan, & Mulhern, 2013) of the same programme indicates positive changes in each of the 14 behaviours and competences measured, especially negotiation and self-awareness.

These results are in line with other meta-analysis conducted to ascertain the benefits of general training into job performance: Arthur, Bennett, Edens and Bell (2003) conducted a meta-analysis of 1152 effect sizes from 165 sources and showed an overall positive effect ($d = 0.62$) on job-related behaviours for people that followed the organisational training, compared with control groups. The authors also reported that the effectiveness of interventions varied depending on the training delivery method and the skills or the task being trained.

All these meta-analyses indicate that more empirical research is needed before we can predict the impact of a leadership intervention on individuals and organisational performance - See meta-analyses by Hayward and Voller (2010) for similar conclusions. We know from these studies that there are a number of mediating and moderating variables in all leadership interventions, which make it difficult to predict its results upfront (e.g. leaders' perceived behavioural control/self-efficacy, participant's motivation and change readiness, programme's effect on leader's self-awareness, organisational culture, type of intervention, trainer's experience, length of the intervention, social context, etc.). Even though leadership development interventions are pervasive, research indicates that organisations are spending little time evaluating the effectiveness of their interventions (Sogunro, 1997). Several organisations have reported successes with particular development approaches, yet the lessons emanating from these practices are not typically presented in a way that could guide future research in this area (Leskiw & Singh, 2007). On the contrary, research has not been able to cope with the rapid advancement of leadership development practices and, therefore, criteria for selecting among them remain underdeveloped.

The current study addresses some of the gaps highlighted in previous literature by exploring moderating and mediating effects of behavioural change constructs in leadership interventions to be able to better explain leadership development effects on individuals.

It is important to notice that there are different approaches to leadership development evaluation depending on what needs to be evaluated. Hannum, Martineau, and Reinelt (2007) collected nine applications of leadership development evaluations across different sectors, contexts, and populations. Despite the diversity of these case studies, they have many points in common and they put in evidence the

importance of context in leadership evaluation. Namely, some of the most important contextual factors highlighted by the authors are: purpose and scope (i.e. why the leadership programme takes place?); history and culture (i.e. what is the past experience and culture of participants, organisations, and communities?); timing (i.e. what is the period, length, etc. of the evaluation?); availability of resources; quality and availability of data; and expectations of key stakeholders. In sum, every leadership development evaluation project needs to be contextualised properly to better understand its effects (Hannum et al., 2007) and to be able to calculate its ROI (Phillips & Phillips, 2008). The context of the current research study will be explained in detail in chapter III (Methodology).

In what has been described thus far, we can attest that most academic research has emphasised leadership as a concept instead of a process of development that can be improved through targeted interventions. Leadership development remains an emergent field of study with more proposed theories than empirical studies (Avolio & Chan, 2008). Little research has been done on the relative advantages of formal and informal leadership development for different types of leadership and little is known about the best way to combine different types of leadership interventions to maximize their effects on people and organisations (Yukl, 2006). In summary, leadership development results vary significantly depending on the aims of the training, the variables measured and the context or situation of the study and we have seen that researches agree that a lot more research is needed before we could understand the true effects of leadership development (Avolio & Chan, 2008; Day et al., 2004; Derue et al., 2011; Dragoni et al., 2009; Mumford & Manley, 2003).

Furthermore, the leadership and leadership development research to date assumes that people will change behaviour as a result of a leadership intervention. Nonetheless, in the health psychology field it is known that the best predictor of future

behaviour is past behaviour (e.g. Godin, Valois, & Lepage, 1993; Norman, Conner, & Bell, 2000; Norman & Smith, 1995). It seems prudent at this point to consider theoretical alternative approaches from disciplines outside traditional training and development theory that might bring us new insights into how people develop leadership competency.

Since none of the leadership theories address how behavioural change is achieved, and since we want to gain insight into the type of programmatic intervention that will develop the kind of leadership that an organisation requires, we need to incorporate other theories that can help us to explain individual change.

Like all other leadership development theories, ALD is limited in that it does not speak about how leadership is actually developed in individuals. For example, one might ask: How is authenticity or ethical behaviour nurtured? Is it experimentation? Is it role-playing? Is it coaching? Is it feedback? What is the best programmatic intervention to develop these competencies? This study mitigates such weaknesses by combining ALD theory with theories of behavioural change.

4. Theories of change

The idea of using a theory of change in evaluating leadership development is not new. The *theory of change* approach for leadership development evaluation gained popularity and acceptance in the 1990s through the evaluation of comprehensive community initiatives (Gutiérrez & Tasse, 2007; Weiss, 1995). According to Carol Weiss (1995), one of the authors who helped develop this approach to measuring leadership development, a theory of change approach requires that the designers of an initiative, along with other stakeholders, articulate the

premises, assumptions, and hypotheses that could explain the how, when, and why of the processes of change of such intervention.

It its important to note that the term *theory, in this case,* was used to define a set of beliefs and hypotheses that helped design the leadership intervention (e.g. type of intervention, main components, sequencing of events, etc.) and then explain its outcomes, and was not necessarily considered a proven theory of change. In any case, this upfront conversation between the key stakeholders served to outline a *logic model* for the intervention. This term has frequently been used interchangeably with the *theory of change*. Such approach has also given birth to what is called *pathway mapping*, which emphasizes clarifying the underlying theory of programmes in order to evaluate them (Gutiérrez & Tasse, 2007).

As explained before, this research is grounded on authentic leadership development theory (ALD), but it also needs to be supported by a solid theory of change that helps us to understand and explain why individuals achieve behavioural change, or not.

While no change theory specific to leadership development exists, individual behavioural change has been studied extensively in health psychology in order to better understand how people are able to change risky behaviours such as smoking, the use of drugs, or alcohol consumption. There have been two major, and somewhat opposite, approaches that health psychologists have followed for changing health behaviour in individuals: cognitive and behavioural.

Behavioural approaches consider behaviours to be learned and controlled by external factors within the social and physical environment in which they occur (Bennet, Conner, & Godin, 2004). Behaviourism was established as a radical alternative to mentalistic theories of psychology, which had attempted to explain

human behaviour in terms of cognitive constructs (Prochaska, 1979). Behavioural theory is varied, and while no single author dominates this approach, all consider *learning theory* to be the foundation of behavioural change. According to learning theory, behaviour changes occur through interactions with the social and physical environment by the process of *conditioning (Skinner, 1974)*. In other words, behaviour is a function of the environmental conditions, more than of internal cognitive processes. Conditioning may be o*perant* or *covert.* Operant conditioning lays on the work of Skinner (1952), and is based on the principle that rewarded and reinforced behaviour will be repeated, while punished behaviour will decrease. Covert conditioning, advanced by the work of Albert Bandura (1977) helps explain why individuals will be strongly influenced by short-term rather than long-term outcomes when they have to choose between different behaviours. The main criticisms of these approaches to behaviour change are the lack of a unifying theory to all proposed techniques, the superficiality of their view of humanity, and the lack of quality research (in contrast to its quantity) (Prochaska, 1979). For this reason this study is not based on behavioural theory.

Cognitive approaches differ from behavioural ones in the choice of relevant controlling variables for initiating change. Cognitive theories consider that internal processes mediate the relationship between the environment and behaviour (Bennet et al., 2004) and maintain that the initiation of change starts with one's cognitive processes (e.g. thoughts, beliefs, and intentions) towards change (Ajzen, 1991; Bandura, 1979).

Social-cognitive learning theory (Bandura, 1977) has a stronger empirical base to evaluate behaviour change as compared with other theories (Bennet et al., 2004). It postulates that behavioural change is achieved through increasing personal skills and self-efficacy, and that both can be gained through a number of simple procedures

(e.g. observation, and practice). *Self-efficacy*, is understood as the confidence that individuals have in their ability to maintain behaviour change in specific situations, even under difficult circumstances (Bandura, 1997). In other words one's feelings of self-efficacy or perceived control over the performance of a particular behaviour determines the likelihood of achieving behaviour change (Ajzen, 1991).

While self-efficacy is one of the stronger theories of change, there are also a few studies, (e.g. Nicki, Remington, & MacDonald, 1984, studying smoking abstinence), that failed to establish a causal link between self-efficacy and achievement of behaviour change. Romanowich, Mintz, and Lamb (2009) question that self-efficacy is a predictor of change. The results of their study support a relationship between smoking cessation self-efficacy and smoking reduction, and suggest that self-efficacy may be a cognitive response to one's own behaviour change, and not vice versa. However, these results are based on a small sample size (n=63), and it can be argued that since the participants of the study were not seeking treatment for their smoking problem, they were individuals who did not feel motivation to develop an intention towards change. Nonetheless, Romanowich et al.'s (2009) study shows that behavioural changes (i.e. smoking reduction) could be achieved through behavioural techniques such as contingency management.

Goal-setting theory, developed by Locke and Latham (1990), "*is fully consistent with social-cognitive theory in that both acknowledge the importance of conscious goals and self-efficacy*" (Locke & Latham, 2002, p. 714). Other constructs such as control theory (Carver & Scheier, 1982) have also emphasised the importance of goal setting and feedback for motivation.

Another important model frequently used in health prevention is known as the *Health Belief Model (HBM)* which originates in Rosenstock's (1966) work. HBM was constructed to explain which beliefs had to be targeted in health communication

campaigns to promote healthy behaviours (Carpenter, 2010). The model defends that individual's healthy behaviours are influenced by four factors: two of them are the perceptions about negative consequences of potential illnesses (i.e. severity of health outcomes and susceptibility of contracting such illness); and the other two factors refer to perceptions about the behaviour to reduce the likelihood of negative health outcomes (i.e. perceived benefits of preventive behaviour and barriers of adopting such behaviour like cost, pain, etc.) (Rosenstock, 1966, 1974). The most recent meta-analysis on HBM (Carpenter, 2010; Zimmerman & Vernberg, 1994) criticise the model as being no longer valid to understanding behaviour prediction and reported inconsistent results of the model as a whole. Carpenter (2010) proposes to abandon the use of the simple four-variable additive model without examining possible mediation and moderation effects between the variables.

However, Rosenstock's health belief model (1966), along with Bandura's social learning theory (1977) and Beck's cognitive therapy (1977), inspired the transition from first to second-generation health promotion programmes, which recognized that proper knowledge was necessary but not a sufficient condition to ensure behavioural change (Bennet et al., 2004). Second-generation programmes addressed important elements such as values, attitudes, and social influences.

In addition to Rosenstock's health belief model (HBM) and Bandura's social-cognitive theory, two of the most frequently used theories for designing health related interventions are protection motivation theory (PMT) and theories of reasoned action and planned behaviour (TRA/TPB). Webb and Sheeran (2006) in a meta-analytic review of studies that aimed at understanding whether changing behavioural intentions engendered behaviour change highlighted that PMT and TRA/TPB are the two theories which produced the largest changes in intention and behaviour. Below we will review both of these second generation theories.

Roger's *Protection Motivation Theory (PMT)* (1975) postulates that threatening health information has an effect on attitude and behaviour change. According to the author, PMT could be seen as special case of broader expectancy-value theories. Such theories, belief that behaviour is a result of two factors: the expectancy that behaviour will be followed by some consequence, and the individuals' value about such consequence. Protection motivation theory (PMT) is based on the belief that fear-arousing stimuli will minimise behaviours that might produce aversive health consequences or establish response patterns that might prevent the occurrence of noxious events. PMT postulates that fear appeal is based on three key constructs: (a) the magnitude of noxiousness of a depicted event; (b) the probability of that event's occurrence; and (c) the efficacy of a protective response (Rogers, 1975; Rogers & Prentice-Dunn, 1997). It is further assumed that each of these three constructs of fear appeal initiates a cognitive appraisal process that mediates attitude change.

PMT was revised to include the constructs of reward and self-efficacy in 1983 (Maddux & Rogers). The theory has been applied to a diverse array of topics beyond health promotion and disease prevention: injury prevention, political issues, environmental concerns, and protecting others. Rogers and colleagues (Floyd, Prentice-Dunn, & Rogers, 2000) suggest that PMT may be useful for individual and community interventions and point out that the theory is applicable to any threat for which there is an effective recommended response that can be carried out by the individual.

Floyd, Prentice-Dunn, and Rogers (2000) in the first meta-analysis of the literature on protection motivation theory of 65 relevant studies representing over 20 health issues reported overall mean effect sizes of $d = 0.52$. While PMT model of disease prevention has generated research for over two decades and has extensively been used for reducing health threatening behaviours with moderated results, is a

change theory based on fear-appeal and it will be difficult to match the construct of protection motivation with the positively based authentic leadership theory.

Another of the second generation theories which produced the largest changes in intention and behaviour (Webb & Sheeran, 2006) was the *Theory of Reasoned Action (TRA)* (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). TRA has its origins in the research on attitudes and beliefs of both Martin Fishbein (1963, 1967), and Icek Ajzen (1971), and posits that intention is the direct precursor of voluntary action. These, and other, authors, started researching the predictive ability of attitudes on behaviour after Wicker's (1969) conclusion that attitude did probably not predict behaviour directly. The TRA theory proposes that the antecedents of behavioural intentions are *attitude* toward the behaviour, representing beliefs concerning behavioural outcomes and their importance, and *subjective norms*, reflecting the importance and influence of significant other's beliefs. In other words, the more favourable the individual's attitude towards the behaviour, and the stronger the individual's perception that significant others endorse the behaviour, the stronger should be the individuals intention to perform it.

There is a body of literature that supports the theory that people who elaborate their intentions for change are more likely to enact on them than others that do not elaborate their intentions (Fisher & Fisher, 1992; Gollwitzer, 1993; Oettingen, 2000; Sheeran, 2002). Furthermore, there is convergence between theories of attitude–behaviour relations, models of health behaviour and goal theories on the idea that intention is the key determinant of behaviour (Abraham, Sheeran, & Johnston, 1998; Austin & Vancouver, 1996; Eagly & Chaiken, 1993).

While Locke and Latham's (1990) goal-setting theory focuses primarily on explaining employee motivation and productivity factors in work settings (Locke & Latham, 2002) and it is not a theory of individual behaviour change per se, it supports

the idea that intention is a predecessor of behaviour. See for example the meta-analytic study of Mento, Steel and Karren (1987) for empirical evidence that the key act of will that promotes goal achievement is the formation of an intention to perform a specific task.

The *Theory of Planned Behaviour (TPB),* developed by Ajzen (1988, 1991), proposes that intentions to perform certain behaviour could be predicted with high accuracy from personal attitude toward the behaviour, subjective norms (i.e. social pressure), and perceived behavioural control (PBC). TPB is an extension of the theory of TRA and differs from this original theory in its addition of *perceived behavioural control (PBC).* This was made necessary due to TRA's limitations in dealing with behaviours over which people have incomplete volitional control (Ajzen, 1991). Ajzen's view of PBC is compatible with Bandura's concept of self-efficacy: "*The theory of planned behaviour places the construct of self-efficacy belief or perceived behavioural control within a more general fra*mework of the relations among beliefs, attitude, intentions, and behaviour." (Ajzen, 1991, p.184). Furthermore, PBC's construct is seen to cover the perceived influence of both internal (e.g. self-efficacy, skills) and external (e.g. opportunities, constraints) control factors. The three antecedents of intentions in the TPB model (i.e. attitude, subjective norm, and PBC) work as predictors of intentions, which mediates their relationship with the actual behaviour.

TPB has been used in a variety of fields such as health care, advertising, and public relations, and has shown to be one of the most predictive theories of behavioural change. Armitage and Conner (2001), in a meta-analytic review of 185 studies, found that, on average, 27% of the variance in behaviour was explained by behavioural intentions, but individual studies reported correlations as high as 0.96 (Smetana & Adler, 1980). While similar findings were reported by other reviews (e.g. Sheeran, 2002), Webb and Sheeran (2006) suggested that intentional control of

behaviour is more limited than previous meta-analyses of correlational studies have indicated. The authors, for the first time, integrated 47 experimental studies (with control groups) that manipulated intention and subsequent follow-up behaviour (after a few weeks). Despite reporting that a medium-to-large sized change in intention (d = 0.66) engendered only a small-to-medium change in behaviour (d = 0.36), the authors concluded that their meta-analysis provides support for the efficacy of the TPB as a predictor of intentions and behaviour. Furthermore, the authors note that interventions that produced a greater intention change had a corresponding greater effect on behaviour. In line with this, the present study also posits that leadership development interventions with a higher increase in authentic leadership intentions will have greater effect on behaviour change.

Armitage and Conner's (2001) study, highlighted the importance of the complete model to increase predictive ability on intention and behaviour. In other words, the combination of attitude, subjective norm and perceived behavioural control had a stronger predictability effect on intentions (i.e. accounted for 39% of the variance), than any other of the elements of the model in isolation (accounting for 12 to 24% of the variance). In addition, this meta-analysis looked at whether behavioural intentions engender behaviour change and is interesting for the current research as it also reports the effects of different types of change methods: interventions that incorporated incentives for behaving and social encouragement or support, tended to have a greater effect on behaviour (d = 0.56) than other type of change methods (e.g. persuasive communication, experiential tasks, rehearsal of relevant skills and homework with effect sizes that range from d = 0.12 to 0.26). This type of analysis brings some light into what type of intervention are more or less effective at developing intentions in a health related environment but not on leadership development settings.

The main social and health psychology theories have been reviewed in this chapter: Badura's (1977) social-cognitive theory and self-efficacy, Rosenstock's (1966) health belief model (HBM), Carver and Scheier's (1982) control theory, Roger's (1975) protection motivation theory (PMT,) Fishbein and Ajzen's (1975) theory of reasoned action (TRA), and Ajzen's (1991) theory of planned behaviour (TPB). All these well-researched theories propose that changing behavioural intentions will engender behaviour change. This study has chosen TPB as the main theory of behavioural change as it has intentions at the centre of its theoretical model and is one of the strongest second-generation theories of change. No published article, however, has been found that used TPB in leadership development to assess programme effectiveness at changing leadership behaviours. This will be one of the key theoretical contributions of this research study.

Fishbein evolved the original theory of reasoned action (TRA) (Fishbein & Ajzen, 1975) into an *integrative model* (IM) (2008) to health promotion. Fishbein's proposed theory uses the same components included in the TPB (i.e. intentions, attitude, subjective norms, and perceived behavioural control), but adds environmental factors and skills and abilities as moderators of the intention-behaviour relationship. Fishbein's integrative model has potential to become a theory that can be applied to understanding and changing behaviour, but still needs to receive empirical support. This research has opted to choose TPB as the main theory of change because of its theoretical robustness and extensive empirical research.

Some researches have however highlighted that TPB cannot predict the speed of initiation of a behaviour or the maintenance of that behaviour over time (Sheeran & Conner, 2001). It is important that participants do not initiate a change in their authentic leadership behaviour and then relapse. An important model of change that has specifically addressed the issue of relapse is the *trans-theoretical model of*

change (TTM). TTM, developed by Prochaska and colleagues (Prochaska, 1979; Prochaska, DiClemente, & Norcross, 1992; Prochaska et al., 2006), also originates in health psychology and combines several approaches to change (e.g. behavioural and cognitive) in an attempt to understand the process of sustainable human change. The TTM is an attempt to integrate existing theories and approaches (i.e. psychoanalytic, humanistic/existential, gestalt/experiential, cognitive, and behavioural) into a unified model of change (from more than 400 different therapies). A key component of the TTM is the *Stages of Change* (SOC), six well-defined stages that people go through in order to achieve permanent change: Pre-contemplation, Contemplation, Preparation, Action, Maintenance, and Termination.

Their work has been tested on thousands of individuals in more than fifty different studies, mainly focussed on discovering how people overcome health related problems such as smoking, alcohol abuse, emotional distress, and weight control, but it has been shown to effect lasting change in other areas such as personal growth, and organisational change (Cunningham et al., 2002; Prochaska, Prochaska, & Levesque, 2001; Skiffington & Zeus, 2003, 2005). Harris and Cole (2007) tested the SOC in a company-sponsored leadership development scenario and conclude that this model of change has potential for being reliably used for leadership development.

The stages of change (SOC) is somewhat related to TPB as it has been argued that SOC model implies that intention scores increase in a linear fashion, at least in the first three stages of change (Godin, Lambert, Owen, Nolin, & Prud'homme, 2004; Sutton, 2000). In addition Prochaska's et al. (Prochaska & DiClemente, 1984) model is interesting for this research study as it introduces the construct of readiness for change. While the construct of intentions in TPB could be understood as representing a person's motivation to perform behaviour, it does not specifically include the concept of change contemplation/readiness into the theory. Sheeran and Conner

(2001) suggested that TPB may need to incorporate analyses of the processes of change such as Prochaska et al.'s model (2006).

With Authentic Leadership Development theory (ALD) and the Theory of Planned Behaviour (TPB) this research has a solid yet innovative ground to test its hypotheses. However, to account for individual differences in their readiness to change, positive contemplation of change (as conceptualized in the stages of change model) has been included in the theoretical framework of this research.

The combination of TPB and SOC has been done before by Humphreys, Thompson, and Miner (1998). In a study of breastfeeding intention, they showed significant positive correlations between both: *stages of change* (SOC) for breastfeeding and breastfeeding *intention* (as per TPB), and suggest that the complementary relationship identified between the two theories supports their future use together in both educational and research endeavours. This research study will take these two concepts (intentions and positive contemplation of change) and explore their validity in helping us understand behaviour change in leadership development programmes.

In conclusion, if we want to evaluate how individuals change as a result of a leadership programme, we have to combine leadership development theory with individual change theory.

The theory of leadership development will provide the competencies to be measured, while the theory of behavioural change will help us understand why leaders are able, or not, to develop such competencies. This will be explored further in the next chapter.

II. THEORETICAL FRAMEWORK

This chapter provides a discussion about the underlying theories of this research and presents the theoretical framework that served to develop and guide the hypothesis of this study. Section 1 discusses the Authentic Leadership Development (ALD) theory in detail and presents the first hypothesis. Section 2 presents and discusses the Theory of Planned Behaviour (TPB) and presents the second hypothesis. Section 3 justifies the inclusion of Positive Contemplation of Change as a moderator variable within the model and presents the third hypothesis. Finally, section 4 puts these constructs and theories together and summarizes the three key hypothesis of this study.

As explained in the previous chapter, this study lays ground on leadership development theory together with theories of behavioural change. In this way, this theoretical framework builds on *Authentic Leadership Development* (ALD) theory (Gardner et al., 2005b) and the *Theory of Planned behaviour* (TPB) (Ajzen, 1991). See figure 1.
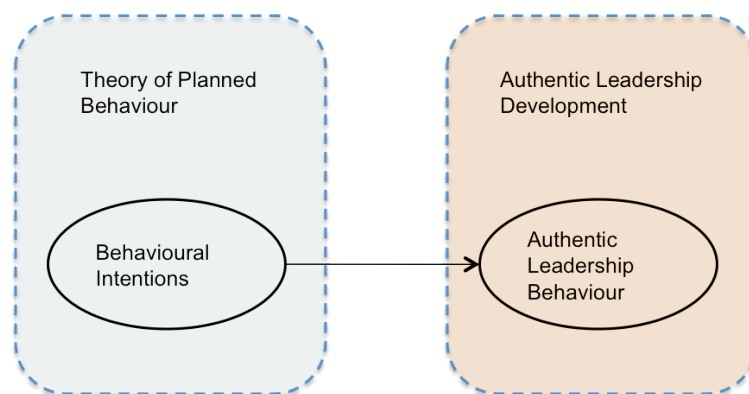

Figure 1. Theoretical Framework Relationship between constructs.

This combination is both innovative, as it has not been done before and it provides the research a more solid ground to test its hypothesis. It also responds to gaps identified in most previous meta-analytic studies (e.g. Aguinis & Kraiger, 2009; Judge & Piccolo, 2004; Taylor, Russ-Eft, & Chan, 2005), which highlight the importance of testing leadership development effects with the presence of mediators (e.g. behavioural intentions) and moderators (e.g. positive contemplation of change). This research is set to explore whether leadership development programmes help individuals change their authentic leadership behaviour, and if so, how the development of behavioural intentions influence the modification of such behaviour. To develop the hypotheses of this study, this chapter analyses these two theories in more detail: Authentic Leadership Development theory (ALD) and Theory of Planned Behaviour (TPB).

1. Authentic Leadership Development (ALD) theory:

Gardner et al. (2005b, pg. 12) defined authentic leadership development as a process that "*draws from both positive psychological capacities and a highly developed organisational context to foster greater self-awareness and self-regulated positive behaviours on the part of leaders and associates, producing positive self-development in each*".

Authentic leadership has been already discussed in the literature review, so this section further presents the key concepts of the theory that are relevant to this study.

The construct of authentic leadership development used in this research study is presented in figure 2. Such construct, is also the one matching the questionnaire that Avolio, Gardner, and Walumbwa developed, to measure ALD (2008).
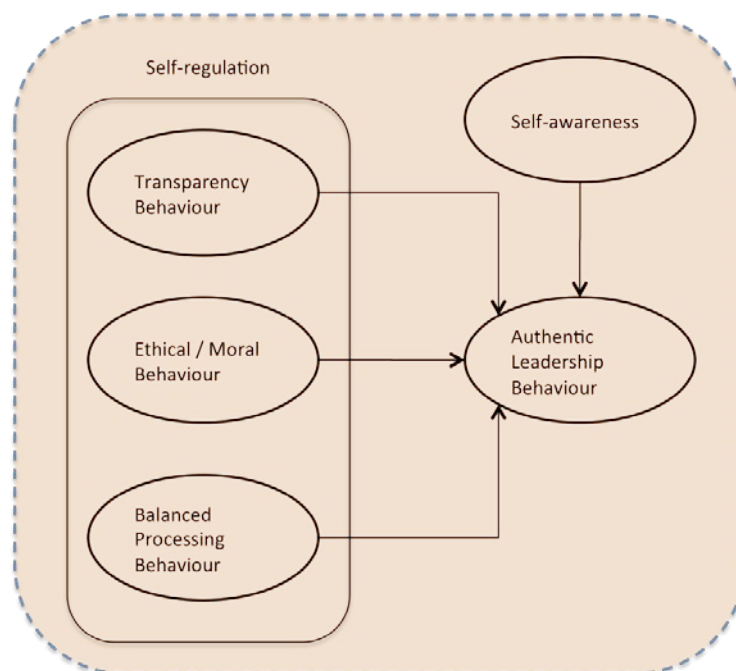
Figure 2. Authentic Leadership Behaviour construct.

The concept of authentic leadership, according to these authors, is composed of two constructs: self-awareness and self-regulation, and self-regulation on itself has three main behaviours: transparency, ethical/moral and balanced processing. This research questions whether leadership programmes help the development of such characteristics. To understand these constructs of the ALD theory better, below they are described and analysed in some detail:

Self-awareness, in many studies, has been pointed out as a key component of leadership development efforts (e.g. Avolio & Gardner, 2005; Brown & Posner, 2001; Burke & Sadler-Smith, 2006; Gardner et al., 2005a; Ilies, Morgeson, & Nahrgang, 2005). Whether we look at transformational, charismatic, servant, spiritual, or authentic leadership, all include self-awareness as a key antecedent to leadership behaviour (Avolio & Gardner, 2005). Social psychology literature provides ample

evidence of the positive consequences of self-awareness (Baumgardner, 1990; Campbell et al., 1996; Hoyle, Kernis, Leary, & Baldwin, 1999; Kernis, 2003). Self-awareness is not a destination, rather a process of becoming (Gardner et al., 2005b) that appears when individuals become cognitively aware of their existence within the context in which they operate (Silvia & Duval, 2001). Kernis (2003, p.13) defined the self-awareness component of authenticity as *"having awareness of, and trust in, one's motives, feelings, desires, and self-relevant cognitions."* The concept of self-awareness is defined here, as the degree in which leaders are aware of their strengths and limitations, of how others see them and are impacted by them.

Self-regulation is the second component of ALD theory and is concerned with how leaders and followers regulate the translation of their awareness into authentic behaviours–actions. Thus, self-regulation involves the processes whereby leaders exert self-control resulting in congruence between their values, attitude, and behaviours (Gardner et al., 2005a). Self-regulation is based on self-determination theory (Deci & Ryan, 1995, 2000), which posits that authenticity is achieved through internal regulatory processes, versus external pressures or consequences. Self-regulation of authentic behaviour includes key characteristics such as *transparency behaviour*, and *balanced processing*, while it assumes that these behaviours are guided by an ethical/moral value set (Avolio & Gardner, 2005). Identification with a leader that displays high levels of transparency, integrity, and moral standards is posited to produce elevated levels of trust, hope, positive emotions, and optimism among followers, which in turn elicit increases in commitment, satisfaction, and other positive work outcomes (Walumbwa et al., 2008).

Transparency is defined as the degree in which the leader reinforces a level of openness with others; that provides them with an opportunity to be forthcoming with their ideas, challenges and opinions (Avolio, Gardner, & Walumbwa, 2009a; Gardner

et al., 2005a). Relational transparency, also referred to as relational authenticity (Kernis, 2003), means that the leader displays high levels of openness, self-disclosure and trust in close relationship. This relational authenticity has been argued to enhance interpersonal relationships (see Ilies et al., 2005).

Balanced Processing of information is defined as the degree in which the leader solicits sufficient opinions and viewpoints prior to making important decisions (Avolio et al., 2009a; Gardner et al., 2005a). As part of his discussion of authenticity, Kernis (2003) uses the term *unbiased processing* to refer to a neutral, non-reactive, and non-egoistic acceptance of one's strengths and weaknesses. Ample evidence exists however in social psychology literature to indicate that humans are predominantly biased as information processors (Walumbwa et al., 2008), particularly when it comes to processing self-relevant information (Tice & Wallace, 2003). For this reason, ALD theory prefers to use the term balanced processing.

Finally, *Ethics/Moral* is defined as the degree in which a leader sets a high standard for moral and ethical conduct (Avolio et al., 2009a; Gardner et al., 2005a). The ALD theory advocates that an inclusive, caring, ethical and strength-based organisational climate will play an important role in the development of authentic leaders and followers. Avolio and his colleagues (2005; 2003; 2003), unlike other important authors for the development of ALD theory (e.g. Deci & Ryan, 1995; Kernis, 2003) have argued that authentic leadership includes a positive moral perspective characterized by high ethical standards that guide decision making and behaviour. As explained in the previous chapter, the authors of this study believe that ethical /moral behaviours are a key component of successful leadership today.

Are leadership development programmes in the marketplace effective at developing such components of authentic leadership? This research study expects to provide evidence to support the premise that authentic leadership is developed

through the participation in a leadership development programme. This is, therefore, the first main hypothesis of this research:

H1. Authentic leadership behaviour change is observed after a leadership development intervention.

The first hypothesis analyses whether leadership development programmes help individuals to change. This study however, is interested in explaining not only whether people change as a result of a leadership development intervention, but also to start exploring why people do or do not change. Consequently, the second and third hypotheses of this study will examine how individuals are able to change their behaviours, from two different points of view, which are complementary to each other.

As explained earlier, the theory of planned behaviour, a well-researched and solid theory, has been chosen as the personal change theory to analyse behaviour change pre-post a leadership intervention. The next section reviews TPB in detail and develops the second hypothesis of this study.

2. Theory of Planned Behaviour (TPB)

As seen in the literature review, the theory of planned behaviour posits that human behaviour is influenced by three major factors: a favourable or unfavourable attitude toward the behaviour, the perceived social pressure or subjective norm to perform or not perform the behaviour, and the perceived behavioural control in relation to the behaviour. In combination, attitude towards the behaviour, subjective norm, and perceived behavioural control lead to the formation of a behavioural

intention (i.e. readiness to act) to perform a certain behaviour (Ajzen, 1985; Ajzen, 1991).

Figure 3 presents schematically the TPB construct used in this study:
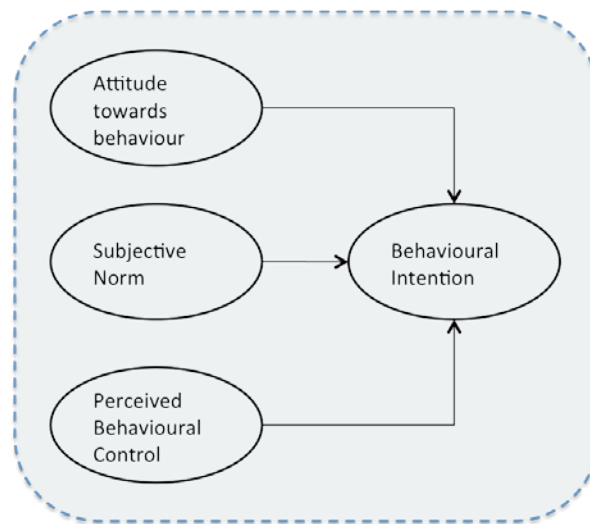
Figure 3. Behavioural Intention construct.

The idea that intentions are an immediate antecedent of actual behaviour is shared by other social psychological models (e.g. Fisher & Fisher, 1992; Gollwitzer, 1993).

TPB further proposes that attitude, subjective norm, and perceived behavioural control are formed based on internal beliefs about these three factors (i.e. behavioural beliefs, normative beliefs, and control beliefs). If a leadership development programme is set to modify behaviour it will have to be able to affect individual beliefs.

Considering behaviour as a direct cause of both the motivation to perform such behaviour (intention), and the ability to perform it (behavioural control) is not new (Ajzen, 1991) and constitutes the theoretical base for other fields of study such as

animal learning (Hull, 1943), and performance on cognitive tasks (Fleishman, 1958). Many studies have shown evidence that behavioural intention is an immediate antecedent of the actual behaviour, and that intentions to perform behaviours of different kinds can be predicted with high accuracy from attitude towards the behaviour, subjective norms, and perceived behavioural control (Ajzen, 2009).

If intentions are shown to be a good predictor of human action, this study is interested to assess the degree in which intentions to behave authentically will actually translate into future authentic leadership behaviour. While no research has been found in the literature that tested this in the past, the development of intentions to be a better leader needs a similar cognitive process than attempting to modify smoking or food consumption behaviours. As an example, the initiation and maintenance of behaviours to be more transparent with one's direct reports (e.g. being more open, direct and authentic in ones' communication) requires the intention to modify behaviour similar to health related behaviours. A leadership development programme is therefore posited to influence intentions towards authentic leadership behaviour through the development of its three predecessors: attitudes (AT), subjective norm (SN) and perceived behavioural control (PBC). More positive attitudes (AT) towards authentic behaviour, for instance, could be developed through an increased self-awareness about a problematic behaviour, which is contrary to authenticity. An increased perception of social pressures to behave authentically (i.e. SN) could be developed by a role-model into the programme (e.g. a higher level manager in the organisation whom behaves authentically). And the enhancement of individual's self-confidence and self-efficacy (i.e. PBC) to modify such behaviours of authenticity could be nurtured through the development of specific goals about ones future.

Bommer, Rubin, and Baldwin (2004), also explored the integration of a leadership theory (transformational leadership behaviour - TLB) with a theory of individual behaviour change (Theory of Reasoned Action - TRA). In this case, the authors, guided by Ajzen and Fishbein's TRA theory (1980; 1975), investigated two potentially relevant antecedents to the performance of transformational leadership behaviour (TLB): cynicism about organisational change and the leader's social context (specially peer leadership behaviour). Bommer's et al. study is relevant because they were not concerned about organisational outcomes of transformational leadership but on the antecedents of such leadership behaviour (i.e. why certain managers engage in transformational leadership while others do not). However, the theory of planned behaviour (TPB) has been mainly used in psychotherapy instead of to predict leadership behaviour and development.

The relationship between the two main theories in this study (TPB and ALD) could be significant for the new science of leadership development theory as well as for practitioner's designing or buying leadership development programmes. This is one of the unique contributions of the present study.

As exemplified in figure 4, this research postulates that behavioural intention has a mediating effect between attitude, subjective norm, and perceived behavioural control and self-regulation behaviours of authentic leadership. This provides the basis for the second hypothesis of the study:

H2. Intention mediates the relationship of attitude, subjective norm and perceived behavioural control towards authentic leadership behaviour change.
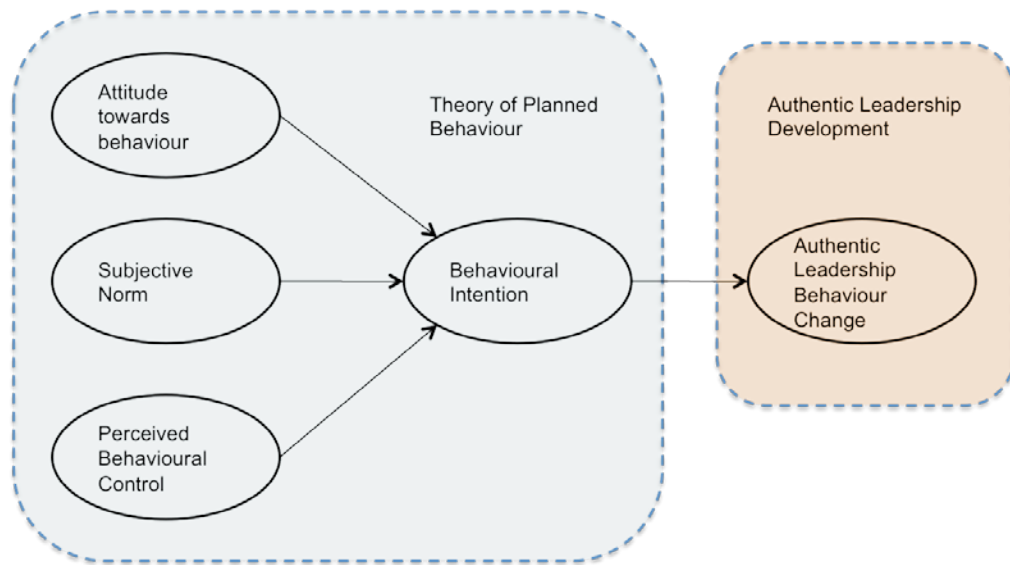
Figure 4. Intentions mediation between Attitude, Subjective Norm, Perceived Behavioural Control and Authentic Leadership Behaviour Change

By mapping TPB with ALD, one expects to find that individuals who developed stronger intentions towards authentic leadership through the leadership programme, also developed higher levels of authentic leadership after such intervention (i.e. achieved a higher level of behavioural change).

In TPB, intentions are assumed to capture the motivational factors that influence behaviour (Ajzen, 1991). Motivation to learn is recognised as playing an important role in training and development success (Baldwin, Magjuka, & Loher, 1991; Harris & Cole, 2007; Noe, Wilk, Mullen, & Wanek, 1997; Tannenbaum & Yukl, 1992). In other words, people attending a leadership programme are more likely to develop their capabilities if they are motivated to do so. Colquitt et al. (2000), in a meta-analysis of 106 studies over 20 years of research about motivation, concluded that learning outcomes are positively influenced by a trainee's motivation to learn and reported that motivation explained significant variance in learning outcomes. Some other studies, however, have only shown a modest relationship between motivation and learning (Colquitt & Simmering, 1998; Mathiew & Tannenbaum, 1992). Harris and Cole (2007)

suggest motivation to learn should be understood under the perspective of change management theory (i.e. the trainee's willingness for personal change or positive contemplation of change). For instance, individuals who highly contemplate change may show a positive and dramatic impact from the start of the development programme, while others who are less ready to change may take longer to evidence the impact from the intervention (Avolio et al., 2010). Peterson (2012) states that many well-designed, research-based professional development programmes, may fail to show effectiveness precisely because the audience they were trying to reach largely was not ready to change their behaviour.

In order to evaluate whether individuals with higher predispositions to change developed higher intentions to behave authentically, this research incorporated the Positive Contemplation of Change construct. The next section presents and further justifies the need of this construct in the model.

3. Positive Contemplation of Change

Readiness (as opposed to resistance) for change, which has its origins in expectancy theory proposed by Porter and Lawler (1968) and by Vroom (1968), has been broadly studied within organisational change literature (Armenakis & Bedeian, 1999; Bartlem & Locke, 1981; Gardner, 1977; Harris & Cole, 2007). Armenakis and his colleagues (1999; 1999; 1993) for instance have explained change readiness in an organisational context as being the result of five sentiments: change is needed, change is appropriate, change is doable, change is personally relevant, and the organisation is committed to change. This study however is concerned about personal behaviour change for developmental reasons, more than adapting ones behaviour to a changing organisational environment.

For this reason, the construct of developmental readiness was explored. Kesselman, Hagen and Wherry Sr. (1974) posit that an individual's readiness to change depends on the perceived need for change, the individual self-efficacy with regards to change, and the assessment of the personal valence of change. This construct is very close to the variables included in the theory of planned behaviour: A perceived need for change is captured in the attitude towards change, self-efficacy and perceived behavioural control are equivalent, and the assessment of personal valence of change is also related to perceived behavioural control.

Another conceptualisation of developmental readiness in a leadership development context was done by Avolio and Hannah (2008), who explained readiness as a composite of five variables: learning goal orientation, developmental efficacy, self-awareness, leader complexity, and meta-cognitive ability. The authors state that to accelerate leader development, one must first focus on assessing and building the developmental readiness of individuals and the organisation. Their construct, however, was too complex to be added to the theoretical framework of this study (see figure 4).

Lewin (1951) proposed that any change effort goes through three basic steps: *unfreezing* (i.e. reducing resistance to change and developing the perception of a need for change); *change* itself; and *refreezing* (i.e. ensuring that the new state is stabilized). Unfreezing a current state is in fact increasing the individual's change readiness (Drzensky, Egold, & Van Dick, 2012). Lewin's model has been criticized by its linearity, but it constituted a seminal work for future models of change that have viewed change as a continuous process (Michie & Abraham., 2004). One of these newer models is DiClemente and Prochaska's (1982), who created a model for personal change that maps the readiness for change construct into six stages focusing on the balance of pros and cons (Harris & Cole, 2007; Prochaska et al.,

2001). As introduced in the previous chapter, Prochaska and his colleagues developed a model which proposes that people change following six clearly differentiated stages, each of them with its own unique challenges: pre-contemplation, contemplation, preparation, action, maintenance, and termination (Prochaska et al., 2006). See figure 5:

Figure 5. Stages of Change

The perceived need for change or change readiness evolves with each stage, especially between the *pre-contemplation* and *contemplation-preparation* stages.

Pre-contemplation stage is characterised by people who typically deny having a problem and who are not intending to take any action to change. More specifically, in this stage we find those who have blind spots and are unaware that they "need" to change; those who, despite knowing, are never planning to change; and those who are not planning to change in the next six months. Pre-contemplative sentiments are associated with less perceived need for change (Harris & Cole, 2007) (i.e. having a negative contemplation of change).

Contemplation, and Preparation, on the contrary, are stages where people acknowledge that they have a problem and are beginning to think seriously about changing. Contemplators identify the need for change without any concrete plan, while in the preparation stage they have developed a plan of action and are, therefore, intending to begin to change their behaviour in the immediate future (within the next thirty days). Individuals in both the contemplation and the preparation stage

have sentiments associated with higher needs for change (Harris & Cole, 2007) (i.e. having higher scores on positive contemplation of change).

The next three stages of the model (i.e. *action*, *maintenance* and *termination*) assume that positive contemplation of change (i.e. change readiness) exists otherwise relapse could take effect. The *Action* stage is the one that requires the greatest commitment of time and energy, and the *Maintenance* stage is about working to prevent relapse, therefore commitment to change has to remain strong. *Termination* is the ultimate objective of the change process, more than a stage. People who successfully achieve permanent behaviour change have zero temptation and 100% self-efficacy (Prochaska et al., 2006).

Morera, Johnson, Freels, Parsons, Crittenden, Flay, and Warnecke (1998, p.39) described the stage of change model, which is part of a larger theoretical framework (the trans-theoretical model -TTM- of change), as "*one of the most influential models in the area of health behaviour change*". While the model received an extraordinary amount of empirical evidence that supports its ability to predict health-related behaviour change (Harris & Cole, 2007), it has hardly been used in training contexts. Cole, Harris and Feild (2004) applied the stage of change model to measure motivation in several university courses and reported being able to predict learning outcomes with Prochaska's model. The first attempt to use this model to a company-sponsored leadership development context was done by Harris and Cole (2007). They conclude that this model shows potential to be used reliably in developmental contexts as a valid approach to understanding pre-training motivational sentiments. Prochaska et al.'s (2001) conceptualisation of change readiness into six stages, seems, therefore, to be a suitable fit for this research but needs to be simplified to be added as a moderator construct to the TPB model. Hence, instead of adding a dichotomous variable (with several of the six stages of change), which would have required a large sample base to analyse, this study focussed on the contemplation as

it is the stage in the model where individuals have developed sentiments of needs for change (Harris & Cole, 2007; Prochaska et al., 2006) (i.e. higher scores on positive contemplation of change).

In summary, as positive contemplation of change is a psychological state that somebody has to develop in order to be successful at changing, this variable has been mapped as a moderator between attitude and intentions, within the TPB model.

Despite TPB's success in predicting both intentions and behaviour, Armitage and Conner (2001) proposed revisions of the framework to include variables that may increase predictive ability of the model. Previous research has already incorporated other variables within the TPB model (e.g. Rise, Sheeran, & Kukkelberg, 2010; White & Hyde, 2012), specially introducing moderating elements (e.g. Chen, Pan, & Pan, 2009; Fekadu & Kraft, 2001; Rivis, Sheeran, & Armitage, 2009), in order to increase its behaviour prediction. This study hypothesises that positive contemplation of change will moderate the attitude-intention relationship. The third hypothesis of this study is therefore integrated into the TPB model and it is an hypothesis that, combined with the second, helps us understand why people are able to change or not through the participation on a leadership development programme.

Graphically, figure 6 outlines the relationship between change readiness and attitude-intention in the theoretical framework of this study. Note that TPB proposes that correlations exist between the three antecedents of behavioural intention (i.e. attitude, subjective norm, and perceived behavioural control), which have been omitted from the diagram below.
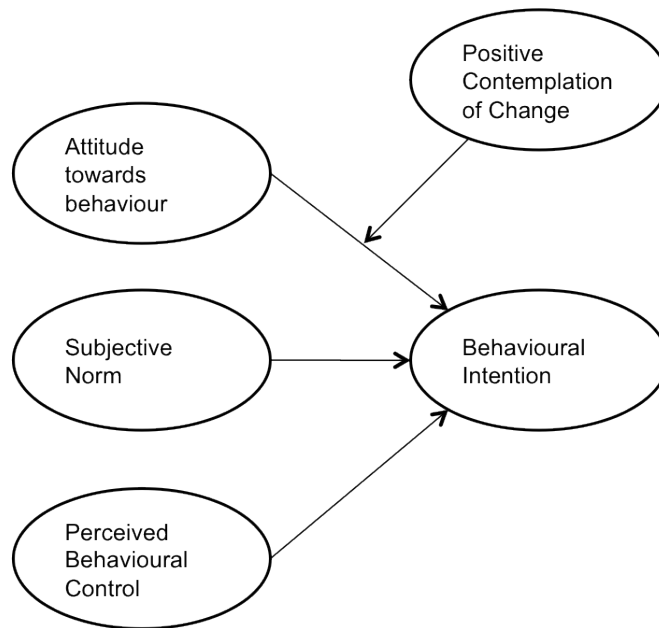
Figure 6. Positive Contemplation of Change moderation between attitude and intentions to behave
authentically

Thus, the third hypothesis of this study has been developed as follows:

H3.   Positive contemplation of change will moderate the relationship between
attitude and intentions to behave authentically, such that when positive
contemplation of change is high and attitude towards authentic leadership
is positive, the development of intentions is stronger.

4. Putting it all together

In order to respond to the hypotheses of this study, these three theories and
constructs, have been combined in the variable model design illustrated in figure 7:
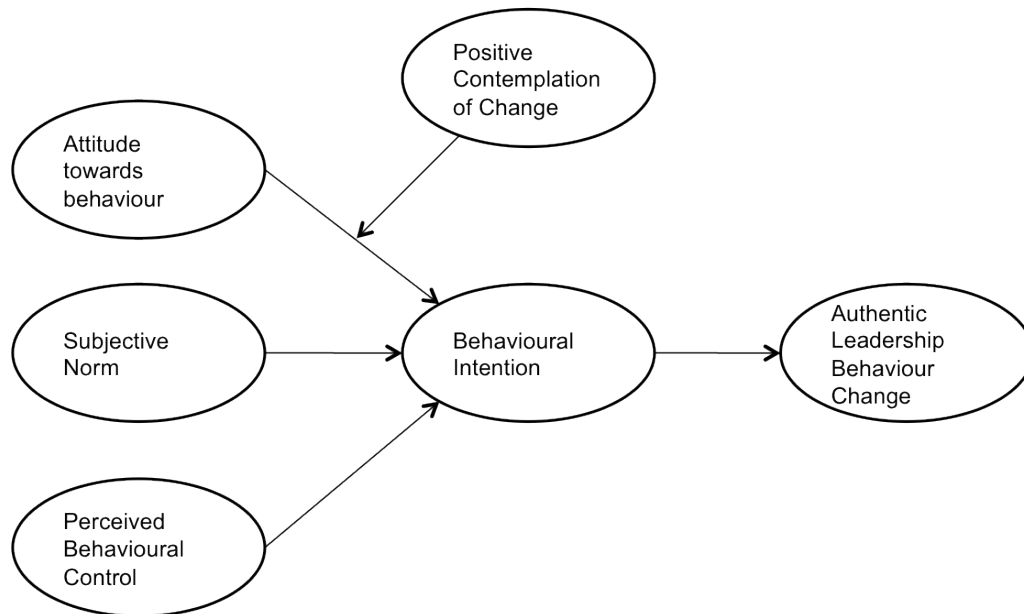
Figure 7. Causal relationship between all variables. The model proposes the development of intentions to behave authentically as an antecedent of authentic leadership behaviour with a moderation effect of positive contemplation of change.

In this model, we find both mediation as well as moderation relationships as a key part of the set of hypotheses. Mediation and moderation are descriptions of relationships between variables for refining and understanding a causal relationship. They constitute the researcher's hypotheses about how a cause leads to an effect (Wu, 2008). A mediator is a third variable that links a cause and an effect; while a moderator is a third variable that modifies a causal effect.

The mediating effect of behavioural intention in the model indicates that the relationship between attitude, subjective norm and perceived behavioural control, and authentic behaviour change, is better explained by introducing behavioural intention as a mediator (hypothesis H2). This means that it is expected, for instance, to find a lower direct correlation between attitude towards behaviour and authentic leadership behaviour change.

Of equal importance to the hypothesised causal relationship between variables (figure 7) is the moderating relationship that positive contemplation of change has

between attitude and behavioural intentions (hypothesis H3). That is, individuals with higher contemplation of change sentiments are expected to achieve higher levels of intentions towards authentic behaviour.

Below the three key hypotheses of this study are summarized:

Hypotheses summary:

H1. Authentic leadership behaviour change is observed after a leadership development intervention.

H2. Intention mediates the relationship of attitude, subjective norm and perceived behavioural control towards authentic leadership behaviour change.

H3. Positive contemplation of change will moderate the relationship between attitude and intentions to behave authentically.

The first hypothesis analyses if people change or not while the second and third hypothesis combined, shed light into how individuals are able to modify their behaviour as a result of a leadership intervention. This theoretical framework is innovative in that it combines a theory of leadership development (i.e. ALD) with a robust theory of behaviour change (i.e. TPB) and is further enhanced by introducing a change readiness variable (i.e. Positive Contemplation of Change) originating in health psychology research and practice.

III. METHODOLOGY

This chapter provides a description of the methodological approach used to examine the hypotheses derived from the previous chapter. Section 1 presents the research paradigm, the methodology used and its design appropriateness. Section 2 includes the procedures that this study followed to gather data, the organisations that collaborated in the research, as well as presents considerations of ethical issues involved in the research. It also presents the specific leadership development programmes used in the study. Section 3 discusses about the sample base that was used in this research. Lastly, section 4 details de three questionnaires that were sent to participants of the study and presents the Confirmatory Factor Analysis that was performed to validate the TPB scale.

The previous chapter presented a conceptual model of leadership development, which proposes the development of intentions to behave authentically as an antecedent of authentic leadership behaviour with a moderation effect of positive contemplation of change. In order to establish causal relationships within the model, typically an experimental design is the most suitable as it allows manipulation and control of the causality (Shadish, Cook, & Campbell, 2002). The current study adopts a positivist approach to the scientific study as a core research paradigm to investigate the hypotheses proposed in Chapter Two. In this way, this chapter discusses the generic philosophy and methodology used, with justifications of the design selected.

1. Methodology and design appropriateness

The use of quantitative methods and the positivist understanding of science has allowed organisational psychology research to advance and to become well recognised in the past few decades (Baum, 1995; Creswell, 1994; King, 2000). Positivism allows research to be replicated and generalised. This study follows a quantitative approach as a core research paradigm. This allows us to test the theory using hypotheses, establishing causal relationships, and making generalisations that increase our understanding about how people develop leadership skills. At the same time, the positivist approach allows the researcher to remain independent from the research participants and minimise the effect that the observer has over the observed. For all this, a quantitative approach is most suitable for this study.

The use of questionnaires has been broadly applied in this field of study as a good quantitative methodology to convert individual responses into numerical data, which can be analysed statistically (e.g., Hirst, Mann, Bain, Pirola-Merlo, & Richver, 2004; Judge & Bono, 2000; Seifert & Yukl, 2010). Authors studying authentic leadership development call for more empirical research to advance this new theory (Avolio & Chan, 2008), and specifically they emphasise the need to incorporate more longitudinal research (Avolio & Chan, 2008; Hayward & Voller, 2010; Walumbwa et al., 2008).

While numerous theories in social and health psychology assume that intentions cause behaviours, most researchers studied this relationship with correlational studies that preclude causal inferences (Webb & Sheeran, 2006). Cross-sectional studies cannot rule out the possibility that behaviour caused intention, and not the other way around. This research is an empirical study that goes beyond the more pervasive

cross-sectional designs, and addresses such gaps and literature recommendations for future research (Gardner et al., 2010; Lowe & Gardner, 2000). For that reason a longitudinal study has been designed with Pre-test – Post-test measures that explores if and how individual leaders, following a leadership development programme, are able to change their authentic leadership behaviours.

Leadership literature also emphasises the need to take into account the individual leaders' differences into the design of programme development (Avolio & Chan, 2008). This is why this study incorporates a behaviour change model to understand better differences in individuals following the same leadership programme. The best way to measure the effect of each programme relative to each individual characteristics and learning preferences is to use a Pre-test – Post-test design (Collins & Holton, 2004). This is also a good choice as this study measures individual change from participants on several different programmes. The level of analysis in this research is, therefore, the individual, as opposed to the leadership programmes.

Questionnaires were sent to all participants one month prior to programme start dates (Pre-test) and were distributed again one month after the end of the programme (Post-test). See figure 8.
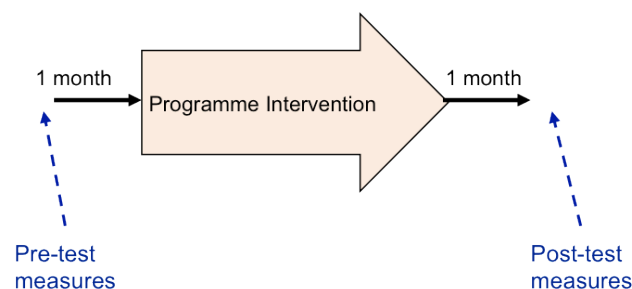

Figure 8. Pre-test – Post-test research design.

But measuring individual change is challenging, as there are many other factors that could have caused that person to change. To increase the validity of results, this study incorporates control groups in its design (De Vaus, 2001). This research, therefore, falls under the quasi-experimental field design. For this to be an experimental design it would have needed to incorporate random selection between the experimental and the control groups.

The current research addresses additional gaps in the leadership development literature. A meta-analysis of experimental/quasi-experimental studies looking at leadership development over the past 100 years revealed two important methodological limitations (Reichard & Avolio, 2005): that research was conducted in laboratory settings rather than in field settings and that the majority of leadership interventions lasted less than a day. This study analyses four real leadership development programmes in the marketplace today that lasted between 3 and 16 contact days and spanned from 3 days to 12 months.

To make the research design of this study even stronger, rater responses were incorporated. The Center for Creative Leadership, building on Kirkpatrick's (1959) scale of training evaluation, proposed five levels for evaluating leadership development: 1) measuring participant satisfaction with the programme and planned actions; 2) measuring changes in knowledge, skills and attitudes by participants themselves; 3) measuring observable behavioural changes on-the-job by co-workers, bosses or subordinates (typically through 360º instruments); 4) measuring business impact and organisational changes; 5) measuring a true quantified return on investment, comparing monetary benefits with programme costs (Phillips & Phillips, 2007).

Research indicates that there is no significant relationship between immediate participant satisfaction and other learning outcomes (Dixon, 1990; Kets de Vries et al., 2008) so designing a research study based on level 1 on this scale would not be solid ground. This study operated at the third level of this continuum: 360°-instruments were used to assess authentic leadership behaviour before and after the programme by the participant and by other raters such as their bosses and subordinates.

To be able to evaluate the programme impact at levels 4 and 5 would have required the involvement and investment of the sponsoring organisations at higher levels and that was not possible at the time of the study. While this study was limited on its ability to measure organisational outcomes to level 3 on the scale above, levels 4 and 5 focus on organisational outcomes, and this study is centred on individual changes of behaviour, as a predecessor of larger organisational changes.

In summary, the three main benefits of this reseach's design are: the longitudinal focus (pre-test – post-test), the inclusion of self and rater responses, and the existence of control groups.

2. Procedures and Organisations

Ethical issues involved in the research were analysed and the full approval was obtained. According to the Data Protection Act (1998), participants were informed in writing on how their confidentiality and anonymity would be upheld. There were no foreseen risks in the participation in this survey study. In the cover letters used to send the questionnaires, a statement that the participation was voluntary was included. The anonymity of responses as well as the confidential treatment of information was also explained in the cover letters (see appendix A).

This study did not require participant selection as the three questionnaires used were sent to all participants of the selected leadership development programmes. In all instances, however, a gatekeeper was necessary to get the email addresses of participants. All cover letters were discussed and in some cases co-designed with the gatekeepers to minimise the risk of programme participants ignoring the communication. Furthermore these gatekeepers signed, in most cases, the cover letters send (whether as individuals or with the department name within the organisation) (see appendix A for all cover letters used: *EDF-self, EDF-rater, Dell-self, Dell-rater, EADA-self, EADA-rater, CEDEP-self*).

The process for obtaining contact information for participants was different in each case, as it will be detailed in this section when presenting each of the four organisations that this study partnered with.

All questionnaires were built and managed using an on-line survey engine: SurveyGuizmo version 2, which allows to design and distribute questionnaires, send reminders, track responses and compile them for its analysis. Responses were exported from SurveyGuizmo into excel, where data was cleaned and prepared to be imported into SPSS database formatting.

The three questionnaires that this study used were sent to six programmes within four very different organisations. All of these programmes incorporate, more or less explicitly, the notion of authentic leadership development as part of them as will be analysed later on this chapter. The four organisations selected for this study were complementary between each other: two of them were corporations and surveys were sent to some of their in-company leadership development programmes; the other two organisations were business schools and participants surveyed were attending an

open enrolment programme with an important leadership development component as part of it.

The fact that surveys were sent to participants of different leadership interventions is another strength of this study's design. Having surveyed only one programme in one organisation would have made it more difficult to generalise results as they could be due to the specifics of such leadership intervention or organisation. The four organisations as well as the programmes selected to gather participant responses are briefly explained below.

In-company programmes:

Large corporations have their own talent management interventions through which they implement tailor made leadership development programmes for their different levels of management. This study selected mid-level management programmes at two large corporations: *Electricité de France* (EDF) and at Dell Corporation (DELL). While these two companies are not representative of the entire market and population, they constitute a perfect base for this study for the following reasons: They are large multinationals and as such maintain a constant intake for their leadership development programmes that span Europe Middle East and Africa (EMEA). Both corporations operate in significantly different markets and industries, reducing possible issues of confidentiality between them for participating in the same study. The selection of these two large organisations was especially interesting for this study as they have very different corporate cultures and they also had developed leadership programmes that were significantly different from one another, providing the opportunity to observe possible differences between them and/or the possibility to generalise results that are common to both. Below the two corporations and the

leadership interventions used in this study are briefly presented to be able to understand these differences and the type of programmes that were hypothesised to develop authentic leadership change in participants.

EDF Groupe is a European leader in the energy sector; the group is present in all major business areas from electricity production to trading, and is making inroads into the European gas supply chain. EDF is the main player in the French electricity market, and the Group also has a solid foothold in the UK, Germany and Italy. EDF has set itself the goal of becoming the European leader in the energy of tomorrow, which it is expressed in a shared vision, mission, and ambition (EDF, 2013).

Data was collected from a leadership development programme specially designed for their pool of managers that show potential to become senior leaders in the years to come. This programme was called *Thinking-Out of the Box* (TOB) and was a 12-day programme divided in four 3-day-sessions that span approximately 7 months.

TOB was conceived in 2007 with the overarching objective of developing authentic and fair leaders (without following ALD theory). An important component of TOB is raising participants' self-awareness. TOB also focuses on other key leadership competencies such as developing trust and ethical standards within the leader's circle of influence. Among other things, the programme intends to develop leaders that can make decisions that are good for the stakeholders and are at the same time in line with the ethics and values of the organisation.

Participants' email addresses were obtained through EDF Corporate University. They also agreed to sign the cover letters that were sent to all participants. The TOB programme lasted for seven months and after one edition it was discontinued, so it was only necessary to obtain email addresses of one cohort.

DELL is a multinational information technology corporation based in Texas, United States, that develops, sells and supports computers and related products and services. DELL has large operations in Europe with a base in London. This American corporation is leader in the computer market and a significant player in the consumer electronics and B2B solutions and services market (Dell, 2013).

Data was collected from three management programmes that are offered to different levels of management, below executive positions: *Essentials of Management* (EoM), *Front-Line Leader Academy* (FLLA), and *Building Team and Individual Capacity* (BTIC). These programmes are 3 to 4 days long, concentrated in one week, and there are multiple intakes every year in different geographic areas throughout the EMEA region (Europe Middle East and Africa). In order to increase training impact, the participant's managers are involved before and after the programme. Managers need to meet with the training participant before the course to determine how it will result in the behaviour change needed to realize team, organisational, and corporate goals. This is the sentence that Dell includes in the programme description: *"...research shows that less than 15% of training "sticks" and leads to performance improvement on the job. Manager involvement in training boosts this number to 80% and higher. If you are serious about getting measurable business impact from this training course for your team and organisation, assure that the manager of the attendee is involved."* The participants' managers are also asked to do a follow up with individuals 1 to 3 months after the completion of the programme to discuss the progress of their development objectives.

While none of these three programmes have been developed based on ALD theory, we could find many areas that coincide with it:

EoM is a 3-day programme designed for first-time managers and for individual contributors who are moving into a management role. The course purpose is to gain awareness about expectations of a leader, communicating as a leader, motivating and

giving feedback, coaching and facilitating work through others. Other specific objectives of the course include understanding the decision-making process and how their short & long-term decisions impact the individual, the team, and the organisation.

FLLA is a 4-day programme focused on the development of self-awareness of personal style/conflict preferences through role-play situations, and feedback from peers and facilitators. The programme also addresses specific competencies such as decision making and active listening in order to motivate, reward, and provide recognition to direct reports. It also fosters inclusiveness and the development of trust with direct reports.

BTIC is also a 4-day programme focused on change, delegation and team development, whether the team is localized or virtual. The course purpose is to enable managers to develop their direct reports and to build the capability of their teams to achieve business results. Some of the specific objectives include valuing and leveraging team diversity using coaching skills to effectively develop team members and enhance performance.

Participants' email addresses were obtained through a central function at Dell that coordinated and planned all training interventions across the EMEA region. The head of Talent Management in this region, offered to sign the cover letters that were sent to all participants to maximise responses (see appendix A). As Dell's programmes lasted for 3 to 4 days, it was possible to send the surveys to participants from 36 different intakes throughout EMEA. This required a close coordination with the company's talent management department. Between two and six weeks prior to the programme start-date, Dell provided a list of participants and their email addresses. This list was updated weekly as their were new participants and others that cancelled their attendance, or even complete programme intakes that due to different reasons were cancelled.

Open-enrolment programmes:

Business Schools offer open enrolment programmes that, in contrast to in-company development, bring together leaders from a variety of organisations. This study has surveyed two well-known business schools in Europe and the world: EADA and CEDEP.

EADA (*Escuela de Alta Dirección y Administración*) is an open, plural and diverse business school based in Barcelona, Spain. EADA was founded in 1957 and was one of the first Spanish institutions to provide training programmes that specifically targeted the business world. Their educational methodologies promote "learning by doing", and their mission is to contribute to a fairer, more balanced and sustainable society (EADA, 2013).

Data was collected from EADA's Executive MBA programme (EMBA). One of EADA's core strengths is in promoting personal and professional development as an integral part of all of their programmes. MBA programmes, and particularly executive MBAs, often appear as a proxy for leadership learning in the literature (Auken, Wells, & Chrysler, 2005). EADA's EMBA is a 14-month programme with an important focus on leadership development. It includes eight 2-day residential modules (i.e. 16 days) to cover competencies such as self-management, communication, leadership and negotiation. Five and a half of the eight modules focus specifically on leadership development, where a key component is raising individuals' self-awareness about their management and leadership competences and putting together a development plan to improve them. The programme also includes five hours of personal voluntary coaching to help individuals achieve their personal and professional goals. These personal development modules start at the beginning of the programme and end

about 10 months later, so the surveys were distributed before and after this period of time.

Participants' email addresses were obtained through the director of EADA's EMBA programme. The EMBA Team signed the cover letters sent to all participants. The EMBA programme lasted for 14 months and it was possible to survey two intakes that started 3 months apart.

CEDEP (Centre Européen d'Education Permanente) is an Executive Education Consortium; founded in 1970 in association with INSEAD to design and develop innovative open, company specific programmes for its members. The consortium is composed of industry leaders, rich in global experience and culture, such as *Aviva, Axa, Bekaert, Honeywell, ING, L'Oréal, Renault, Tata Steel and Valeo* (CEDEP, 2013).

Data was collected from CEDEP's General Management Programme (GMP). GMP has 3 modules that run over 9 months. Each module is two weeks long (i.e. 10 days). The first one (M1) focuses on strategic aspects of management (e.g. macro-economic environment, market innovation, and long-term value creation); the second module (M2) focuses on operational aspects (e.g. marketing, accounting, purchasing, and risk management); the third module (M3) focuses on the self (e.g. leadership, change management, and work-life balance). Data was collected before and after M3 as it is the module of the programme dedicated to personal advancement. An important component of GMP-M3 is raising participants' self-awareness by confronting them with the human challenges of leading a modern international business and it also includes a group coaching process witch starts during M2 with an assessment of leadership capabilities.

Participants' email addresses were not disclosed in this case. Instead, the director of the General Management Programme sent the cover letter and the survey

link directly to all participants. The GMP-M3 programme lasted for two weeks but it was only possible to survey one intake.

In summary

While it is difficult to classify categorically these six programmes into the four components of the ALD theory (i.e. self-awareness, transparency, ethical/moral, balanced processing), a mapping has been done to illustrate the emphasis of each programme as well as the differences and similarities between them. See table 1.

Table 1 has been inferred from the information that was available about the programmes' objectives and their content. For corporate programmes (i.e. EDF and Dell's) it was internal materials used to inform the participants and their business units about the programme's outline, content and benefits. For business school programmes (i.e. EADA and CEDEP), the information came from marketing brochures (on-line or paper) used to promote the programmes to potential participants. In a couple of instances additional email communication was needed with the programme directors to ask for further details about the programme contents and objectives.

Based on this information the six programmes were examined to assess which of the Authentic Leadership Development (ALD) components was explicitly or implicitly part of the programme. It is important to notice here that these documents frequently used different wording than the one used in ALD theory, however, if transparency is defined as the degree in which the leader reinforces a level of openness with others; that provides them with an opportunity to be forthcoming with their ideas, challenges and opinions (Avolio et al., 2009a; Gardner et al., 2005a;

Walumbwa et al., 2008), and the programme had a focus on active listening and coaching skills, this was considered as an indication that transparency behaviour was part of the content of the programme. This was for example the case for Dell's FLLA programme where two of its specific outcomes were to "improve active listening skills" and "To develop trust with direct reports". The documentation also mentioned that the programme intended to "Foster an environment of mutual respect and open, honest collaboration in every interaction".

In table 1 below, the symbol (☐) means that the component was clearly present. The symbol (☐) means that the component was only partially identified in the programme documentation.

	Self-Awareness	Self-Regulation Transparency	Self-Regulation Ethical/Moral	Self-Regulation Balanced processing
EDF (TOB)	☐		☐	☐
Dell (EoM)	☐			☐
Dell (FLLA)	☐	☐		☐
Dell (BTIC)	☐	☐		
EADA (EMBA)	☐	☐		☐
CEDEP (GMP-M3)	☐	☐		

Table 1. Comparison table between programmes included in this study and their focus on authentic leadership components.

Because the six selected programmes had different lengths, there was a difference between the time span in which data was collected. The shortest was DELL's EoM where questionnaires were distributed about 2 months apart, while for

EADA's EMBA the measures were taken 12 month-apart. The issue of programme length is addressed in the discussion section. The next table summarises the programme length and time between test re-test questionnaires:

	Programme length	Programme contact days	Time between measures
EDF (EoM, FLLA, BTIC)	3-4 days	3-4 days	2 months
CEDEP (GMP-M3)	2 weeks	10 days	2.5 months
EDF (TOB)	7 months	12 days	9 months
EADA (EMBA-competency development)	10 months *	16 days	12 months

Table 2. Summary of programme length (time span between the beginning to the end

of the programme), contact days (equivalent days of formal contact between trainees

and facilitators/teachers), and time span between pre-test and post-test measures

* Note: EMBA is 14-month long, but the leadership journey is 10-month long

3. Sample

Surveys were sent to a total of 506 managers following one of the programmes explained above: EDF (Thinking Out of the Box - TOB), DELL (Essentials of Management – EoM, Front Line Leadership Academy – FLLA, and Building Team and Individual Capacity - BTIC), EADA (Executive Master in Business Administrations - EMBA) and CEDEP (General Management Programme - GMP). The split of participants between the different programmes is shown table3:

	Number of cohorts followed	Number of participants in the cohorts
EDF TOB	1	27
DELL EoM	11	100
DELL FLLA	14	157
DELL BTIC	11	126
EADA EMBA	2	54
CEDEP GMP	1	42
Total number of participants		**506**

Table 3. Detail of the split of participants between the four leadership development interventions and the number of cohorts followed of each type of programme.

Of these 506 individuals, 46.4% (i.e. 235) responded to the pre-test questionnaire only, and, 26.3% (i.e. 133) responded before and after. The demographics of people who did respond twice are the following: They had an average age of 37 years with 10 to 15 years of experience. Their gender split was: 72.9% male and 27.1% female. And their nationality is captured in table 4 below.

	% of participants
Spanish	30.8%
Slovakian	12.0%
Germans	9.8%
Irish	7.5%
British	6.8%
Italians	3.0%
Other*	21.1%

Table 4. Summary of nationalities of the participants in the study who responded before and after.

The cover letter to the survey sent to all programme participants offered them the possibility to include one to three raters in the evaluation. The only exception was CEDEP's participants as the programme director did not want to burden them with more work. The selected raters were sent only one of the three questionnaires that this analysis used (i.e. the ALQ). The total number of raters that responded before and after to the survey was 17 (3 for Dell-EoM, 3 for Dell-FLLA, 3 for Dell-BTIC, 1 for EDF, and 7 for EADA) This rater community was not homogeneous, and it is composed of a mix of managers, peers and colleagues who knew the participant well. Using multiple raters within rating sources (i.e. managers, colleagues, or direct reports) makes good psychometric sense in terms of enhancing the overall reliability of feedback (Day, 2001).

As explained before, the inclusion of a control group strengthens the robustness of the study (De Vaus, 2001) and helps researchers to be able to draw conclusions when change is to be measured. The surveys were therefore also sent to two control groups, one for the Dell's in-company programme and the other for the EADA's EMBA programme. Individuals included in these control groups were matched to treatment groups. The following sections detail the process used to select control group participants:

Dell control group:

The first step to select the control group within Dell was to analyse characteristics of individuals who had taken one of the three programmes surveyed

(i.e. EoM, FLLA, and BTIC). The company provided the necessary data about employees' grade, training history, working location, and gender to typify the key characteristics of the treatment group.

Hence, the company grade was the first selection criteria that helped reduce the database of European employees from more than 15.000 to a few hundred to which these programmes were targeted. The second filter applied was to eliminate individuals that had recently taken other development programmes that could have helped develop authentic leadership. The employees working location was another criteria used for the selection of the control group: Bratislava, Dubai, Halle, Copenhagen, Montpellier, Casablanca, Amsterdam, Limerick, Blacknell and Glasgow were the most popular locations. Gender was another criteria used to select the control group (63% from sample base were male while 37% were female).

With all this, a total of 211 Dell workers were selected that matched these criteria. The sample base included 99 managers and 112 high level individual contributors.

Of this control group of 211 individuals, 10.4% (i.e. 22) responded once (before) and only 3.8% (i.e. 8) responded before and after the 2-month span.

The control group did not include any raters as it was considered that enough time was asked from Dell employees in this study.

EADA control group:

The EADA's EMBA programme is an open enrolment programme in which individuals from multiple organisations attend. The demographic profile of the participant from 2009 to 2012 is as follows: They had an average age of almost 35 years and with more than 10 years of experience. 85.5% are Spanish nationals and

14.5 come from abroad. 83% are male and 17% female. In terms of their background (51% engineering, 20% business and economics, and 29% other studies); and concerning the company were they were working at that time (55% worked at multinationals, 25% at large organisations, and 20% at SMEs).

Following this demographic data, a sample base of 60 individuals was selected to be part of the control group and the three questionnaires were sent twice with a 12-month span in between them. Of this sample of 60 people, 26.7% (i.e. 16) responded before and 25% (i.e. 15) responded before and after. Like Dell's, this control group did not include any raters.

In summary, all valid responses (with no missing data) of this study are shown in table 5:

	SELF BEFORE ONLY	SELF BEFORE & AFTER	RATER BEFORE & AFTER
EDF	7	4	1
DELL	131	68	9
DELL control group	22	8	n/a
EADA	36	23	7
EADA control group	16	15	n/a
CEDEP	23	15	n/a
Total	235	133	17

Table 5. Summary of valid responses before the programme (pre-test) and after (post-test)

The resulting control group of this study was composed of 23 people (8 Dell employees plus 15 individuals with the same demographics as EADA's Executive MBA). This study collected four demographic variables: gender, age, nationality and years of experience. The control and treatment group were compared on those four

variables and this research was effectively able to match groups on all variables, except for age, which showed a delta of three years (the control group being older). Subsequently, all analyses were controlled for these variables.

4. Measures

This study used three complementary questionnaires corresponding to the three sections presented in the theoretical framework chapter: the first one measured authentic leadership behaviour of individuals attending a leadership development programme. As responses were obtained before and after the intervention, this measure was used to assess the degree of change in authentic leadership behaviour.

The second questionnaire measured the leader's intentions to change to explore and understand how individuals change their behaviours (or not) as a result of such intervention.

Because leadership development is a continuous process of becoming and that individual leaders start a programme at different points of development, a third measure to assess the individual's positive contemplation of change was included.

These three instruments will be reviewed below (refer to figure 7 to see the causal relationship proposed between variables).

ALQ: *Authentic Leadership Questionnaire:*

To test the first hypothesis of this study (i.e. Authentic leadership behaviour change is observed after a leadership development intervention), a measure of authentic leadership was needed.

The ALQ, is a validated (Walumbwa et al., 2008) questionnaire to assess authentic leadership with 16 items following a 5-point Likert-scale. For each behavioural statement, respondents have to choose between one of the five options: not at all, once in a while, sometimes, fairly often, and frequently if not always. This measure is a standard questionnaire that can be used as a self-report or as a 360°-evaluation instrument. In this research, data was collected from individuals as a self-evaluation report, and from up to three other important stakeholders for the person (e.g. boss, and two direct reports). The only condition that these raters had to fulfil was that they knew the participant well enough in a work context, and they had to be present before and after the programme intervention.

See a few sample questions referring to *self-awareness, transparency, ethical/moral* and *balanced processing*, in this order (see appendix B for the full questionnaire).

- As a leader I accurately describe how others view my capabilities (*self-awareness*).
- As a leader I admit mistakes when they are made (*transparency*).
- As a leader I make decisions based on my core values (*ethical/moral*)
- As a leader I solicit views that challenge my deeply held positions (balanced processing)

Cronbach's alpha reliability for the composite ALD measure showed good scores with the data set of this study (T1: 0.83 and T2: 0.82) The study measures and

reports ALD at time 2 (T2), but it controls for time 1, therefore both reliabilities were calculated.

TPBQ: *Theory of Planned Behaviour Questionnaire:*

This section describes the second measure of this study as well as the process used to validate it. This questionnaire was needed, combined with the ALD questionnaire, to test the hypothesis 2: Intention mediates the relationship of attitude, subjective norm and perceived behavioural control towards authentic leadership behaviour change.

This measure was the TPB questionnaire, which needed to be custom-built for this study following Ajzen's recommendations, and based on the Theory of Planned Behaviour, and on previous experiences building similar tools. "*Intentions and perceptions of control must be assessed in relation to the particular behaviour of interest*" (Ajzen, 1991, p.185).

Because the questionnaire needed to be designed to measure specific 'intentions', TPB and ALD theories were mapped together resulting in a questionnaire that assessed intentions to change self-regulation behaviours of authentic leadership: *Transparency*, *Ethical/Moral*, and *Balanced Processing*. To map TPB and its components (i.e. Attitude, Subjective Norm, Perceived Behavioural Control, and Intentions themselves), with these three authentic leadership behaviours, two items were designed for each relationship (i.e. two items to measure the Attitude to behave transparently, two items to measure the subjective norm to behave transparently, etc.). In this way, eight items were developed for each of the three behaviours of ALD (i.e. Transparency, Ethical/Moral, and Balanced Processing). The resulting measure was a 24-item questionnaire.

A 7-point-Likert-scale was used to gain more variability and reduce skewedness in the data collected as some of the items show some socially desirable answers. For each statement, participants in this study had to choose between one of seven options (e.g. strongly disagree, mostly disagree, slightly disagree, neither, slightly agree, mostly agree, and strongly agree).

The study used this questionnaire before and after leadership interventions, as a self-report only.

See a few sample questions referring to *transparency behaviour* of this questionnaire (the four questions below measure, in this order, *attitude, subjective norm, intention, and perceived behavioural control*). See appendix C for the full questionnaire (before CFA analysis).

- Transparency is necessary to be a good leader

- My professional environment promotes transparency behaviour

- I make every effort possible to be transparent

- Whether or not I'm transparent with others depends entirely on me

Before being able to send the questionnaire to the population in this study, the questionnaire had to be validated. The confirmatory factor analysis (CFA) performed on the questionnaire is presented below.

TPBQ CFA Analysis

To validate and to reduce potentially the number of items of this questionnaire a Confirmatory Factor Analysis (CFA) was performed. The measure was sent to a pool of 532 individuals from different groups: 109 participants who already completed

EDF's TOB programme throughout Europe; 25 managers at Dell Corporation in the UK; 113 executives following post-graduate degrees at three European business schools (i.e. ESADE's Change, Consultancy and Coaching programme, EADA's Executive-MBA and International-MBA programmes, and Aston's Executive-DBA programme); 155 senior international coaches who work for two organisations on the executive education market (i.e. The Center for Creative Leadership, and Ken Blanchard Companies), most of them operating in Europe and the USA; and 130 professionals from several industrial backgrounds and ages, mainly operating in southern Europe.

Of this sample base of more than 500 individuals, 50.2% (i.e. 267 individuals) responded to the measure. This high response rate allowed performing a statistically valid CFA analysis. The data set obtained had four missing values so the final data set used consisted of 264 good responses, with not out of range or wrong responses. Tests of normality were weak but this is quite typical for responses to a multi-level questionnaire, so that it was not considered to be an issue.

The CFA was run to the 24-item TPBQ. The names of these 24 variables were (in the order that they were written down in the questionnaire – see appendix C): TB1A, TB2SN, TB3I, TB4PBC, TB5A, TB6PBC, TB7I, TB8SN, EM1PBC, EM2A, EM3SN, EM4I, EM5SN, EM6PBC, EM7I, EM8A, BP1PBC, BP2A, BP3I, BP4PBC, BP5SN, BP5SN, BP6I, BP7SN, and BP8A.

Table 6 below shows the coding used for the variables names:

TB	Transparency Behaviour
EM	Ethical Moral behaviour
BP	Balanced Processing behaviour
I	Intentions
A	Attitude
SN	Subjective Norm
PBC	Perceived Behavioural Control

Table 6. Acronyms used to code the variables in the TPB questionnaire

All T-values were significant and, therefore, they showed that the items had a good loading for each corresponding factor. All standardized values were less than 1 and there were no negative errors. The chi-square test however was very high (908.08) so that the covariance matrix provided, and the covariance matrix implied in the hypothesized model, were not close together. This could be due to a number of reasons so other reliability indicators were analysed.

Goodness of Fit Statistics were in general poor and, therefore, did not show a good support of the factor model proposed. NFI, NNFI, CFI, IFI, GFI, and AGFI, were all under 0.9 and RMSEA was 0.100. Data did not show a good fit. Some of the loadings of the latent variables were low which meant that the error was high. There were also a number of cross-loadings and a lot of correlated-errors.

Table 7 shows how the model was improved step by step:

Model	Chi-Square	RMSEA	CAIC	NNFI	CFI	P-Value
24-item model	908.08	0.1000	1243.45	0.872	0.884	0.000
- item TB8SN	822.72	0.0999	1144.94	0.875	0.888	0.000
- item TB7I	760.60	0.1010	1069.67	0.868	0.882	0.000
- item EM3SN	604.27	0.0925	900.19	0.885	0.898	0.000
- item BP7SN	471.60	0.0830	754.36	0.903	0.915	0.000
- item BP4PBC	337.49	0.0694	607.11	0.931	0.940	0.000
- item BP8A	299.51	0.0695	555.97	0.925	0.935	0.000
- item TB4PBC	240.54	0.0639	483.85	0.940	0.949	0.024
- item EM1PBC	174.03	0.0524	404.19	0.958	0.964	0.366
- item EM2A	150.10	0.0525	367.10	0.954	0.962	0.370
- item EM4I	118.00	0.0475	321.85	0.959	0.966	0.582
Final model (- item BP5A)	**96.48 (*p* = 0.003)**	**0.0460**	**287.18**	**0.965**	**0.972**	**0.628**

Table 7. Confirmatory Factor Analysis (CFA) on TPB Questionnaire

In total, 11 questions were removed. The resulting 13-item questionnaire seemed to be a better model because it shows better fit statistics (all over 0.9), had an RMSEA of 0.0338 and a p-value of 0.888. AVE = 0.40 and CR = 0.88. Also all cross-loadings and correlated-errors were eliminated. See figure 9 for the resulting tested variable model for the CFA analysis. Factor loadings and correlations are detailed.
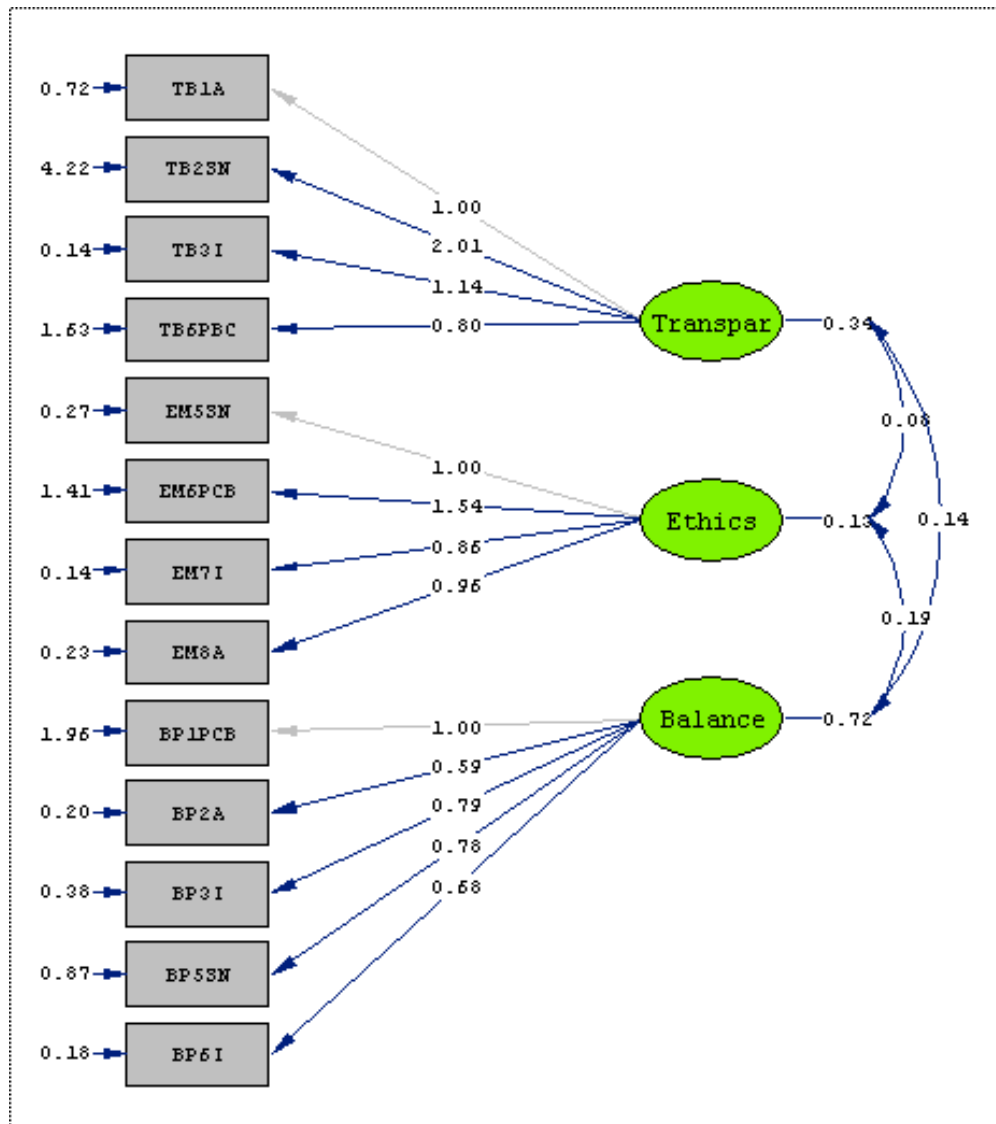
Figure 9: Variable model tested with CFA analysis showing resulting coefficients

The simplified and validated TPBQ (final model) was used as the third measure (along with ALQ and SOCS questionnaires) in this pre-test – post-test research design. Appendix D shows the final questionnaire sent to programme participants.

Table 8 below shows Cronbach's alpha reliability scores at T1 and T2. TPBQ scale reliability is weak, especially because some reliabilities such as *Perceived Behavioural Control (PBC)* at time 1 (0.40) could not be improved with this data set.

Cronbach's alpha reliability scores		
	Time 1 (T1)	Time 2 (T2)
Attitude (AT)	0.58	0.43
Subjective Norm (SN)	0.49	0.49
Perceived Behavioural Control (PBC)	0.40	0.49
Intention (IN)	0.59	0.68

Table 8. Reliability scores for TPB Questionnaire

PCC : *Positive Contemplation of Change:*

In this section we present the third measure used in this research, which in combination of TPBQ, tested the third hypothesis of the study (i.e. positive contemplation of change will moderate the relationship between attitude and intentions to behave authentically).

Three items were used to assess participants' readiness to change before the programme; more specifically the three items measure readiness for leadership development, vs. change in general. The selected items were taken from the *Stage of Change Scale* (SOCS) developed and validated by Harris and Cole (2007). The stages of change scale was originally developed by McConnaughy, Prochaska, and Velicer (1983) and revised by McConnaughy et al. (1987). This assessment, broadly used in psychotherapy research (e.g. Lam, Chan, & McMahon, 1991), measures the degree to which people are in one stage of change versus another and, therefore, measure their readiness for change (Prochaska et al., 2001).

The stage of change is a dichotomous variable with six possible values. Only three of these variables (i.e. *pre-contemplation, contemplation,* and *action*) were incorporated into previous research in training and development settings (see: Cole et

al., 2004; Harris & Cole, 2007) following the convention proposed by Lam et al. (1991) to assess and describe readiness to change. These three variables represent the three most relevant stages for a leadership development study.

Harris et al. (2007) adapted and validated the scale of change (SOCS) for a research inquiry about leadership development and concluded that SOCS could reliably and validly be used in developmental contexts. The authors report that the scores pre-contemplation and contemplation were correlated to the change readiness measure developed by Armenakis et al. (1999): -0.60 for pre-contemplation and 0.70 for contemplation. Indeed, people that are ready to change are in the contemplation stage of SOCS (Armenakis & Harris, 2009). Armenakis et al.'s (1999) readiness for change scale, however, measures more extensive change sentiments that those addressed in the stages of change model (i.e. SOCS) (Harris & Cole, 2007) as they look into readiness for organisational changes instead of readiness for developmental change. For these reason the three items included in the *Positive Contemplation of Change (PCC)* used in this study, were extracted from the SOCS scale. Specifically, the three selected items were the ones addressing sentiments about the leadership programme per se (e.g. Maybe this leadership development programme will be able to help me become a better leader), instead of sentiments about leadership development in general (e.g. I have some leadership challenges and I really think I should work on them).

The three items to measure positive contemplation of change used in this study were as follows:

-I am hoping this leadership development programme will help me better understand myself.

- Maybe this leadership development programme will be able to help me become a better leader.

- I hope that I get some good advice from this leadership development programme.

These items where developed on a 5-point Likert-scale (i.e. strongly disagree, disagree, neither agree or disagree, agree, and strongly agree). Cronbach's alpha reliability with the data set of this study showed good reliabilities: 0.75 for responses at time 1 (T1) and 0.80 for T2.

These three measures were aggregated together in one questionnaire to test the three main hypotheses of this tudy.

This chapter presented the methodology used in the present research. Next chapter will present its results and findings.

IV. MEASUREMENT AND RESULTS

This chapter presents the analyses and findings from the longitudinal field study. Section 1 describes some basic analyses that were performed on the data such as correlations between all variables. Section 2 presents research findings concerning the first hypothesis (authentic leadership behaviour change). Section 3 does the same concerning the second hypothesis (mediation of intentions). Section 4 analyses the third hypothesis (moderation of positive contemplation of change). Section 5, discusses the moderated mediation moderation model used to close this measurement chapter. Finally, section 6 presents a summary of results.

In chapter II, a set of hypotheses was put forward around the degree in which managers following selected leadership interventions developed authentic leadership and why. In order to test the hypotheses, a longitudinal quasi-experimental study was designed as proposed in chapter III. In this chapter, data is analysed and the results are presented following the hypothesis structure of chapter II.

1. Data Analyses

Chapter III presented the sample of 133 pre- and post-test responses of this research. Descriptive analytics, run over the sample, showed they were complete responses with no inputting errors, out of range values or wrong responses.

A correlation analysis between all variables was done pre- and post-test to provide an initial understanding of the relationship between variables in the theoretical framework (Field, 2005) (refer to figure 7 in Chapter II for the causal relationship of all constructs).

Tables 9 and 10 show the inter-correlation values between all constructs of this study before and after the intervention. Table 9 reports correlations within time (i.e. for T1 and T2 separately) while Table 10 reports correlations across time (from T1 to T2, and not the other way around).

	Time 1									
	Authentic Leader-ship Be-haviour	Attitude	Subjective Norm	Perceived Behavioural Control	Intentions	Positive Contempl. of Change	Programme Length	Gender	Age	Years of Experience
Time 2 Authentic Leadership Behaviour		.39**	.54**	.48**	.47**	.08	-.34**	-.01	.15	.00
Attitude	.49**		.55**	.39**	.65**	.23*	-.14	.07	-.07	-.16
Subjective Norm	.61**	.60**		.36**	.70**	.20†	-.18†	.04	-10	-.14
Perceived Behavioural Control	.56**	.22*	.45**		.55**	-.07	-.25*	.01	-.04	-.05
Intentions	.65**	.61**	.70**	.44**		.11	-.20†	.10	.07	-.06
Positive Contempl. of Change	.17†	.22	.19†	.02	.23*		.03	-.07	.04	-.15
Programme Length	-.36**	-.23*	-.38**	-.27**	-.41**	.07		.26**	.00	-.08
Gender	-.05	.07	-.10	.08	.02	-.04	-.26**		-.17†	-.25**
Age	.07	-.08	-.14	.05	-.01	.06	.00	-.17†		.67**
Years of Experience	.08	-.17†	-.17†	.14	.05	-.22*	-.08	-.25**	.67**	

† $p<.10$ *$p<.05$ **$p<.01$

Table 9. Correlation matrix within Time 1 (right of the diagonal) and within Time 2 (left of the diagonal)

Note: Correlation done with treatment responses only

		Time 1					
		Authentic Leadership Behaviour	Attitude	Subjective Norm	Perceived Behavioural Control	Intentions	Positive Contemplation of Change
Time 2	Authentic Leadership Behaviour	**.61****	.41**	.37**	.42**	**.44****	**.24***
	Attitude	.32**	**.51****	.33**	.30**	.41**	0.18†
	Subjective Norm	.42**	.32**	**.37****	.35**	.32**	0.12
	Perceived Behavioural Control	.44**	.25*	.29**	**.47****	.33**	0.04
	Intentions	.39**	**.38****	**.23***	**.38****	**.39****	.17
	Positive Contempl. of Change	-.04	.19†	.15	-.09	.17†	**.55****

† $p<.10$ *$p<.05$ **$p<.01$

Table 10. Correlation matrix across time (from T1 to T2)

Note: Correlation done with treatment responses only

The general pattern of relations was more or less as expected. In this section the most significant correlations per the conceptual model of this research are discussed (they are highlighted in bold in tables 9 and 10).

On table 9, significant correlations were found between the four elements of the Theory of Planned Behaviour (i.e. attitude, subjective norm, perceived behavioural control, and intentions) as well as between them and authentic leadership behaviour.

Other significant correlations found, such as the relationship between programme length and authentic leadership behaviour will be discussed in the next chapter.

On table 10 we see that correlation of ALB across time, T1 to T2 (0.61**) shows some evidence of stability but also some evidence of change (or instability) across time. This result indicates that there is change in authentic leadership behaviour before and after the intervention. Furthermore, a moderate correlation (stability) is a necessary condition for subsequently looking at change.

Lower correlations were found for attitude (0.51**), subjective norm (0.37**), perceived control (0.47**), and intentions (0.39**) across time. This implies that these variables are moderately stable, which provides further evidence for reliability of this study across time.

Positive contemplation of change also shows a slightly higher correlation across time (0.55**). And as expected, contemplation of change at time 1 correlates with authentic leadership behaviour at time 2 (0.24*).

In summary, these correlation analyses confirm the general robustness of the proposed theoretical model.

2. Authentic leadership behaviour change

This section presents the results of testing the first hypothesis:

H1.   Authentic leadership behaviour change is observed after a leadership development intervention.

This study tests whether participants following the treatment did change behaviour though the participation in a leadership programme. To be able to answer such question, ANOVA analyses were done. As expected, the overall result showed significant difference in the model: $F(1,114) = 10.52$, $p < .01$, indicating that change occurred.

Figure 10 presents the mean variation between pre-test (T1) and post-test (T2) as reported by individuals having followed one of the leadership development programmes (treatment), as well as by individuals from the control groups (control).
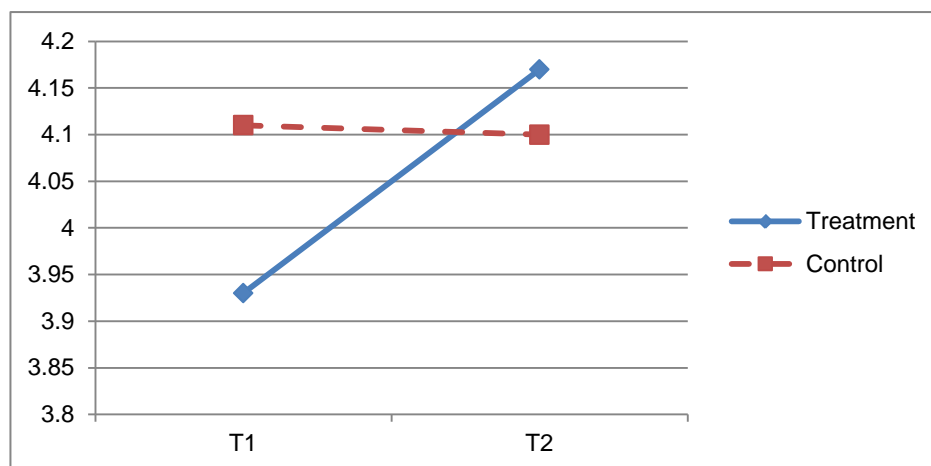

Figure 10. Change of Authentic Leadership Behaviour (treatment vs. control).

Ratings of authentic leadership behaviour for the treatment group showed a significant increase in the means from pre-test (M = 3.93) to post-test (M = 4.17): $F(1,94) = 48.66$, $p < .001$, indicating that those individuals that followed a leadership

intervention, changed their authentic leadership behaviours. The control group reported no change before and after the intervention period (M = 4.11 vs. 4.10): $F(1,20) = 0.10$, NS.

These results confirm the first hypothesis of this study (i.e. Authentic leadership behaviour change is observed after a leadership development intervention). While the control group shows no improvement over time, it could seem surprising that they rated themselves with high scores of authentic leadership. To ensure that this difference was substantive an outlier analysis was conducted. Accordingly, two outliers were taken out of the control group as their responses were more than two standard deviation above the mean. After removing these to cases, the mean difference between treatment and control group at pre-test showed not to be significant: $F(1,114) = 1.73$ (NS).

The previous analyses are based on self-responses only, so we could ask ourselves whether there is self-response bias. In order to answer this question, the present research included the responses of 17 raters to the same authentic leadership questionnaire (i.e. ALQ) than the individual participants and a similar ANOVA analysis was performed. T-test results showed that raters report an improvement on participant authentic leadership behaviour from M = 4.00 to 4.23: $F(1,16) = 6.10$, p < .05 equivalent to self-reported data. Furthermore, it could be observed that raters evaluated participants with higher scores than participants themselves on their authentic leadership behaviours, providing further evidence that there does not appear to be a self-response bias. There is evidence on health related behaviours that indicates that self-reported data is reliable and valid (smoking e.g. Dolcini, Adler, Lee, & Bauman, 2003). Previous research on intention-behaviour meta-analysis even showed that self-reports could be more critical than raters (Webb & Sheeran, 2006).

At this point, we could also wonder whether there was a general positive bias responding to the questionnaires, by programme participants and by raters. Looking at the improvement of the Positive Contemplation of Change construct we see that it does not improve as a result of the intervention $t(109) < 1$ (NS). This seems to indicate that both participants and raters were answering the questionnaires to the best of their abilities and that there was not general positive bias.

In summary, all these results make us believe that there are real changes in authentic leadership as a result of the programme interventions. This finding is already very relevant for practitioners designing or buying leadership development.

Also, all this indicates that the methodology used in this study is a robust way of measuring attitude and behaviour change because it included a pre-intervention baseline and control groups.

Indication exists that these four leadership development interventions helped people actually to change. But, do we know anything about where this behavioural change comes from? How individuals where able to change? In the next section we explore this questions analysing the mediation effect of intentions.

3. Mediation of Intention

This section presents the results of testing the second hypothesis:

H2. Intention mediates the relationship between attitude, subjective norm, perceived behavioural control and authentic leadership behaviour change.

The first thing we have to analyse is whether the participation in one of the leadership development programmes helped treatment individuals develop intentions to behave authentically.

Table 11 shows T-tests analysis for attitude, subjective norm, perceived behavioural control and intentions, done before and after the leadership programme.

Treatment group					
	Mean (T1)	Mean (T2)	t value	df.	*p*
Attitude	6.18	6.41	-3.79	94	<.001
Subjective Norm	5.82	6.03	-2.68	94	<.01
Perceived Behavioural Control	5.71	5.94	-3.41	94	<.001
Intentions	6.14	6.37	-3.75	94	<.001
Control group					
	Mean (T1)	Mean (T2)	t value	df.	*p*
Attitude	6.42	6.25	1.41	22	NS
Subjective Norm	5.62	5.81	-1.29	22	NS
Perceived Behavioural Control	5.67	5.91	-1.71	22	NS
Intentions	6.02	6.21	-1.52	22	NS

Table 11. T-test results for attitude, subjective norm, perceived behavioural control and intentions (pre- and post-test).

Results show that intentions to behave authentically, as well as the other variables of the TPB model (i.e. attitude, subjective norm and perceived behavioural control), increased from pre-test to post-test for the treatment group.

Mean scores for the treatment group increased significantly while results for the control group are not significant. Thus, T-test results indicate that the attendance at one of the four leadership development programmes included in this study was useful in developing intentions to behave authentically in the future.

Up to this point, we have already attested that the leadership interventions included in this research were successful at developing both intention and behaviour change. But it remains unclear whether behaviour change could be explained with the development of such intentions. In other words, does the development of intentions explain the observed change in behaviour or is previous behaviour, for instance, a better predictor of behaviour?

Mediation is said to occur when the causal effect of an independent variable (i.e. attitude -AT, subjective norm -SN, and perceived behavioural control- PBC) on a dependent variable (i.e. authentic leadership behaviour) is transmitted through a *mediator* (i.e. intentions). In other words, AT, SN and PBC affect authentic leadership behaviour because they affect intentions, and intentions in turn affects authentic leadership. This is why mediation is often called *indirect effect* (Preacher, Rucker, & Hayes, 2007).

Methods to analyse mediation effects became popular in psychology after Judd and Kenny (1981) and Baron and Kenny's (1986) publications.

To start evaluating the mediation effect of intentions, a linear regression analysis was done on the three elements of the Theory of Planned Behaviour (i.e. attitude, subjective norm and perceived behavioural control). Figure 11 presents the results of such analysis showing the unique variance explained by each variable.
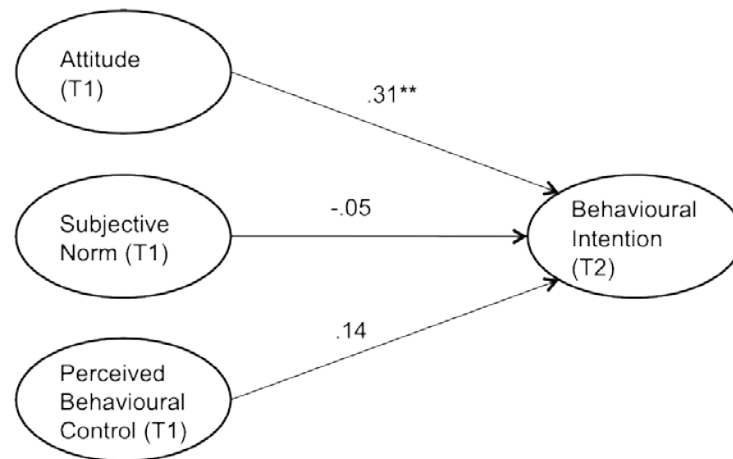
Figure 11. Linear regression to test on Intentions, controlling for programme length, gender, age, and experience. Reported values are partial standardized betas.

It is important to notice that this test was done across time. In other words, scores of attitude, subjective norm and perceived control were taken from time 1, while intention scores were taken from time 2. In this way, this study can attest the effect of the programme in developing intentions that in turn translate in behaviour change. This regression analysis was done also controlling for other variables that were in the model, i.e.: programme length, gender, age, and experience.

Figure 11 above shows that subjective norm and perceived behavioural control showed not significant results and that attitude explained most of the variance (0.31^{**}, $p < 0.01$). These results already indicate that the mediation effect will only be significant for attitude.

Using steps outlined by Baron and Kenny (1986), a regression analysis was conducted to test whether the influence of attitude, subjective norm and perceived behavioural control on authentic leadership behaviour (ALB) was mediated by intentions to behave authentically. Similar to the previous analysis, control variables of programme length, gender, age, and experience, were included. In this case, authentic leadership behaviour at T1 was included as an additional control variable to

insure that the reported effects were not caused by previous behaviour. And, to eliminate the effects of the other two variables of the TPB model, we also controlled for them (i.e. controlling for SN and PBC at T1 when testing the mediation of IN between AT and ALB, and similarly when testing for the SN-ALB and PBC-ALB relationships).

Figure 12 shows the results of this analysis: attitude significantly predicted authentic leadership behaviour when the mediating variable was not present, but was reliably reduced when the mediating variable was controlled (Sobel's z = 2.00, p < .05). In addition, the paths from attitude to intentions and from intentions to authentic leadership behaviour were significant, while the direct path from attitude to authentic leadership showed to be non-significant.
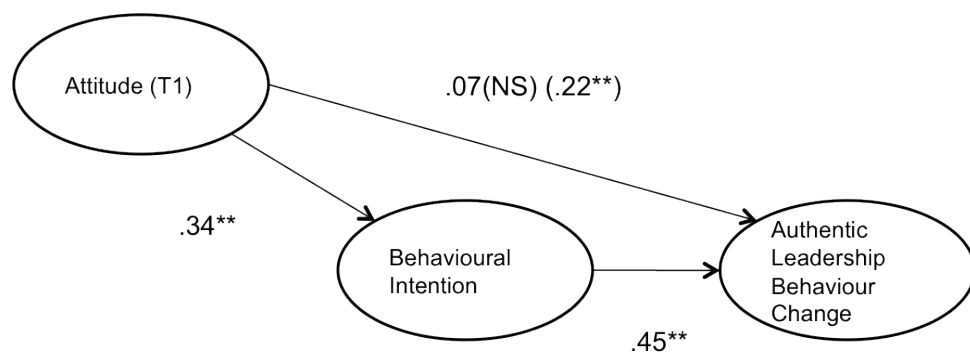
Figure 12. Path analysis showing the relations among attitude, intention, and authentic leadership behaviour. Reported values are standardized betas. The betas in parentheses are the direct effects of attitude on authentic leadership, whereas the betas not in parentheses are the relations between attitude and authentic leadership with the mediator controlled.

This mediation analysis supports the hypothesis that intention mediates the relationship between attitude and authentic leadership behaviour. Contrary to what it was hypothesised, however, this data set did not support the mediation effect with either subjective norm (SN) or perceived behavioural control (PBC). The mediation of subjective norm (SN) and perceived behavioural control (PBC), when controlling for all

other specified variables were not significant (SN: Sobel's $z = 6.03$, NS; PBC: Sobel's $z = 1.20$, NS). For this reason, further analyses of moderated mediation were only performed with attitude.

In summary, these results show partial support for the second hypothesis of this study (i.e. The relationship between attitude, subjective norm and perceived behavioural control, and authentic leadership behaviour change is mediated by behavioural intentions). This study supported the mediation effect of intentions between attitude and authentic behaviour (ALB), but not between subjective norm or perceived behavioural control and ALB. This issue will be further discussed in chapter V.

4. Moderation of Positive Contemplation of Change

This section presents the results of testing the third hypothesis:

H3. Positive contemplation of change will moderate the relationship between attitude and behavioural intentions such that when contemplation of change is high and attitudes towards authentic leadership is positive, the development of intentions is stronger.

Moderation between two variables is said to occur when the strength of the relationship between them is dependent on a third variable. This study hypothesised that individual's predisposition to develop leadership competency (i.e. positive contemplation of change) will play a moderating effect between attitude and intentions. A standard multiple regression strategy was used, with the intentions to behave authentically as the dependent variable. Attitude to behave authentically and

positive contemplation of change were entered as the main effects and their product as the interaction term. In addition, the analysis was done controlling for programme length, gender, experience and age.

Results show that positive contemplation of change explained significant amounts of the variance of intentions: t (7,94) = 2.263, p < .05.

The nature of these significant interactions is shown in Figure 13, setting attitude and positive contemplation of change at one standard deviation above and below their respective means. Results indicate that those individuals with a positive attitude to behave authentically and whom showed higher levels of change readiness, developed stronger intentions to behave authentically.
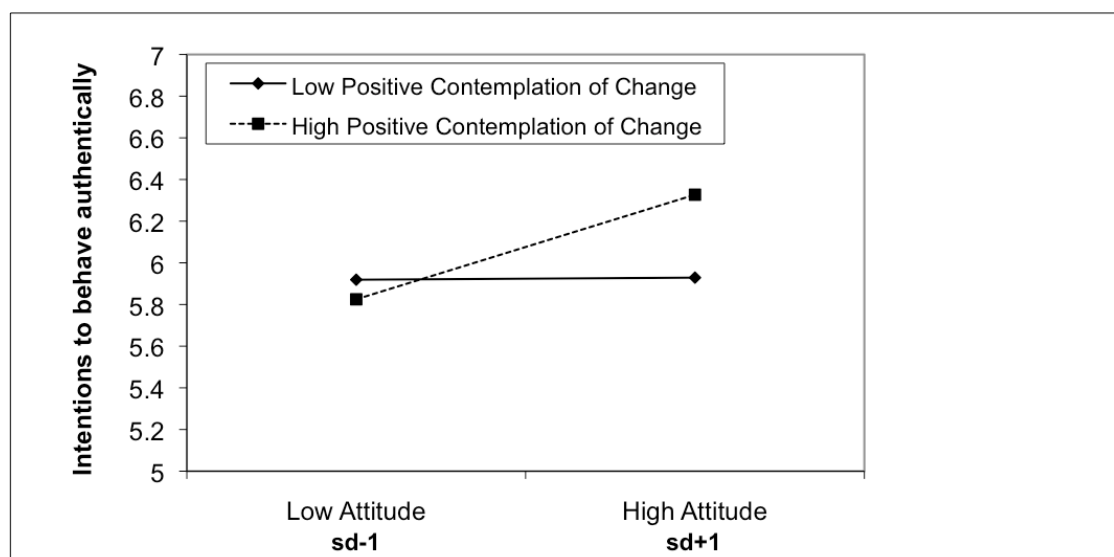
Figure 13. The links between intentions to behave authentically and attitude towards authentic leadership, as moderated by readiness to change. sd = standard deviation.

These results indicate that positive contemplation of change strengthens individuals' intentions to behave authentically. In other words, for those individuals with positive (i.e. high) attitude towards authentic leadership, a positive contemplation

of change did translate into the development of stronger intentions. On the other side, if an individual had a negative (i.e. low) attitude towards authentic leadership, a positive contemplation of change did not translate into a strong intention.

At this point it is important to note that analysing moderation and mediation effects separately on the same model could lead to important shortcomings that conceal the nature of the moderated and the mediated effects under investigation (Edwards & Lambert, 2007). The next section integrates these two effects by combining moderated regression analysis and path analysis.

5. Moderated Mediation Model

Moderation and mediation are prevalent in psychology research (James & Brett, 1984; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Shrout & Bolger, 2002) and many studies conduct various methods to combine moderation and mediation analyses. The combination of mediation and moderation results in what has been referred as moderated mediation and/or mediated moderation. The partial overlap of the meaning of these two terms led to the confusion between them. *Mediated moderation*, a term coined by Baron and Kenny (1986), refers to a moderating effect which is transmitted through a mediator variable, while a *moderated mediation*, coined by James and Brett (1984), takes place when a mediated model involves relations that require the addition of a moderator to be properly explained (Edwards & Lambert, 2007; Preacher et al., 2007).

In this study, the variables relationship obeys to both moderated mediation and mediated moderation as the moderator variable (positive contemplation of change) is hypothesised to affect the attitude-intention path, but not the intention-behaviour path

(see path analysis shown on figure 7 on Chapter II). Edwards and Lambert (2007) proposed a general path analytic framework to avoid this confusion as it analyses all relationships and effects between variables in the model and is let to the researcher the final interpretation of the results. Moderated mediation has been used in this study, as it seems to be the most popular term in the literature.

One common approach to combine moderation and mediation is the "*piecemeal approach*" (Edwards & Lambert, 2007, p. 2), which analyses moderation and mediation separately and interpreting their results jointly. This was the analysis performed thus far in this chapter, but this measurement strategy has its limitations (Edwards & Lambert, 2007). Using an analysis of variance (ANOVA) or regression analysis, does not reveal which of the paths (i.e. attitude to intentions or intentions to authentic behaviour) vary as a function contemplation of change sentiments. Also, the causal steps procedure used to test mediation (Baron & Kenny, 1986) has been criticised by having several limitations on the clarity of effects of certain relationship models (MacKinnon et al., 2002; Shrout & Bolger, 2002). To overcome such limitations, this section presents the results of the more complex analysis that was done to measure both *how* and *when* effects in the moderated mediation hypothesised model.

This final step of the analysis, therefore, consisted in re-examining the conditional indirect effects of the independent variable (i.e. attitude) on the dependant variable (i.e. intentions) at specific levels of the moderator variable (i.e. positive contemplation of change). Following Preacher et al.'s (2007) recommendation, high and low levels of contemplation of change were operationalised as one standard deviation above and below the mean score.

Using the moderated mediation analysis as proposed in Edwards and Lambert's (2007), general path analytic framework, table 12 presents the estimates, standard

errors, *z* statistics and significance value of the conditional indirect effect for attitude across high and low contemplation to change levels.

	Mediator Variable Model			
Predictor	B	SE	T	p
Constant	13.7777	4.5624	3.0198	0.00
Attitude (T1)	-1.2763	0.7021	-1.8178	0.07
Positive Contemplation of Change (T2)	-1.9887	0.9993	-1.9902	0.05
Interaction	0.3415	0.161	2.1206	0.04

	Dependent Variable Model			
Predictor	B	SE	T	p
Constant	-1.7537	2.5637	-0.684	0.50
Intention (T2)	0.3021	0.0576	5.2431	0.00
Attitude (T1)	0.3586	0.3823	0.9382	0.35

	Conditional indirect effect at PCC = ± 1 SD			
Positive Contemplation of Change (PCC)	Boot indirect effect	Boot SE	Boot z	Boot p
-1 SD (3.9075)	0.0175	0.0321	0.5463	0.58
Mean (4.4000)	0.0683	0.0275	2.4869	0.01
+1 SD (4.8925)	0.1191	0.0431	2.7644	0.01

Table 12. Summary of the moderated mediation analysis using a general path analytic framework

This analysis was done with attitude[1] and controlling for age, gender, years of experience, programme length and previous behaviour.

As presented in table 12, results show that for the moderating variable of positive contemplation of change, the conditional indirect effects of attitude were stronger and significant when the leader attributed high levels of positive contemplation of change but were weaker and non-significant when the leader is not so positively contemplating change.

These, confirm the third hypothesis of this study, which postulated the mediating effect of positive contemplation of change between the attitude-intention relationship.

---

[1] Analysis was done with attitude as showed to be the most relevant variable in the piecemeal analysis. The analysis was done, however, with the full TPB model (AT, SN, PBC) and the results were essentially unchanged.

6. Summary of results

The current chapter has analysed and presented results from the quasi-experimental study that tested whether four selected training interventions in the marketplace were useful at developing authentic leadership. It was also analysed the predicting role of intentions in actual behaviour change and the role of positive contemplation of change in helping develop such intentions towards authentic leadership.

As expected, the results demonstrated that leaders who attended one of the four interventions developed higher levels of authentic leadership as rated by themselves and others in their working environment (e.g. boss and subordinates). Analyses were done controlling for baseline scores of authentic leadership behaviour.

The results also indicated that intentions were developed through the interventions and that the development of such intentions translated into changes in authentic behaviour. Furthermore, it was found that intentions mediated the relationship between attitude and authentic leadership behaviour.

In addition, when contemplation of change was high and the attitude towards authentic leadership was positive, the development of intentions was stronger.

Next, chapter V interprets these results and discusses the implications of the findings.

V. DISCUSSION

This chapter discusses the findings and the implications of this research. Section 1 presents a summary of the study. Section 2 then, interprets and discusses the findings of analysis. Section 3 outlines the implications to the theory of this research and in section 4 practical implications are discussed in detail. Section 5 discusses limitations of the research and Section 6 proposes some recommendations for future research. Finally, section 7 provides a conclusion to this thesis.

1. Summary of study

In chapter II, three hypotheses were put forward around the degree in which managers following one of the selected leadership interventions developed authentic leadership and why:

H1. Authentic leadership behaviour change is observed after a leadership development intervention.

H2. Intention mediates the relationship of attitude, subjective norm and perceived behavioural control towards authentic leadership behaviour change.

H3. Positive contemplation of change will moderate the relationship between attitude and intentions to behave authentically.

In order to test these hypotheses, a robust longitudinal quasi-experimental study was designed, as proposed in chapter III. This study is concerned about evaluating individual change as a result of participating in a market leadership development programme. Leaders participating in one of four leadership interventions were surveyed in this study one month before and one month after the programme. Two of the leadership interventions used were tailor-made corporate programmes (i.e. EDF and Dell) developed under their talent management initiatives; the other two were open enrolment programmes offered in two different business schools (i.e. EADA and CEDEP). The programmes were different one from another, yet all of them had elements of authentic leadership development in them. The four programmes were conducted in different European locations and included participants from 28 different nationalities in total. Three complementary questionnaires were distributed: ALQ measuring authentic leadership and its four components (i.e. self-awareness, transparency, ethical/moral, and balanced processing); TPBQ measuring intentions to behave authentically (including attitude towards behaviour, subjective norm and perceived behavioural control); and a third questionnaire measuring participants' positive contemplation of behaviour change. These three measures were distributed to 110 participants in one of the four interventions whom responded before and after and it also included responses from 17 raters. The same three measures were also sent to a control group of 23 people who equally responded twice, with the same time span as the treatment group.

Chapter IV then, analysed all data in detail and presented the results, finding support for most of the hypothesised relationships.

This final chapter discusses such findings, focusing attention on their implication to theory and practice, outlining the limitations of this study, making suggestions for future research and finishing with a conclusion.

2. Interpretation of findings

This section of the discussion chapter interprets the main findings of the analyses presented in chapter IV. To follow a logical order, such discussion have been structured around the three main hypotheses of this research:

H1. Authentic leadership behaviour change is observed after a leadership development intervention.

In line with such hypothesis, the first significant finding of this study is that leadership development programmes increased participants' authentic leadership behaviour. The analysis of this study presented in chapter IV showed a significant increase in authentic leadership behaviour for the treatment group ($F(1,114) = 48.66$, $p < .001$), while the control group did not show significant results ($F(1,20) = 0.10$, NS). This means that leaders who attended one of the four training interventions (corporate sponsored or open enrolment in a business school) reported to have modified their behaviour towards higher levels of authenticity. This change seems to be observed by others as well since participants' raters attested that change actually occurred ($F(1,16) = 6.10$, $p < .05$). These results have theoretical implications as they provide further experimental evidence for the validity of authentic leadership development theory (ALD). They also have important implications to practitioners as they indicate that leadership development programmes in the market today that have not been designed with ALD theory in mind are successful at developing higher levels of authenticity in people). These results will be further discussed in the next two sections.

It is interesting to notice that the correlation matrix presented in table 9 showed a significant negative correlation between authentic leadership behaviour (ALB) and programme length (T1: -0.34**; T2 -0.36**). This seems to indicate that longer programmes had a smaller effect on individuals. The idea that shorter programmes (e.g. 3 days) were more impactful at developing authentic leadership in individuals than longer programmes (e.g. 16 contact days distributed along 10 months) is counter-intuitive. In fact, some authors raised concerns over the long term effects and durability of change from short leadership interventions (Avolio et al., 2009b). Riggio (2009) suggests that longer programmes have more positive impact than programmes that last a day or two. Avolio and Chan (2008) emphasise that "*leadership is a continuous process of becoming, which occurs potentially across the entire life-span*". Previous literature indicates that changing personal habits and behaviours takes considerable time and effort (Prochaska et al., 2006). A permanent change of behaviour indeed requires a change in other important aspects of the self such as the level of awareness, the level of emotion, the level of self-image (Prochaska et al., 2006), and those changes take time. So how could we explain these results?

There are a number of reasons that could explain why changes in self-perceptions of authentic leadership at Dell, being the shortest interventions, are the highest of all programmes.

A first possible explanation is that behaviour changes are not permanent and decrease with time. Webb and Sheeran (2006) found out that interventions had a greater impact on behaviour when the time intervals between the development of intention and behaviour measures was short (i.e. less than 11.5 weeks) as compared with long (d = 0.46 vs. d = 0.23). As time span between pre- and post- measures of intentions and behaviour were significantly different for the measured programmes (e.g. 2 months for Dell and 12 months for EADA – refer to table 2 in chapter III), it could be that longer programmes showed a lower effect on behaviour change

because the development of intentions occurred during earlier parts of the long programme. For, instance, if participants in EADA's Executive MBA increase their intentions to behave authentically three months into the programme, this would represent a time span of 10 months (for EADA) between the development of intentions and the time behaviour changed was measured. This is significantly more than three months (11.5 weeks) which Webb et al. (2006) report in their study.

Another explanation of these results could be the existence of a positive bias in corporate-participants' self-ratings. There could be a higher perceived pressure for politically correct responses between corporate sponsored programmes (i.e. mainly Dell), and an EMBA or a General Management programme (i.e. EADA and CEDEP), which takes place outside the premises of participant's company with a clearly more independent programme provider. Since the large majority of corporate programmes in this study were Dell's participants (i.e. 68 vs. only 4 at EDF), the results of corporate programmes mainly reflect Dell's self-responses. Hence, shorter programmes were also corporate programmes were the bias to show progress through the programme could be higher.

This explanation is supported by the fact that rater responses do not show significant correlations (either at T1 or T2) between programme length and their view of participants' authentic leadership behaviour. In other words, while raters agree that there is ALB improvement between pre- and post-test, they do not agree that shorter programmes have a higher impact.

In addition, post hoc analyses showed that participants in corporate programmes (i.e. Dell + EDF) self-scored themselves higher in average than participants attending a business school programme. T-test analyses with corporate participants had their mean scores increase from M = 4.00 at T1 to 4.24 at T2 ($p <$ .001) while for business school participants their mean increased in an equivalent form but with lower overall ratings (T1: 3.71 to T2: 3.97, $p <$ .05). These results

contrast with rater responses, which are homogeneous across corporate (T1: 4.00 to T2: 4.22) and business schools (T1: 3.95 to T2: 4.23). Such analyses, once more, indicate that corporate participants (mainly Dell and therefore, equivalent to shorter programmes) seem to have rated themselves higher than other programme participants.

H2. Intention mediates the relationship of attitude, subjective norm and perceived behavioural control towards authentic leadership behaviour change.

The results presented in the previous chapter showed that the participation in one of the four leadership development programmes helped participants to develop intentions to behave authentically (t (94) = -3.75, p < .001).

All published meta-analytic analysis in the literature report results using the unbiased effect size estimator d (Hedges & Olkin, 1985). Using such convention, we can see that small to medium changes in intentions ($d = 0.42$), engenders medium to large change in authentic leadership behaviour ($d = 0.64$). These results are higher than the averages found by Webb and Sheeran (2006) presented in the literature review (i.e. medium to large effect sizes in intentions implied small to medium changes in behaviour). One possible explanation for these higher effects could be that the leadership development interventions included in this study (i.e. 3 to 16 full contact days) were more intensive than the majority of health promotion interventions included in the previous meta-analysis.

Table 11 in the analyses chapter shows that the three predecessors of intentions, according to TPB theory (i.e. attitude, subjective norm and perceived

behavioural control), also increased from pre-test to post-test for the treatment group, while results for the control group were not significant. These results indicate that the attendance at one of the four leadership development programmes included in this study was useful in developing a more positive attitude towards authentic leadership and a stronger perception of control over such behaviours. To a lesser extent, individuals also reported higher subjective norm scores at post-test indicating that the programme increased the influence of significant other's opinions about behaviours of authenticity. This could be explained because the norm for participants could be their co-workers who are also attending the same programme and their interaction together could raise one another's perception of authentic behaviours: "My norm-group changes and so I also change".

PBC also increases from pre-test to post-test indicating that participants felt more in control of authentic leadership behaviours after the attendance to the programme.

As depicted from figure 11, however, mediation analysis indicates that most of the variance in intentions within the TPB model was explained by attitude (.31**), and that subjective norm (-.05, NS) and perceived behavioural control (.14, NS) did not appear to be good predictors of intentions. So this study provides evidence to say that people with a more positive attitude towards authentic leadership behaviours changed the most as a result of the leadership development intervention. On the contrary, neither subjective norm nor PBC were significant predictors of intention, after controlling for attitude towards authentic leadership behaviour.

In sum, this study found that attitude is the unique predictor of intentions and therefore the mediation analysis only partially supports the second hypothesis of this study: individuals whom upfront had a more positive attitude towards authentic leadership were the ones that developed stronger intentions to change and therefore

changed the most. The results of the study, however, do not support the same effect with the other two constructs of the theory of planned behaviour (i.e. subjective norm and perceived behavioural control).

H3. Positive contemplation of change will moderate the relationship between attitude and intentions to behave authentically.

The results of the study show that positive contemplation of change increases individuals' intentions to behave authentically. Thus, for those individuals with positive attitude towards authentic leadership, a positive contemplation of change did translate into the development of stronger intentions. On the other hand, individuals with a negative attitude towards authentic leadership did not develop strong intentions, despite positively contemplating behaviour change. In other words, Individuals attending a leadership development programme with a positive attitude towards authentic leadership and who were more ready to change, developed higher levels of intentions to change and in turn also developed higher levels of authentic leadership behaviour. This has important connotations for the design of successful leadership programmes for practitioners and will be discussed further in next sections of this chapter.

It is important to notice here that the mean score of positive contemplation of change before the programme (T1) was very high: M = 4.40 on a 5-point likert scale. This means that all programme participants felt fairly motivated to let themselves influence by the leadership development programme, or that a social desirable response skewed responses up. Interestingly, the moderation effect of positive contemplation of change was not significant for responses at one standard deviation below the mean (i.e. 3.9). A score of almost 4 was representing the "I agree" choice

within the five options of the questionnaire and therefore for the moderation of positive contemplation to be significant, higher perception of change readiness were needed. The high mean found in positive contemplation of change is expected to some extend as all surveyed individuals had either been selected by a corporation for their potential to grow or individuals themselves have made the decision to join an open enrolment programme to advance in their career, both of which probably influence leader motivation to develop and change readiness attitude.

3. Theoretical implications

The findings of the current research have several theoretical implications that extend existing knowledge and establish an agenda for future research in leadership development.

The first and most important contribution to theory of the present research resides in the integration of a theory of behaviour change (i.e. TPB) with a leadership development theory (i.e. ALD) responding to an existing gap in the literature in testing integration and complementarity of existing theories vs. developing new models (Avolio, 2007; Derue et al., 2011). TPB posits that intention is an antecedent of actual behaviour, in line with previous research, which indicates that behaviour change will only occur through the development of strong intentions to change. In this way, this study provides a theoretical conceptualisation of intentions as antecedent of authentic leadership development by the first time (to the best of my knowledge), and specifically intentions as an antecedent of self-regulation behaviours of leadership according to ALD theory (i.e. transparency, ethical/moral and balanced processing). This was theorised and tested using a robust quasi-experimental design. Data results

are partially consistent with Ajzen's theory of planned behaviour (TPB) and indicate that intentions effectively predict developmental behaviours such as authenticity. TPB, which originates in health psychology, shows promise for being also used in adult learning interventions and seems to be an effective process of change for leadership behaviours.

Attitude towards authentic leadership behaviour, however, showed to be the best prediction of intentions (i.e. had a unique effect) and therefore this study supports the idea that attitude is the most important component of the TPB model. Subjective norm and perceived behavioural control did not show significant results in predicting intentions which in turn would be translated in leadership development. This result is not surprising as it is in line with similar findings from previous research. Armitage and Conner's (2001) previously discussed meta-analysis, reported attitude as the stronger predictor of intentions, accounting for 24% of the variance on intention ($R2 = .24$), compared to subjective norm ($R2 = .12$) and PBC ($R2 = .18$). Some authors (e.g. Sparks, Shepherd, Wieringa, & Zimmermans, 1995) have even omitted subjective norm from their studies arguing that is an inadequate component of TPB and that rarely predicts intention. While this strong view is not generalised among TPB researchers, Armitage and Conner (2001) also report that the subjective norm-intention correlation is significantly weaker than the other relationships with intentions. In line with these authors, the results of this study perhaps indicate that subjective norm is the component of TPB that most require further study.

In summary, this study integrates, by the first time, TPB with ALD theory and shows promise for this theories being used together in a more general sense. Future research, discussed in section six of this chapter, will need to confirm this result.

Second, this research provides further empirical evidence to support the theory of authentic leadership development, which is still in its early stages of development (Ardichvili & Manderscheid, 2008).

Post hoc analyses showed strong correlations between ALD constructs (see appendix E) providing some evidence that self-awareness and self-regulation behaviours (i.e. transparency, ethical/moral, and balanced processing) are good predictors of authentic leadership behaviour. This is more significant as the data of this study comes from European individuals that span across 28 different cultures and several organisations. The majority of previous research on leadership has focused on a Western, U.S.-centric, post-industrial approach (Bass, 1990) and requires more cross-cultural examinations (House, Javidan, Hanges, & Dorfman, 2002). Approximately two thirds of the studies included in the meta-analytic review of leadership impact conducted by Avolio et al. took place in the U.S (Avolio et al., 2009b). Specifically, ALD theory is still a new theory (Avolio & Chan, 2008) with most of the studies centred in the U.S. and benefits from empirical studies such as this one, which provide further evidence of its validity across cultures. We live in an ever-globalised world and therefore the ability to understand the effects of main theories for a global populations becomes every day more important.

As mentioned earlier, results indicate that the four selected programmes in this study (EDF and Dell's corporate education and EADA and CEDEP open enrolment programmes) did help participants developed authentic leadership. It is important to emphasise at this point that none of these four programmes was specially conceived to develop authentic leadership, and thus, this shows that the authentic leadership construct, developed by Gardner, Avolio and colleagues (2005b) is a fundamental concept that includes some of the basics of leadership. Other researchers have also viewed authentic leadership as a generic leadership process, which functions as a root construct for other positive leadership processes (Spitzmuller & Ilies, 2010).

Hence, authenticity in leaders could be developed by any leadership development effort, even by some generic management training and professional development courses that include self-awareness and self-regulation components, validating the assumption that this study made and which was discussed in the literature review section.

Thus, we could attest that the competencies proposed by ALD theory such as self-awareness, and self-regulation behaviours, shared among most of the newer theories of leadership development (Avolio & Gardner, 2005), are found to be generic enough to represent good leadership competencies.

Third, this study responds to previous research calling for more longitudinal studies (Gardner et al., 2010; Lowe & Gardner, 2000), and specifically studies which recognises the individual differences of leaders when tracking their development (e.g. Avolio & Chan, 2008). This research, not only had a longitudinal design, but also incorporated a measure of positive contemplation of change before interventions and found out that this construct helps us understand the development of stronger intentions to change within the TPB model. Precisely, as it was reported in the previous chapter, positive contemplation of change (PCC) seems to moderate the attitude-intention relationship. This means that individuals who before a leadership development programme had a positive attitude about authentic leadership and whom also have a predisposition for change (i.e. PCC), will develop stronger intentions to behave authentically.

Fourth, this research addressed a few methodological gaps raised by previous research: Only 19 out of 200 experimental and quasi-experimental studies, conducted between 1980 and 2008, were performed in for-profit organisations (versus non-for-profit or a military setting) (Avolio et al., 2009b). This study incorporates participants

from two large corporations (EDF and Dell), which provides research additional data to contract results in the corporate world. The implications to practice of this study's findings are further developed in next section.

Reichard and Avolio (2005) posited that not all research that claimed to investigate leadership development manipulated leadership itself. Avolio and colleagues (2009b) reported that only 37 out of 138 studies were considered developmental studies that aimed to enhance leaders' knowledge, skills, ability or motivation. The interventions conducted within this research were specifically designed to develop leadership.

It was also noted (Avolio et al., 2009b) that the majority of experimental or quasi-experimental research studying leadership development in the past 100 years were conducted in laboratory settings rather than in field settings. This research also addresses such gap with a quasi-experimental field design that surveyed leaders attending a leadership training.

Measuring behavioural change is not an easy task (Collins & Sayer, 2001) and requires accurate measures. While the Authentic Leadership Questionnaire (ALQ) used in this study has already been validated (Avolio et al., 2009a), it is a recently developed scale and requires further testing, especially in intercultural contexts outside the United States. In this way the present research provides further support for ALQ and its development.

Focussing on the development of the leader, this study also overcomes the limitations of other leadership development studies where leaders were developed with interventions that lasted less than one day.

Lastly, to make this quasi-experimental study more robust (De Vaus, 2001), it included the use of a control group where a group of participants did not receive the any leadership development intervention.

4. Practical implications

Because this DBA research originates in concerns from practice, this section is of especial relevance. The motivation to start the present study comes from the personal observation and experience that changing leadership behaviours is a difficult task and wondering what are the most effective processes for consolidating desired changes.

In line with this, the first practical contribution of this research resides in the evidence that leadership programmes are useful at changing personal behaviours. This study attested that six very different development programmes helped develop authentic leadership behaviours in participants. Previous research wondered whether or not training and development of authentic leaders was effective (Cooper, 2005; May et al., 2003). The results of this study suggest that we can answer this question affirmatively and represent a good encouragement for all of us trying to improve our leadership skills, for practitioners trying to improve programme effectiveness, and for HR professionals spending large amounts in developmental programmes. The generalisability of this conclusion is further discussed in the potential limitations section. Avolio and colleagues (2010) in their work to estimate the return on leadership development investment, suggest that even during downturn economies, such as the one that has been affecting the majority of western countries in the past few years, it may be a wise decision to invest in leadership development. Even the recent recession only temporarily reduced investment in leadership development from organisations (Hayward & Voller, 2010).

In an attempt to bring some light into which type of learning techniques are more or less effective, and with limited access to specific programme information, the four

interventions included in this research were compared. They had substantially different programme designs but at the same time shared a few important things in common: they all had at least two days of continuous residential experience were participants worked individually and in groups, they had some type of experiential team dynamics and/or roles plays, and they provided feedback to participants in their process of development. Day (2001) reviewed some of the more extensively used practices for leadership development in organisations: 360-degree feedback, executive coaching, mentoring, networking, job assignments and action learning. Only the first two (360-degree feedback and executive coaching) are considered formal training targeting behavioural change, while the other techniques (mentoring, networking, job assignments and action learning) are considered on-the-job activities targeted to a more informal growth of leaders in the organisation. Interestingly, very few if any, of these techniques were used per se in the programmes were this study obtained trainee's responses: While feedback was included, sometimes through a questionnaire, it was not a 360º feedback as it did not include the view of other raters; and only five hours of voluntary coaching was offered to EADA participants. As for on-the-job activities, no information was provided to the researchers as to whether they were combined with the off-the-job training interventions. It is known however that Dell's programme encouraged trainees' managers to meet with their employees within a month after the conclusion of the programme to follow up with them on its concrete applicability to the job. Networking could be a default benefit of any training programme but was not specified in any of the programme designs. No additional information was available about other teaching techniques used in any of the programmes.

Conclusions about the effectiveness of certain programme designs over others are of course beyond the scope of this study. For this to happen, research will have to compare a larger number of programmes and typify their use of techniques.

Unfortunately, a lot more of experimental research is needed to advance the new science of leadership development before we could attest which type of programmatic intervention is most effective at changing individuals and developing leadership. As Day said: "*It is probably safe to conclude that any of these practices could be effective for leadership development, as that any could be ineffective*" (2001, p. 606). Maybe this is the reason why practitioners tend to approach leadership development with 'trial and error' techniques (Zaccaro & Horn, 2003) more than relying on the results of scientific research. The challenge increases as practitioners continue to develop new and alternative approaches to leadership learning and development to which the scientific world has to catch up.

The second important implication for practitioners is that leadership development programmes could now take into consideration the development of strong intentions to change when designing its curricula. Indication was found that leadership development programmes were more successful when they also helped individuals develop stronger intentions to behave authentically in the future. These intentions were also significantly explained by the development of a positive attitude towards the behaviour. Leadership development programmes should take this into account and include in their programme design components that specifically help individuals develop those components. Attitude, subjective norm, and perceived behavioural control are formed based on internal beliefs about these three factors behavioural beliefs, normative beliefs, and control beliefs (Ajzen, 1991; Ajzen & Fishbein, 1980). Attitude, specifically, work on the principle of Fishbein and Ajzen's (1975) Expectancy-value Model, which posits that the subjective value of a given outcome affects the attitude in direct proportion to the strength of the belief.

If a leadership development programme is set to modify behaviour it will have to be able to affect individual beliefs, specially behavioural beliefs which this study found

to be the ones that explained most of the variance in the formation of intentions to behave authentically. Therefore, if a leadership development intervention is set to affect long lasting change in participants, it should positively affect leaders' attitude towards desired behaviours (e.g. of authentic leadership) and the corresponding development of intentions. The modification of beliefs that could engender an attitudinal change is a complex cognitive process that involves the modification of deep structures in our brain holding our beliefs systems and concepts of self-identity (Bandura, 1997). As an example, leadership development programmes could strengthen the development of intentions by emphasising the development of concrete goals (Bandura, 1979; Locke & Latham, 2002; Webb & Sheeran, 2006), which detail the *when and where* will the new behaviour be actually implemented.

Proponents of leadership development through experience (e.g. Hirst et al., 2004), criticise "formal" leadership development programmes for their inability to provide crucible experiences (Bennis & Thomas, 2008) , hardship events (Pulley & Gurvis, 2004), or any other type of intense and emotionally rich individual experiences that affect deep belief systems in participant leaders. Previous research and best practices in leadership development have supported this concept through the incorporation of "challenges" in the programme design as an important developmental tool to make leaders' question the status quo of their beliefs. Many organisations have already realised that lecture-based, traditional-classroom type of training, is not very effective at preparing leaders for the challenges they will face in the future (Day, 2001; Dotlich & Noel, 1998). In other words, attempting to modify behaviour permanently with a mere cognitive discourse would not be realistic.

Prochaska, Norcross and Diclemente (2006) in their book: "Changing for Good" review the processes and indicate that *emotional arousal*, also known as *dramatic release* or *catharsis*, is a useful technique extensively used in health psychology, to bring awareness to personal barriers against change. Emotional arousal, parallels

consciousness-raising techniques but works at a deeper and emotional level. In the same way, leadership development interventions aiming at behavioural change could provide individual and group experiences, which would arouse their emotions and help individuals question and modify their attitude and develop stronger intentions to change.

The analysis of how (i.e. through which processes and techniques) leadership programmes are able to modify intentions and attitude constitutes a fertile area for future research. As an example, we could question whether the incorporation of experiential team dynamics and action learning (with the consequent feedback) are more effective at creating insights that could be used to modify deeper-meaning structures in participants' brain structures and constitute a true leadership accelerator.

Third, this study supports the idea that leadership interventions need to be adapted to the individual; specifically we have seen that learning motivation and positive contemplation of change (PCC) are important factors in the success of development programmes. Day (2001) states that the effectiveness of leadership development interventions and techniques such as coaching, aiming to develop the human capital in organisations, are enhanced to the degree that individuals are willing to change. It is important, therefore, to adapt training to trainees' motivations and engage them in pre-training interventions designed to improve their motivation and willingness to change (Goldstein & Ford, 2002; Harris & Cole, 2007). Practitioners should note that leadership development programmes not only could be used to change individuals, but to initiate them in a longer process of change, by increasing their intentions to change. To that effect, it would be important to assess up-front, which individuals already have strong intentions to behave authentically (or the desired form of leadership that an organisation so desires), and whose need help in developing stronger intentions to change.

Previous research supports this idea: Prochaska said that "efficient self-change depends on doing the right things (processes) at the right time (stages)" (Prochaska et al., 1992, p. 1112). Avolio et al. (2010) highlighted the importance of selection for development and report that when top performers (i.e. motivated employees) are selected for leadership development interventions, the subsequent performance and financial effectiveness for the organisation is substantially increased. Furthermore these and other authors specifically mention that change readiness (i.e. PCC) is critical to the development process in terms of the expected positive effects of interventions on individuals and how well the training is applied back in the organisation (Avolio, 2003; Maurer, 2002). Aguinis and Kraiger (2009) in their review of training and development literature from the year 2000 to 2009 also highlighted that two ways to maximize the benefits of training is to conduct a needs assessment on individuals before the training and to make sure trainees are ready and motivated for training. Smither, London and Reily (2005) in a meta-analysis of 24 longitudinal studies using multisource feedback provide evidence to support the idea that performance improvement due to this specific technique can not be expected across the board. They suggest that instead of asking "*Does multisource feedback work?*", we should be asking "*Under what conditions and for whom is multisource feedback likely to be beneficial?*" (p. 60).

In line with all these conclusions, this research suggests that to improve training effectiveness and ROI, individuals attending leadership development programmes should be classified into those with a positive contemplation of change (PCC) and those with lesser willingness to change or unawareness that they need to change. Interventions then should be designed to be most effective for their targeted group and avoid giving coffee for all. Leskiw and Singh (2007) in an extensive review of the literature on best practices in organisations reveal audience selection as a key area of importance to maximise the effects of the development effort. For instance, a

programme customised for high potential employees (typically, with higher PCC scores) to plan for succession, could be significantly different than a programme for the rest of employees to disperse leadership throughout the organisation (Leskiw & Singh, 2007).

Even if individuals cannot be separated in two groups for political reasons or an inability to do so, the training (and the trainer) would highly benefit by knowing which individuals have a positive contemplation of change, or at least understanding what is the overall sentiment over change in the group.

There is, therefore, enough evidence to suggest that leadership development must be suited to the audience, especially with regards to their change sentiments. The next step, however, is to design a programme that best suits the specific targeted audience. In this way, this study proposes that all employee developmental efforts that aim to change behaviours should start with a Pre-Leadership Development Questionnaire (PLDQ) to attest individuals' sentiments towards change (i.e. leadership development) in order to classify participants and to offer them tailored interventions that are more closely adapted to their developmental needs.

The four programmes included in this study showed to be effective at changing individuals towards more authentic leadership behaviours, especially for people with positive contemplation to change scores. For the rest of the participants, the training had a lesser effect and it is logical to assume that there would be individuals for whom the training was a waste of time. Still, *"most leadership training programmes are designed to increase generic skills and behaviours" (Yukl, 2006, p. 387).* To increase the effectiveness of leadership interventions, they should be more specific to the individual needs. Taking this concept to the extreme, leadership development could be stage-matched. That means designing completely different leadership

development interventions according to the change-stage in which individuals are prior to the programme. For instance, a programme for leaders in the pre-contemplation stage (e.g. needing awareness raising) could be significantly different than a programme for leaders in the action or maintenance stage (e.g. needing help nurturing her active listening skills, or consolidating a global view approach). Harris and Cole (2007) in their study, which incorporates the stages of change concept to leadership development, suggest that interventions should be designed to participants' readiness-for-change. Other authors have concluded this same idea that leadership development should not follow a "one size fits all" approach (Collins & Holton, 2004; Derue et al., 2011; Yukl, 2006) and suggest that well-timed interventions are more effective (McCall Jr, 2004). Furthermore, health psychology research has shown that stage-matched interventions can have a far greater impact than other programmes that encourage action as the main element for achieving behavioural change, regardless of the stage in which participants are in the change process (Levesque, Prochaska, & Prochaska, 1999; Prochaska et al., 2006).

As an example, organisations investing large sums in leadership development would maximise their investment if they followed through with coaching or other types of individualised support to help managers consolidate their learnings into permanent behavioural changes. DiClemente and Prochaska (1982) in their stage of change model (Prochaska et al., 2006) recognize that most people start following the stages in sequence, usually until, at some point, their behaviour slips, and they return to contemplation or sometimes even pre-contemplation phase (see figure 5). They have to renew their efforts in a new attempt to change permanently, typically because they have not received the necessary support to consolidate their change. Also, Webb and Sheeran's (2006) meta-analysis looking at the effectiveness of change programmes through the development of intentions reported that interventions that incorporated

incentives for behaving and social encouragement or support, tended to have a greater effect on behaviour than other type of change methods.

Managerial training practitioners also defended the importance of supporting participants attending leadership development efforts. Ken Blanchard, for instance, suggested that selling training without follow-up coaching should be unethical (2008). Many other practitioners also acknowledged the importance of a supporting environment to consolidate behaviour changes initiated in leadership interventions (e.g. Day, 2001; Eckert et al., 2013; Likierman, 2009; Martineau & Johnson, 2001; McCauley, Moxley, & VanVelsor, 1998).

In an attempt to advance this concept and based on an earlier publication of the author of this study (see Bernal, 2009) a preliminary mapping of change stages, individual needs and possible useful techniques is presented Table 13 below. It is important to mention that this proposal goes beyond the direct practical implications of this study. On the contrary, it is based on the author's personal experience in designing leadership development programmes, on articles and published reviews of common leadership development techniques (e.g. Day, 2001), and on a process of inference made by adapting health psychology knowledge (e.g. Harris & Cole, 2007; Prochaska et al., 2001; Prochaska et al., 2006) to the leadership development practice. Future research is needed before we could attest the validity of this concept.

Change stage-based leadership development

Developmental phase	Awareness	Empowerment	Commitment	Implementation	Regulation
Change-stage	Pre-contemplation	Contemplation	Preparation	Action	Maintenance
Stage description and symptoms	-Not aware -Can't see the problem -No intention to change	-Acknowledges the problem -Thinking about change -No specific plan	-Focuses on solution (vs. problem) -Focuses on future (vs. past)	-Observable behavioural changes	- Old behaviour still is a temptation (possible relapse)
Specific individual needs	-Awareness raising -Problem identification	-Self-empowerment (vs. victimisation) -Evaluation of short vs. long term benefits & consequences	-Ability to act -Elaboration of concrete plans (strategy & tactics)	-Small behavioural changes -Positive reinforcement	-Environmental control -Helping relationships
Sample of useful techniques	-Games and role-plays with feedback -360° evaluations	-Reflection (learning journal) -Connecting with inner-power -Group debriefing and peer support	-SMART goal setting -Public commitment -Mentor/coach/ peer support	-Trial & error -Practice & skill development -Reward (small win celebration) -Coaching	-Mindfulness (being and operating in states of consciousness) -Coaching

Table 13. Sample proposal for a change stage-based leadership development. Own development.

More research is needed to understand which of these techniques, some of which proved to be effective at changing health-related behaviours, would boost leadership development effectiveness in producing longer-term behaviour changes.

5. Potential Limitations

Notwithstanding the previously mentioned contributions, there are several potential limitations to this research that should be kept in mind when interpreting its findings.

First of all there is a potential limitation of low reliability of scales for the Theory of Planned Behaviour Questionnaire (TPBQ). As depicted in table 8 Cronbach's alpha reliability scores at T1 and T2 were low to medium, especially PBC reliability at time 1 (0.40). A low reliability means there is more error, which makes it more difficult to find significant results. Despite this, the results found in this study showed significant effects, which could be further strengthened with higher reliabilities. Future research should validate this questionnaire with additional data sets.

Another potential limitation resides in the years of experience difference found between treatment and control groups. The control group having three years of experience more than the treatment group. To overcome such limitation, all the analyses of this study were controlled for years of experience as well as the other three demographic variables included in the questionnaire: gender, age and nationality. As presented in the previous chapter, demographics did not reduce the significance of the effects, indicating that such difference in experience was not

significant. Indeed, there were no significant correlations between years of experience and any of the variables of the model (see table 9).

This study was concerned about evaluating individual change (i.e. authentic behaviour) as a result of participating in a market leadership development programme but the four programmes surveyed are not representative of all the available programmes in the market. As discussed earlier, the programmes included in the study could have commonalities that make them special with respect to other programmes. Notably, they all lasted more than 3 full days, contrasting with a lot of programmes lasting less than a day (Reichard & Avolio, 2005). There is, therefore, a limitation in generalising the results found to a wider population than the four organisations and leadership development programmes included in this study. Also, authentic leadership could mean different things in different national cultures (Cooper, 2005).

While it is clear that the four organisations cannot represent the whole population, they are significantly different from one another to imagine that these results could be extrapolated to other setting. Two corporations: Dell with an Anglo-Saxon culture and individual participants coming from many countries throughout Europe contrasts with EDF, a French culture with over 50% of participants from this country and the rest also coming from other geographies such as Germany, UK and Italy. And two business schools, EADA based in Barcelona with an EMBA programme that attacks people from micro, small, medium, and large organisations across several sectors in the region, and CEDEP, based in Paris and with a company-consortium General Management programme that attracts managers from top French corporations such as Aviva, L'Oréal, Renault and Valeo and other international firms. All of them represented a wide sample of the population. To be able to generalise

these findings for other training interventions in the marketplace today, further research is needed.

While this study measured the individual leader as the unit of study, as opposed to the leadership programme and its design, it is tempting to infer consequences that would be useful to future programme designers. The evaluation of leadership development faces two main challenges: to measure changes in leadership or its outcomes, and to show evidence of the relationship between those observed changes and the leadership intervention in question (Hannum et al., 2007). Future research should focus on comparing different types of programme effectiveness in changing individuals.

This study provided evidence that leadership development programmes in the marketplace today were effective at developing authentic leadership behaviours on participants but it has not tested the duration of such changes in time nor the transferability of them into organisational benefits. Transfer of training into job-related activities has been studied evaluating moderation effects of individual characteristics (e.g. learner readiness and self-efficacy), and work environment (e.g. supervisory and peer support) (Aguinis & Kraiger, 2009; Holton, Bates, & Ruona, 2001). They indicate that transfer effects are dependent on the unique combination of such factors and the training application.

In addition to the limitations outlined until this point, there are a few design and methodological concerns, which are explored below:

Design limitations could threaten internal and external validity. Internal validity could be threatened by history (i.e. events occurring during the period of the treatment

intervention) and maturation (i.e. aging of participants) (Bryman, 2001). In this study, however, the inclusion of control groups eliminates such potential threats. If there was any significant event during the study that might have impacted the findings, both experimental and control groups were equally exposed to it. External validity, on the other hand, could be threatened by interactive effects of testing (Bryman, 2001), which refers to the likelihood that participants at pre-test could be more or less sensitive to the leadership intervention affecting its scores. The only way to avoid such limitation is by designing a study without pre-test, however, this was a fundamental component for being able to measure behaviour change across time.

One of the methodological limitations of this study is that it used a quasi-experimental approach with treatment and control groups. The limitation of such design is that it cannot completely rule out bias in participant selection processes. A true-experimental design would require control groups and random placement, both of which are typical challenges in leadership development studies; especially those performed within the business world (Hayward & Voller, 2010). Corporations invest a lot money and effort in talent management programmes and typically individuals are not randomly selected and true-experimental designs are very rare. Most corporations do not measure the true impact of their interventions, let alone want to do so following a true experimental design, with random assignment of participants into control and treatment groups, with possible negative perceptions by leaders and managers involved in the process. It is encouraged, however, for future research to seek measurement of leadership development programmes with true experimental designs. In any case, the study attested that there were not significant demographic differences between treatment and control groups and the analysis did control for demographic factors (i.e. gender, age, nationality and years of experience) showing that they were not the cause of differences in findings.

This quasi-experimental research involved several statistical comparisons (e.g. before-after and between programmes). For these comparisons to be defensible and statistically viable, fairly large sample sizes are needed (Tourangeau, 2004). The sample base in this study represents a mix of individuals across different programmes, working for different organisations, operating in different cultures, and acting at different levels in the organisation. The diversity of the sample could be a limitation but turn out to be an advantage as intention to behave authentically predicted actual behaviour, independent of the programme, organisation, culture and level in the organisation. Understanding the effect of variables such as culture and the leader's level into the organisation could constitute an area where further research would be needed.

The sample size of the participants was lower than expected, which could pose a potential limitation and decrease the generalisability of the current findings. Despite this potential limitation, the analyses showed significant relationships and the findings are promising. It is recommended to replicate the findings with larger samples to provide further support.

Another methodological potential limitation resides in the fact that all data comes from same person at the same time, known as common method bias (Podsakoff, Podsakoff, MacKenzie, & Lee, 2003). The negative effect on the present study would be seen in the inflation of some correlations as the same person has answered them. The logical path outlined in figure 7 showed both mediation (of IN between AT and ALB) and moderation (of PCC between the AT-IN relationship). Common method bias is not an issue regarding moderation analyses because if it has an effect it would work against finding support for the interactions (McClelland & Judd,

1993). Mediation is more vulnerable to same source bias but the path between attitude and intentions was not affected by common source threats due to the fact that measures were collected across time (i.e. AT at T1 and IN at time 2). The only analysis, therefore, likely to be affected by common source bias is the path between intentions and authentic leadership behaviour, which is quite strong. Furthermore, self and rater scores at T2 correlated*. Moreover, because evidence was found for the proposed moderated mediation relationship, the model cannot be explained away by common method variance.

In addition, this study evaluated constructs that are the result of internal cognitive processes and which can only be reported by the perceiver himself. This further justifies using self-rated responses for variables such as attitude and intentions. The variable more susceptible to common sour*ce bias is ALB and in this case raters were used to validate self-reported ratings.

All these arguments suggest that common source error is unlikely explaining the results of this study. Nevertheless, further research would be fruitful to assess the relationship between intentions and authentic leadership behaviour based on objective evidence

6. Future research

The current research serves as a solid foundation for future inquiries that could further advance the understanding on leadership development theory and practice. This section discusses the possibilities for future research, to add to the depth and breadth of the present findings.

---

* Correlations had a moderate effect size after taking two outliers out (0.29) based on Cohen's interpretation (1992).

This study attested that leadership development programmes were useful at developing intentions in individual participants, which in turn translated into behaviour changes that enhanced their authentic leadership. While this is in line with previous meta-analytic research looking at how the development of intentions translated into actual behaviour, the results of this study showed higher effect sizes than the averages reported by other studies investigating the effects of intentions on health related behaviours. For this reason, it is recommended that future research investigates the relationship between intentions and authentic leadership behaviour to ascertain the strength of such relationships and to provide further evidence to the innovative combination of TPB and ALD tested in the present study. The combination of these two complementary theories shows potential as being used as a more general framework to evaluate individual behaviour change through leadership development interventions but more research is needed to ascertain this integration.

As discussed earlier in this paper, attitude explained most of the variance in the development of intentions between pre- and post-test. On the other side, contrary to what TPB model predicts, the development of subjective norm (SN) and perceived behavioural control (PBC) did not explain the development of intentions. As such, it is recommended for future research to examine the strength of relationships within the Azjen's theory of planned behaviour (1991) when applied to a leadership development context. SN and PBC may enhance or decrease the effectiveness of the mediation effect of intentions over ALB.

This study developed and tested a TPB questionnaire mapped to ALD. Such a questionnaire showed weak reliabilities. Future research should validate this TPBQ questionnaire with additional data sets providing further evidence that it is a good measure of the development of intentions towards authentic leadership behaviours.

Also, the results of this study indicate that ALD is a generic leadership theory that can be developed through programme interventions not specifically designed to do so. To be able to generalise these findings for other training interventions in the marketplace today, further research is needed. Additionally, Authentic Leadership Development (ALD) theory (Avolio & Gardner, 2005; Gardner et al., 2005b) is a newer theory and would benefit from further empirical research and validation (Ardichvili & Manderscheid, 2008) to better understand how it can be nurtured and developed.

Of course, the present study cannot clarify which type of programme design is more effective at changing/developing authentic leadership competences on individuals. Future research should focus on assessing the effectiveness of different types of interventions with different programme contents and techniques. These should include and compare the effectiveness of the most commonly used (formal or informal) practices such as 360-degree feedback, case studies, role-plays with feedback, executive coaching, individual or team challenges and experiential team dynamics, action learning, mentoring, networking, etc. But they should also include newer approaches to management and leadership learning and development such as aesthetic and artistic methods (Edwards et al., 2013; Taylor, Fisher, & Dufresne, 2002), or such as physical fitness, creativity, and spirituality (Pearce, 2007).

Results of this study indicated that people with more positive contemplation of change, and whom also had a positive attitude towards authentic leadership behaviours, developed stronger intentions to change and further benefited from interventions in developing their authentic leadership. This study is not, however, conclusive as to what are the effects of the possible multiple relationships between positive contemplation of change, readiness to change and developmental readiness within the development of intentions (as per TPB) to lead authentically (as per ALD).

Furthermore, this study suggests future research looking at the development of Pre-Leadership Development Questionnaires (PLDQ) to be able to classify individuals in those which are positively contemplating change and those that are not and offer them different types of interventions aimed to develop from were they are in their development journey. The practice of leadership development would also benefit from future research evaluating how techniques, which proved to be effective at changing health-related behaviours, would boost leadership development effectiveness in producing longer-term behaviour changes. More research is needed, therefore, before the new science of leadership development can understand the type of leadership development design that best fits individuals within different change readiness following, for instance, Prochaska's et al. (1984; 2006) stages of change model (see table 13). In this line, and leveraging from Harris and Cole's (2007) research and the learning of this study, it is suggested that future studies would propose and validate a scale based on the stages of change model to be used before leadership development programmes to classify people and to provide valuable information to the trainers.

7. Conclusion

Millions are invested in leadership development every year (Avolio et al., 2010; Huselid et al., 1997; Thompson et al., 2002; Training, 2012), but there are few programmes that measure their real impact on individuals and organisations. This study contributes to the body of knowledge of the new science of leadership development. Theories of leadership development are still at an embryonic stage and we do not fully understand how leadership is developed, even less we know the real impact of a leadership development programme on individuals and organisations.

This study provides evidence that leadership development programmes from four organisations: two large Corporations and two international business schools were useful at developing authentic leadership behaviours.

While most of the existing theories and models emphasize the importance of change, they do not operate within a scientifically validated change framework. This research is an exploratory study that aims to demonstrate the applicability of proven health psychology theories and models for personal change on leadership development. This study extends the work done by existing theories and models of behavioural change in the fields of health psychology and psychotherapy, on leadership development. Using these theories of change, this study measured the degree in which leadership development programmes in the marketplace today helped middle managers develop intentions to lead authentically. Results attest that the four leadership interventions, representing a variety of programme designs, objectives, and cultural settings did develop stronger intention to behave authentically, which translated into behaviour change as compared to baseline scores. The results also indicated that intentions mediated the relationship between attitude and authentic leadership behaviour, but not the subjective norm-behaviour and perceived behavioural control-behaviour relationships.

The research design in this study incorporated measures that explored how a leadership programme needs to be adapted to participants' readiness for change. This study found out that participants who had a more positive contemplation of change (i.e. were more motivated and ready for development) did develop stronger intentions to change, and achieved a greater behaviour change. The implication for practitioners and designers of leadership development interventions would be to consider the non-uniformity of the participants going into a programme and the

possible separation and customisation of the programme for individuals in different stages of personal change. Concretely, this research suggests that to improve training effectiveness and ROI, individuals attending leadership development programmes should be classified into those with a positive contemplation of change (PCC) and those with lesser willingness to change or unawareness that they need to change. Interventions then should be designed to be most effective for their targeted group and avoid giving coffee for all.

This research calls for additional research integrating TPB theory and other models of behaviour change from health psychology into the practice of leadership development to better understand how and under what circumstance (i.e. type of programmes and intervention techniques) leadership develop faster and with a longer term effect.

VI. REFERENCES

Abdullah, S. M. 1995. *The Power of One: Authentic Leadership in Turbulent Times*. Philadelphia: New Society Publishers.

Abraham, C., Sheeran, P., & Johnston, M. 1998. From health beliefs to self-regulation: Theoretical, advances in the psychology of action control. *Psychology and Health*, 13: 569-591.

Aguinis, H., & Kraiger, K. 2009. Benefits of training and development for individuals and teams, organizations, and society. *The Annual Review of Psychology*, 60: 451-474.

Aguinis, H., M.C., S., & C.A., P. 2008. Comparison of three meta-analytic procedures for estimating moderating effects of categorical variables. *Organizational Research Methods*, 11: 9-34.

Ajzen, I. 1971. Attitudinal vs. normative messages: An investigation of the differential effects of persuasive communications on behavior. *Sociometry*, 34: 263-280.

Ajzen, I. 1985. From intentions to actions: A theory of planned behavior. In J. Kuhl, & J. Beckmann (Eds.), *Action-control: From cognition to behavior*: 11-39. Heidelberg: Springer.

Ajzen, I. 1988. *Attitudes, personality, and behavior*. Chicago: Dorsey Press.

Ajzen, I. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2): 179.

Ajzen, I. 2009. From Intentions to Behavior: Implementation Intention, Commitment, and Conscientiousness. *Journal of Applied Psychology*, 39(6): 1356-1372.

Ajzen, I., & Fishbein, M. 1980. *Understanding Attitudes and Predicting Social Behavior*. Eglewood Cliffs, NJ: Prentice-Hall.

Antonakis, J., & House, R. J. 2002. The full-range leadership theory: The way forward. In B. J. Avolio, & F. J. Yammarino (Eds.), *Transformational and charismatic leadership the road ahead*: 3-34. Amsterdam: JAI Press.

Ardichvili, A., & Manderscheid, S. V. 2008. Emerging Practices in Leadership Development: An Introduction. *Advances in Developing Human Resources*, 10(5): 619.

Armenakis, A. A., & Bedeian, A. G. 1999. Organizational Change: A Review of Theory and Research in the 1990s. *Journal of Management*, 25(3): 293-315.

Armenakis, A. A., & Harris, S. G. 2009. Reflections: our Journey in Organizational Change Reasearch and Practice. *Journal of Change Management*, 9(2): 127-142.

Armenakis, A. A., Harris, S. G., & Feild, H. S. 1999. Making change permanent: institutionalizing change interventions. In W. A. Pasmore, & R. W. Woodman (Eds.), *Research in Organizational Development and Change*, Vol. 12: 97-128. Stamford, CT: JAI Press.

Armenakis, A. A., Harris, S. G., & Mossholder, K. W. 1993. Creating readiness for organizational change. *Human Relations*, 46: 681-703.

Armitage, C. J., & Conner, M. 2001. Efficacy of the theory of planned behavior: A meta-analytic review. *British Journal of Social Psychology*, 40: 471-499.

Arthur, W. J., Bennett, W. J., Edens, P., & Bell, S. T. 2003. Effectiveness of training in organizations: a meta-analysis of design and evaluation features. *Journal of Applied Psychology*, 88: 234-245.

Arvey, R. D., Zhang, Z., Avolio, B. J., & Krueger, R. F. 2007. Developmental and genetic determinants of leadership role occupancy among women. *Journal of Applied Psychology*, 92(3): 693-706.

Auken, S. V., Wells, L. G., & Chrysler, E. 2005. The relative value of skill, knowledge and teaching methods in explaining MBA programme return on investment. *The Journal of Education for Business*, 81(1): 41-46.

Austin, J. J., & Vancouver, J. B. 1996. Goal constructs in psychology: Structure, process, and content. *Psychological Bulletin*, 120: 338-375.

Avolio, B. J. 2003. Examining the full range model of leadership: Looking back to transform forward. In D. Day, & S. Zaccaro (Eds.), *Leadership development for transforming organizations: Growing leaders for tomorrow*: 71-98. Mahwah: Erlbaum.

Avolio, B. J. 2007. Promoting More Integrative Strategies for Leadership Theory-Building. *American Psychologist*, 62(1): 25-33.

Avolio, B. J., Avey, J. B., & Quisenberry, D. 2010. Estimating return on leadership development investment. *The Leadership Quarterly*, 21: 633-644.

Avolio, B. J., & Chan, A. 2008. The dawning of a new era for genuine leadership development. In Hodgkinson G., & F. K. (Eds.), *International Review of Industrial and Organizational Psychology*, Vol. Volume 23: pp. 197-238. New York: Wiley.

Avolio, B. J., & Gardner, W. L. 2005. Authentic leadership development: Getting to the root of positive forms of leadership. *Leadership Quarterly*, 16(3): 315.

Avolio, B. J., Gardner, W. L., & Walumbwa, F. O. 2009a. Authentic Leaderhip Questionnaire: Gallup Leadership Institute.

Avolio, B. J., & Hannah, S. T. 2008. Developmental Readiness: Accelerating leader development. *Consulting Psychology Journal: Practice and Research*, 60(4): 331-347.

Avolio, B. J., Reichard, R. J., Hannah, S. T., Walumbwa, F. O., & Chan, A. 2009b. A meta-analytic review of leadership impact research: Experimental and quasi-experimental studies. *Leadership Quarterly*, 20(5): 764-784.

Avolio, B. J., Walumbwa, F. O., & Weber, T., J. 2009c. Leadership: Current Theories, Research, and Future Directions. *Annual Review of Psychology*, 60(1): 421-449.

Baldwin, T. T., Magjuka, R. J., & Loher, B. T. 1991. The perils of participation: effects of choice of training on trainee motivation and learning. *Personnel Psychology*, 44: 51-65.

Bandura, A. 1977. Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review*, 84: 191-215.

Bandura, A. 1979. Self-Referent Mechanisms in Social-Learning Theory. *American Psychologist*, 34(5): 439-441.

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

Baron, R. M., & Kenny, D. A. 1986. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51: 1173-1182.

Bartlem, C., & Locke, E. 1981. The Coch and French study: a critique and reinterpretation. *Human Relations*, 34(7): 555-566.

Bass, B. M. 1985. *Leadership and Performance Beyond Expectations*. New York: Free Press.

Bass, B. M. 1990. *Bass and Stogdill's handbook of leadership (3 ed.)*. New York, NY: Free Press.

Bass, B. M. 1998. *Transformational leadership: Industrial, military, and educational impact*. Mahwah, NJ: Lawrence Erlbaum.

Bass, B. M., & Avolio, B. J. 1994. *Improving organizational effectiveness through transformational leadership*. Thousand Oaks, CA: Sage.

Bass, B. M., & Steidlmeier, P. 1999. Ethics, character and authentic transformational leadership. *Leadership Quarterly*, 10(2): 181-217.

Baum, F. 1995. Researching public health: Behind the qualitative-quantitative methodological debate. *Social Science & Medicine*, 40(4): 459-468.

Baumgardner, A. H. 1990. To know oneself is to like oneself: Self-certainty and self-affect. *Journal of Personality and Social Psychology*, 58: 1062-1072.

Bayley, E. W. 1988. *A meta-analysis of evaluations of the effect of continuing education on clinical practice in the health professions*. Unpublished Unpublished doctoral dissertation, Unpublished doctoral dissertation, University of Pennsylvania.

Beck, A. 1977. *Cognitive Therapy of Depression*. New York: Guilford Press.

Bennet, P., Conner, M., & Godin, G. 2004. Changing Behavior to Improve Health. In S. Michie, & C. Abraham. (Eds.), *Health Psychology in Practice*. Oxford: Blackwell.

Bennis, W., & Thomas, R. 2008. Crucibles of Leadership: How to Learn from Experience to Become a Great Leader. *Harvard Business School Press*.

Bennis, W. G. 2007. The challenges of leadership in the modem world—Introduction to the special issue. *American Psychologist*, 62: 2-5.

Bernal, E. 2009. Designing Transformational Leadership Development Programmes. *Business Leadership Review*(6.4).

Bernal, E. 2010. Conscious Leadership: Unifying leadership in a post crisis world. In H. Starren, K. Jironet, & P. Harris (Eds.), *Leadership Talks*. Amsterdam: De Baak.

Bernal, E., Cos, J., & Tarré, X. 2011. *Energía Organizacional*. Barcelona: Profit Editorial.

Bernal, E., & Zoggel, J. V. 2011. *¿Trabajas o Colaboras? Team Beat, Más allá del trabajo en equipo*. Barcelona, Spain: Profit Editorial.

Blanchard, K. 2008. Is Training Without Follow-Up Coaching Unethical? (The One Minute Messenger (The Associate Newsletter for The Ken Blanchard Companies)).

Block, P. 1993. ***Stewardship: Choosing service over self interest***. San Francisco: Berrett-Koehler.

Bommer, W. H., Rubin, R. S., & Baldwin, T. T. 2004. Setting the stage for effective leadership: Antecedents of transformational leadership behavior. ***Leadership Quarterly***, 15(2): 195-210.

Bono, J. E., & Judge, T. A. 2004. Personality and Transformational and Transactional Leadership: A Meta-Analysis. ***Journal of Applied Psychology***, 89(5): 901-910.

Boyatzis, R. E. 2008. Leadership development from a complexity perspective. ***Consulting Psychology Journal: Practice and Research***, . 60(4): 298-313.

Brown, L. M., & Posner, B. Z. 2001. Exploring the relationship between learning and leadership. ***Leadership & Organization Development Journal***, 22(5/6): 274.

Bryman, A. 1992. ***Charisma and leadership in organizations***. London, UK: Sage.

Bryman, A. 2001. ***Social research methods***. Bath, UK: Oxford University Press.

Burke, L. A., & Sadler-Smith, E. 2006. Instructor Intuition in the Educational Setting. ***Academy of Management Learning & Education***, 5: 169-181.

Burke, M. J., & Day, R. R. 1986. A Cumulative Study of the Effectiveness of Managerial Training. ***Journal of Applied Psychology***, 71(2): 232-245.

Burns, J. M. 1978. ***Leadership***. NewYork: Harper & Row.

Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, E. M., Lavallee, L. F., & Lehman, D. R. 1996. Self-concept clarity: Measurement, personality correlates, and cultural boundaries. ***Journal of Personality and Social Psychology***, 70: 141-156.

Carpenter, C. J. 2010. A meta-analysis of the effectiveness of health belief model variables in predicting behavour. ***Health Communication***, 25: 661-669.

Carver, C. S., & Scheier, M. F. 1982. Control theory: a useful conceptual framework for personality-social, clinical, and health psychology. ***Psychological Bulletin***, 92(1): 111-135.

Cashman, K. 1998. ***Leadership from the inside out: Becoming a leader for life***. Provo, UT Executive Excellence.

CCL. December 2012. http://www.ccl.org/leadership/programs/LDPWorks.aspx?pageId=3175: The Center for Creative Leadership.

CEDEP. 2013. www.cedep.fr.

Chen, M.-F., Pan, C.-T., & Pan, M.-C. 2009. The joint moderating impact of moral intensity and moral judgement on consumer's use intention of pirated software. ***Journal of Business Ethics***, 90(3): 361-373.

Clark, M. C. 1993. Transformational Learning. (in Merriam, S.B. (Ed.), An Update on Adult Learning Theory: New Directions for Adult and Continuing Education, Jossey-Bass, San Francisco, CA.).

Clarke, N. 2004. HRD and the challenges of assessing learning in the workplace. ***International Journal of Training and Development***, 8(2): 140-156.

Cohen, J. 1992. A power primer. ***Psychological Bulletin***, 112: 155-159.

Cole, M. S., Harris, S. G., & Feild, H. S. 2004. Stages of learning motivation: Development and validation of a measure. *Journal of Applied Social Psychology*, 34(7): 1421-1456.

Collins, D. B., & Holton, E. F. 2004. The effectiveness of managerial leadership development programs: A meta-analysis of studies from 1982 to 2001. *Human Resource Development Quarterly*, 15(2): 217.

Collins, L. M., & Sayer, A. G. 2001. New Methods for the Analysis of Change, *American Psychological Association*. Washington, D.C.

Colquitt, J. A., J.A., L., & Noe, R. A. 2000. Toward an integrative theory of training motivation: a meta-analytic path analysis of 20 years of research. *Journal of Applied Psychology*, 85: 678-707.

Colquitt, J. A., & Simmering, M. J. 1998. Consciousness, goal orientation, and motivation to learn during the learning process: a longitudinal study. *Journal of Applied Psychology*, 83: 654-665.

Conger, J. A., & Kanungo, R. N. 1987. Toward a behavior theory of charismatic leadership in organizational setting. *Academy of Management Review*, 12: 637-647.

Cooper, C. D. 2005. Looking forward but learning from our past: Potential challenges to developing authentic leadership theory and authentic leaders. *Leadership Quarterly*, 16(3): 475-493.

Creswell, J. 1994. *Research design: Quanlitative and quatitative approaches*. Thousand Oaks, CA: SAGE publications.

Cunningham, C. E., Woodward, C. A., Shannon, H. S., MacIntosh, J., Lendrum, B., Rosenbloom, D., & Brown, J. 2002. Readiness for organizational change: a longitudinal study of workplace, psychological and behavioural correlates. *Journal of Occupational & Organizational Psychology*, 75: 377-392.

Dansereau, F., Graen, G. B., & Haga, W. 1975. A vertical dyad linkage approach to leadership in formal organizations. *Organizational Behavior and Human Performance*, 13: 46-78.

Day, D. B. 2000. Leadership development: A review in context. *Leadership Quarterly*, 11(4): 581-614.

Day, D. V. 2001. Leadership development: A review in context. *Leadership Quarterly*, 11(4): 581-613.

Day, D. V., & Halpin, S. M. 2004. Growing leaders for tomorrow: An introduction. In D. V. Day, Z. S. J., & S. M. Halpin (Eds.), *Leader development for transforming organizations: Growing leaders for tomorrow*: pp. 3–22. Mahwah, NJ7: Erlbaum.

Day, D. V., Harrison, M. M., & Halpin, S. M. 2008. *An integrative approach to leader development: Connecting adult development, identity and expertise*. New York: Routledge.

Day, D. V., & O'Connor, P. M. 2003. Leadership Development: Understanding the Process. In S. E. Murphy, & R. E. Riggio (Eds.), *The Future of Leadership Development*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc., Publishers.

Day, D. V., Zaccaro, S. J., & Halpin, S. M. 2004. *Leader Development for Transforming Organizations: Growing Leaders for Tomorrow*. Mahwah, NJ: Lawrence Erlbaum.

De Vaus, D. 2001. *Research design in social research. Surrey*. Surrey: SAGE publications.

Deci, E. L., & Ryan, R. M. 1995. Human autonomy: The basis for true self-esteem. In M. H. Kernis (Ed.), *Efficacy, agency, and self-esteem*: 31-49. New York: Plenum Press.

Deci, E. L., & Ryan, R. M. 2000. "What" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11: 227-268.

Dell. 2013. www.dell.com.

Dent, E. B., Higgins, A. E., & Wharff, D. M. 2005. Spirituality and leadership: an empirical review of definitions, distinctions, and embedded assumptions. *Leadership Quarterly*, 16: 625-653.

Derue, D. S., Nahrgang, J. D., Wellman, N., & Humphrey, S. E. 2011. Trait and behavioral theories of leadership: An integration and meta-analytic test of their relative validity. *Personnel Psychology*, 64: 7-52.

DiClemente, C. C., & Prochaska, J. O. 1982. Self-change and Therapy Change of Smoking Behavior: A Comparison of Processes of Change in Cessacion and Maintenance. *Addictive Behaviors*, 7: 133-142.

Dixon, N. M. 1990. The relationship between trainee responses on participation reaction forms and post-test scores. *Human Resource Development Quarterly*, 1: 129-137.

Dobbins, G. H., & Platz, S. J. 1986. Sex differences in leadership: How real are they? *Academy of Management Review*, 11: 118-127.

Doh, J. P. 2003. Can Leadership Be Taught? Perspectives From Management Educators. *Academy of Management Learning & Education*, 2(1): 54-67.

Dolcini, M. M., Adler, N. E., Lee, P., & Bauman, K. E. 2003. An assessment of the validity of adolescent self-reported smoking using three biological indicators. *Nicotine and Tobacco Research*, 5: 473-483.

Dotlich, D. L., & Noel, J. L. 1998. *Action learning: How the world's to pcompanies are re-creating their leaders and themselves*. San Francisco: Jossey-Bass.

Dragoni, L., Tesluk, P. E., Russell, J. E. A., & Oh, I. S. 2009. Understanding managerial development: Integrating developmental assignments, learning orientation, and access to developmental opportunities in predicting managerial competencies. *Academy of Management Journal*, 52: 731-743.

Drzensky, F., Egold, N., & Van Dick, R. 2012. Ready for a change? A longitudinal study of antecedents, consequences and contingencies of readiness for change. *Journal of Change Management*, 12(1): 95-111.

EADA. 2013. www.eada.edu/en.

Eagly, A. H., & Chaiken, S. 1993. *The psychology of attitudes*. Fort Worth: Harcourt Brace Jovanovich.

Eckert, R., Isaakyan, S., & Mulhern, W. 2013. The Effectiveness of the Leadership Development Programme in Europe: Center for Creative Leadership.

EDF. 2013. www.edf.com.

Edwards, G., Elliott, C., Iszatt-White, M., & Schedlitzki, D. 2013. Critical and alternative approaches to leadership learning and development. *Management Learning*, 44(1): 3-10.

Edwards, J. R., & Lambert, L. S. 2007. Methods for Integrating Moderation and Mediation: A General Analytical Framework Using Moderated Path Analysis. *Psychological Methods*, 12(1): 1-22.

Enos, M. D., Kehrhahn, M. T., & Bell, A. 2003. Informal learning and the transfer of learning: How mangers develop proficiency. *Human Resource Development Quarterly*, 14(4): 369-387.

Fekadu, Z., & Kraft, P. 2001. SELF-IDENTITY IN PLANNED BEHAVIOR PERSPECTIVE: PAST BEHAVIOR AND ITS MODERATING EFFECTS ON SELF-IDENTITY-INTENTION RELATIONS. *Social Behavior & Personality: An International Journal*, 29(7): 671.

Fiedler, F. E. 1967. *A theory of leadership effectiveness*: McGraw-Hill: Harper and Row Publishers Inc.

Field, A. P. 2005. *Discovering statistics using SPSS (2nd ed.)*. London: SAGE publications Ltd.

Fishbein, M. 1963. An investigation of the relationship between beliefs about an object and the attitude toward that object. *Human Relations*, 16: 233-240.

Fishbein, M. 1967. A consideration of beliefs and their role in attitude measurement. In M. Fishbein (Ed.), *Readings in attitude theory and measurement*: 257-266. New York: John Wiley.

Fishbein, M. 2008. A Reasoned Action Approach to Health Promotion. *Medical Decision Making*, 28(6): 834-844.

Fishbein, M., & Ajzen, I. 1975. *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Fisher, J. D., & Fisher, W. A. 1992. Changing AIDS-risk behavior. *Psychological Bulletin*, 111: 455-474.

Flavell, J. H. 1963. *The developmental psychology of Jean Piaget*. New York ; London: Van Nostrand.

Fleishman, E. A. 1958. A relationship between incentive motivation and ability level in psychomotor performance. *Journal of Experimental Psychology*, 56: 78-81.

Fleishman, E. A., Mumford, M. D., Zaccaro, S. J., Levin, K. Y., Korotkin, A. L., & Hein, M. B. 1991. Taxonomic efforts in the description of leader behavior: A synthesis and functional interpretation. *Leadership Quarterly*, 2(245-287).

Floyd, D. L., Prentice-Dunn, S., & Rogers, R. W. 2000. A Meta-Analysis of Research on Protection Motivation Theory. *Journal of Applied Psychology*, 30(2): 407-429.

Fulmer, R. M., & Conger, J. A. 2004. *Growing your company's leaders: How great organizations use succession management to sustain competitive advantage*. New York, NY: AMACOM.

Galton, F., & Eysenck, H. J. 1869. *Hereditary genius*. London, UK: Macmillan.

Gardner, G. 1977. Worker's participation: A critical evaluation of Coch and French. *Human Relations*, 30(12): 1071-1078.

Gardner, W. L., Avolio, B. J., Luthans, F., & et al. 2005a. "Can you see the real me?" A self-based model of authentic leader and follower development. *Leadership Quarterly*, 16(3): 343.

Gardner, W. L., Avolio, B. J., & Walumbwa, F. O. 2005b. *Authentic Leadership Theory and Practice: Origins, Effects and Development*. San Francisco, CA: Elsevier.

Gardner, W. L., Lowe, K. B., Moss, T. W., Mahoney, K. T., & Cogliser, C. C. 2010. Scholarly leadership of the study of leadership: A review of The Leadership Quarterly′s second decade, 2000–2009. *Leadership Quarterly*, 21(6): 922-958.

George, B. 2003. *Authentic Leadership: Rediscovering the Secrets of Creating Lasting Value*. San Francisco, CA: Jossey-Bass.

Glynn, M. A., & DeJordy, R. 2010. A look at the last half-century of research. In N. Nohria, & R. Khurana (Eds.), *Handbook of Leadership Theory and Practice*. Boston, MA: Harvard Business Press.

Godin, G., Lambert, L. D., Owen, N., Nolin, B., & Prud'homme, D. 2004. Stages of different algorithms of classification. *British Journal of Health Psychology*, 9: 253-267.

Godin, G., Valois, P., & Lepage, L. 1993. The pattern of influence of perceived behavioral control upon exercise behaviour: An application of Ajzen's theory of planned behaviour. *Journal of Behavioral Medicine*, 16: 81-102.

Goldberg, L. R. 1990. An alternative "description of personality": The Big-Five factor structure. *Journal of Personality and Social Psychology*, 59: 1216-1229.

Goldstein, I. L., & Ford, J. K. 2002. *Training in Organizations* (4th ed.): Wadsworth Thomsom Learning.

Gollwitzer, P. M. 1993. Goal achivement: The role of intentions. *European Review of Social Psychology*, 4: 141-185.

Graeff, C. L. 1997. Evolution of situational leadership theory: A critical review. *Leadership Quarterly*, 8: 153-170.

Graen, G., Liden, R., & Hoel, W. 1982. Role of Leadership in the employee withdrawal process. *Journal of Applied Psychology*, 67: 868-872.

Graen, G. B., Novak, M. A., & Sommerkamp, P. 1982. Role of leadership in the employee withdrawal process. *Journal of Applied Psychology*, 67: 868-872.

Graen, G. B., & Uhl-Bien, M. 1995. Relationship-based approach to leadership: Development of leader-member Exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *Leadership Quarterly*, 6: 219-247.

Greenleaf, R. 2002. *Servant leadership: A journey into the nature of legitimate power and greatness*. Mahwah, NJ: Paulist.

Gutiérrez, M., & Tasse, T. 2007. Using a theory of change approach for leadership development evaluations. In K. M. Hannum, J. W. Martineau, & C. Reinert (Eds.), *The Handbook of Leadership Development Evaluation*: 48-70. San Francisco: Jossey-Bass.

Hall, D. 2004. Self-awareness, identity and leader development. In D. V. Day, S. J. Zaccaro, & S. M. Halpin (Eds.), *Leader Development for Transforming Organizations*: 153-176. Mahwah, NJ: Lawrence Erlbaum.

Hannum, K. M., Martineau, J. W., & Reinert, C. 2007. *The Handbook of Leadership Development Evaluation*. San Francisco: Jossey-Bass.

Harris, S. G., & Cole, M. S. 2007. A stages of change perspective on managers' motivation to learn in a leadership development context. *Journal of Organizational Change Management*, 20(6): 774.

Harter, S. 2002. Authenticity. In C. R. Snyder, & S. J. Lopez (Eds.), *Handbook of positive psychology*: 382-394. London: Oxford University Press.

Hayward, I., & Voller, S. 2010. How effective is leadership development? The evidence examined. *The Ashridge Journal*.

Hedges, L., & Olkin, I. 1985. *Statistical methods for meta-analysis*. New York: Academic Press.

Heifetz, R. 1994. *Leadership without Easy Answers*. Cambridge, MA: Harvard University Press.

Hersey, P., Blanchard, K., & Johnson, D. 2008. *Management of Organizational Behavior: Leading Human Resources (9th ed.)*. Upper Saddle River, NJ: Pearson Education.

Hirst, G., Mann, L., Bain, P., Pirola-Merlo, A., & Richver, A. 2004. Learning to Lead: The Development and Testing of a Model of Leadership Learning. *Leadership Quarterly*, 15(3): 311-327.

Holton, E. F., Bates, R. A., & Ruona, W. E. A. 2001. Development of a generalized learning transfer system inventory. *Human Resources Development Quarterly*, 11: 333-360.

Hooijberg, R., Hunt, J. G., & Dodge, G. E. 1997. Leadership complexity and development of the leaderplex model. *Journal of Management*, 23(3): 375.

House, R. J., Javidan, M., Hanges, P. J., & Dorfman, P. W. 2002. Understanding cultures and implicit leadership theories across the globe: An introduction to Project GLOBE. *Journal of World Business*, 37: 3-10.

Hoyle, R. H., Kernis, M. H., Leary, M. R., & Baldwin, M. W. 1999. *Selfhood: Identity, esteem, regulation,*. Boulder, CO: Westview Press.

Hull, C. L. 1943. *Principles of behavior*. New York: Appleton-Century-Crofts.

Humphreys, A. S., Thompson, N. J., & Miner, K. R. 1998. Assessment of breastfeeding intention using the Transtheoretical Model and the Theory of Reasoned Action. *Health Education Research*, 13(3): 331.

Huselid, M. A., Jackson, S. E., & Schuler, R. S. 1997. Technical and strategic human resource management effectiveness as determinants of firm performance. *Academy of Management Journal*, 40: 171-188.

Ilies, R., Morgeson, F. P., & Nahrgang, J. D. 2005. Authentic leadership and eudaemonic well-being: Understanding leader–follower outcomes. *Leadership Quarterly*, 16: 373–394.

James, L. R., & Brett, J. M. 1984. Mediators, moderators, and tests for mediation. *Journal of Applied Psychology*, 69: 307-321.

Judd, C. M., & Kenny, D. A. 1981. Process analysis: Estimating mediation in treatment evaluations . Evaluation Review. *Evaluation Review*, 3: 602-619.

Judge, T., & Bono, J. E. 2000. Five-factor model of personality and transformational leadership. *Journal of Applied Psychology*, 85(5): 751-765.

Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. W. 2002. Personality and leadership: A qualitative and quantitative review. *Journal of Applied Psychology*, 87(4): 765-780.

Judge, T. A., & Piccolo, R. F. 2004. Transformational and Transactional Leadership: A Meta-Analytic Test of Their Relative Validity. *Journal of Applied Psychology*, 89(5): 755-768.

Kegan, R. 2000. What "form" transforms? A constructive-developmental approach to transformative learning. (in Mezirow, J. (Ed.), Learning as Transformation: Critical Perspectives on a Theory in Progress, Jossey-Bass, San Francisco, CA.): 35-52.

Kernis, M. H. 2003. Toward a conceptualization of optimal self-esteem. *Psychological Inquiry*, 14: 1-26.

Kesselman, G. A., Hagen, E. L., & Wherry Sr., R. J. 1974. A factor Analyitic test of the Porter-Lawler Expentancy Model of work motivation. *Personnel Psychology*, 27(4): 569-579.

Kets de Vries, M., Hellwig, T., Guillén Ramo, L., Florent-Treacy, E., & Korotov, K. 2008. Long-term Effectiveness of a Transitional Leadership Development Program: An Exploratory Study. *INSEAD Working Paper - Unpublished*.

King, N. 2000. Marking ourselves heard: The challenges facing advocates of qualitative research in work and organizational psychology. *European Journal of Work and Organizational Psychology*, 9(4): 589-596.

Kirkpatrick, D. L. 1959. Techniques for Evaluating Training Programs. *Journal of ASTD*, 11: 1-13.

Kuhnert, K. W., & Lewis, P. 1987. Transactional and transformational leadership: A constructive/developmental analysis. *Academy of Management Review*, 12: 648-657.

LaHote, D., Simonetti, J. L., & Longenecker, C. O. 1999. Management training and development at Aeroquip-Vickers, Inc.: a process model - part 2. *Industrial and Commercial Training*, 31(6): 213.

Lai, L. C. 1996. *A meta-analysis of research on the effectiveness of leadership training programs*. Unpublished doctoral dissertation, University of Wisconsin-Madison.

Lam, C. S., Chan, F., & McMahon, B. T. 1991. Factorial Structure of the Change Assessment Questionnaire for Individuals with Traumatic Head-Injuries. *Rehabilitation Psychology*, 36(3): 189-199.

Leskiw, S.-L., & Singh, P. 2007. Leadership development: learning from best practices. *Leadership & Organization Development Journal*, 28(5): 444.

Levesque, D. A., Prochaska, J. M., & Prochaska, J. O. 1999. Stages of change and integrated service delivery. *Consulting Psychology Journal: Practice and Research*, . 51(4): 226-241.

Lewin, K. 1951. *Field Theory in Social Science*. New York: Harper and Row.

Likierman, A. 2009. Measuring the success of custom programmes, *EFMD Global View*, Vol. 3: 54-57: European Foundation for Management Development.

Lineberry, H. L., Nash, I. W., Herzfeldt, R., Steed, J., Hoole, E., & Hannum, K. 2008. The European CCL Leadership Development Program (LDP) - Impact and Evaluation: Center for Creative Leadership.

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

Locke, E. A., & Latham, G. P. 2002. Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist*, 57: 705-717.

Lord, R. G., & Brown, D. J. 2004. *Leadership processes and follower self-identity*. Mahwah, NJ: Erlbaum.

Lord, R. G., & Hall, R. J. 2005. Identity, deep structure and the development of leadership skill. *Leadership Quarterly*, 16(4): 591.

Lowe, K. B., & Gardner, W. L. 2000. Ten years of The leadership quarterly: Contributions and challenges for the future. Leadership Quarterly. *Leadership Quarterly*, 11(4): 459-514.

Lowe, K. B., Kroeck, K. G., & Sivasubramaniam, N. 1996. Effectiveness correlates of transformation and transactional leadership: A meta- analytic review of the MLQ literature. *Leadership Quarterly*, 7: 385– 425.

Lüfkens, M. 2010. Global crisis also a crisis of values, *World Economic Forum*. Geneva, Switzerland: World Economic Forum.

Luthans, F., & Avolio, B. J. 2003. Authentic leadership: A positive developmental approach. In K. S. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive Organizational Scholarship*: 241-261. San Francisco, CA: Barrett-Koehler.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. 2002. A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*, 7: 83-104.

Maddux, J., & Rogers, R. W. 1983. Protection motivation and self-efficacy: A revised theory of fear appeals and attitude change. *Journal of Experimental Social Psychology*, 19: 469-479.

Martin, R., Epitropaki, O., Thomas, G., & Topaka, A. 2010. A critical review of Leader-Member Relationship (LMX) research: Future prospects and directions. In G. Hodgkinson, & K. Ford (Eds.), *International Review of Industrial and Organizational Psychology*: 61-91. Chichester, UK: Wiley.

Martineau, J., & Johnson, E. 2001. Preparing for Development - Making the Most of Formal Leadership Programs, *CCL Guidebook*.

Mathiew, J. E., & Tannenbaum, S. I. 1992. Influences of individual and situational characteristics on measures of training effectiveness. *Academy of Management Journal*, 35: 828-847.

Maurer, T. 2002. Emloyee learning and development orientation: Toward an integrative model of involvement in continuous learning. *Human Resources Development Review*, 1: 9-44.

May, D. R., Chan, A., Hodges, T., & Avolio, B. J. 2003. Developing the moral component of authentic leadership. *Organizational Dynamics*, 32: 247-260.

McCall Jr, M. W. 2004. Leadership development through experience. *Academy of Management Executive*, 18(3): 127-130.

McCall, M. W. 1998. *High Flyers: Developing the Next Generation of Leaders*. Boston, MA: Harvard Business School Press.

McCauley, C. D., Moxley, R. S., & VanVelsor, E. 1998. *Handbook of Leadership Development*. San Francisco: Jossey-Bass Publishers.

McClelland, G. H., & Judd, C. M. 1993. Statistical difficulties of detecting interactions and moderator effects. *Psychological Bulletin*, 114: 376-390.

McConnaughy, E. A., DiClemente, C. C., Prochaska, J. O., & Velicer, W. F. 1987. Stages of change in psychotherapy: A follow up report. *Unpublished manuscript, University of Rhode Island, Kingston, RI*.

McConnaughy, E. A., Prochaska, J. O., & Velicer, W. F. 1983. Stages of change in psychotherapy: Measurement and sample profiles. *Psychotherapy: Theory, Research, and Practice*, 20: 368-375.

Mento, A. J., Steel, R. P., & Karren, R. J. 1987. A meta-analytic study of the effects of goal-setting on task-performance, 1966 to 1984. *Organizational Behavior and Human Decision Processes*, 39: 52-83.

Michie, S., & Abraham., C. 2004. *Health psychology in practice*. Oxford: Blackwell.

Morera, O. F., Johnson, T. P., Freels, S., Parsons, J., Crittenden, K. S., Flay, B. R., & Warnecke, R. B. 1998. The measure of stage of readiness to change: some psychometric considerations. *Psychological Assessment*, 10: 182-186.

Mumford, M. D., & Manley, G. G. 2003. Putting the development in leadership development: Implications for theory and practice. In S. E. Murphy, & R. E. Riggio (Eds.), *The future of Leadership Development*: pp. 237-261. Mahwah, NJ: Lawrence Erlbaum.

Murphy, S. E., & Riggio, R. E. 2003. *The Future of Leadership Development*. Mahwah, New Jersey.

Ng, K.-Y., Ang, S., & Chan, K.-Y. 2008. Personality and leader effectiveness: A moderated mediation model of leadership self-efficacy, job demands, and job autonomy. *Journal of Applied Psychology*, 93(4): 733-743.

Nicki, R. M., Remington, R. E., & MacDonald, G. A. 1984. Self-efficacy, nicotine-fading/self-monitoring, and cigarette-smoking behaviour. *Behaviour Research and Therapy*, 22: 477-485.

Noe, R. A., Wilk, S. L., Mullen, E. J., & Wanek, J. E. 1997. Employee development construct validation issues. In J. K. Ford (Ed.), *Improving Training Effectiveness in Work Organizations*: 153-189. New Jersey: Erlbaum Mahwah.

Norman, P., Conner, M., & Bell, R. 2000. The theory of planned behaviour and exercise: Evidence for the moderating role of past behaviour. *British Journal of Health Psychology*, 5: 249-261.

Norman, P., & Smith, L. 1995. The Theory of planned behaviour and exercise: An investigation into the role of prior behaviour, behavioural intentions and attitude variability. *European Journal of Social Psychology*, 25: 403-415.

Oettingen, G. 2000. Effective self-regulation of goal attainment. *International Journal of Educational Research*, 33(7-8): 705-732.

Oh, I. S., Wang, G., & Mount, M. K. 2011. Validity of observer ratings of the five-factor model of personality traits: A meta-analysis. *Journal of Applied Psychology*, 96(4): 762-773.

Pearce, C. L. 2007. The future of leadership development: The importance of identity, multi-level approaches, self-leadership, physical fitness, shared leadership, networking, creativity, emotions, spirituality and on-boarding processes. *Human Resource Management Review*, 17(4): 355-359.

Perrow, C. 1970. *Organization analysis: A sociological view*. Belmont, CA: Wadsworth.

Peterson, S. M. 2012. Understanding Early Educator's Readiness for Change. *National Head Start Association Dialog*, 15(1): 95-112.

Phillips, J. J., & Phillips, P. 2007. Measuring return on investment in leadership development. In K. M. Hannum, J. W. Martineau, & C. Reinert (Eds.), *The Handbook of Leadership Development Evaluation*: 137-166. San Francisco: Jossey-Bass.

Phillips, J. J., & Schmidt, L. 2004. *The leadership scorecard: ROI for leaders*. Burlington, MA: Elsevier Butterworth-Heinemann.

Phillips, P. P., & Phillips, J. J. (Eds.). 2008. *ROI in action casebook*. San Francisco: John Wiley & Sons, Inc.

Podolny, J., Khurana, R., & Hill-Popper, M. 2005. Revising the meaning of leadership. *Research in Organizational Behavior*, 26: 1-36.

Podsakoff, P. M., Podsakoff, N. P., MacKenzie, S. B., & Lee, J.-Y. 2003. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88: 879-903.

Porter, L. W., & Lawler, E. E. 1968. *Managerial attitudes and performance*. Homewood, IL: Irwin-Dorsey.

Powell, K. S., & Yalcin, S. 2010. Managerial training effectiveness: A meta-analysis 1952-2002. *Personnel Review*, 39(2): 227-241.

Preacher, K. P., Rucker, D. D., & Hayes, A. F. 2007. Addressing Moderated Mediation Hypotheses: Theory, Methods, and Prescriptions. *Multivariate Behavioral Research*, 42(1): 185-227.

Prochaska, J. M., Prochaska, J. O., & Levesque, D. A. 2001. A transtheoretical approach to changing organizations. *Administration and Policy in Mental Health*, 28: 247-261.

Prochaska, J. O. 1979. *Systems of Psychotherapy, a transtheoretical analysis*. Homewood, Illinois: The Dorsey Press.

Prochaska, J. O., & DiClemente, C. C. 1984. *The transtheoretical approach: Crossing the traditional boundaries of change*. Homewood, IL: Irwin.

Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. 1992. In search of how people change. Applications to addictive behaviors. *American Psychologist*, 47(9): 1102-1114.

Prochaska, J. O., Norcross, J. C., & Diclemente, C. C. 2006. *Changing for Good*. New York: Collins.

Pulley, M. L., & Gurvis, J. P. 2004. The Ultimate Learning Experience. *Across the Board*, 41(4): 42.

Quatro, S. A., Waldman, D. A., & Galvin, B. M. 2007. Developing holistic leaders: Four domains for leadership development and practice. *Human Resource Management Review*, 17(4): 427-441.

Ready, D. A., & Conger, J. A. 2003. Why leadership development efforts fail. *Sloan Management Review*, 44(3): 83-88.

Reichard, R. J., & Avolio, B. J. 2005. Where are we? The status of leadership intervention research: A metaanalytic summary. In W. L. Gardner, B. J. Avolio, & F. O. Walumbwa (Eds.), *Authentic Leadership and Practice: Origins, Effects, and Development*: 203–226. Oxford, UK: Elsevier.

Riggio, R. E. 2009. Can Leadership Be Developed?, *Psychology Today: Cutting-Edge Leadership*, Vol. 2013.

Rise, J., Sheeran, P., & Kukkelberg, S. 2010. The role of self-identity in the theory of planned behavior: A meta-analysis. *Journal of Applied Social Psychology*, 40(5): 1085-1105.

Rivis, A., Sheeran, P., & Armitage, C. J. 2009. Expanding the affective and normative components of the theory of planned behaviour: A meta-analysis of anticipated affect and moral norms. *Journal of Applied Social Psychology*, 39(12): 2985-3019.

Rogers, R. W. 1975. A protection motivation theory of fear appeals and attidude change. *The Journal of Psychology*, 91(1): 93-114.

Rogers, R. W., & Prentice-Dunn, S. 1997. Protection motivation theory. In D. S. Gochman (Ed.), *Handbook of health behavior research: Personal and social determinants*: 113-132. New York, NY: Plenum Press.

Romanowich, P., Mintz, J., & Lamb, R. J. 2009. The Relationship Between Self-Efficacy and Reductions in Smoking in a Contingency Management Procedure. *Experimental and Clinical Psychopharmacology*, 17(3): 139-145.

Rosenstock, I. M. 1966. Why people use healthy services. *Milbank Memorial Fund Quarterly*, 44: 94-127.

Rosenstock, I. M. 1974. Historical Origins of the Health Belief Model. *Health Education Monographs*, 2(4): 328-335.

Seifert, C. F., & Yukl, G. A. 2010. Effects of repeated multi-source feedback on the influence behavior and effectiveness of managers: A field experiment. *Leadership Quarterly*, 21(5): 856-866.

Shadish, W., Cook, T., & Campbell, D. 2002. *Experimental and quasi- experimental designs for generalized causal inference (2nd ed.)*. Berkeley: Houghton Mifflin Company.

Sheeran, P. 2002. Intention-behavior relations: A conceptual and empirical review. In W. Stroebe, & M. Hewstone (Eds.), *European review of social psychology*, Vol. 12: pp. 1-36. Chichester, UK: Wiley.

Sheeran, P., & Conner, M. 2001. Can the Theory of Planned Behaviour Explain Patterns of Health Behaviour Change? *Health Psychology*, 20(1): 12-19.

Shrout, P. E., & Bolger, N. 2002. Mediation in experimental and neneexperimental studies. New procedures and recommendations. *Psychological Methods*, 7: 422-445.

Silvia, P. J., & Duval, T. S. 2001. Objective self-awareness theory: Recent progress and enduring problems. Personality and Social Psychology Review, 5, 230–241. *Personality and Social Psychology Review, 5, 230–241.*, 5: 230–241.

Skiffington, S., & Zeus, P. 2003. *Behavioral Coaching: How to build sustainable personal and organizational strength*: McGraw-Hill Australia Pty Ltd.

Skiffington, S., & Zeus, P. 2005. *Behavioral Coaching* (Second Edition ed.): McGraw-Hill Australia Pty Ltd.

Skinner, B. F. 1952. *Science and Human Behavior*. New York: Free Press.

Skinner, B. F. 1974. *About behaviorism*. Oxford, England: Knopf.

Smetana, J. G., & Adler, N. E. 1980. Fishbein's Value x Expectancy model: An examination of some assumptions. *Personality and Social Psychology Bulletin*, 6: 89-96.

Smither, J., W., London, M., & Reily, R., R. 2005. Does performance improve following multisource feedback? A theoretical model, meta-analysis, and review of empirical findings. *Personnel Psychology*, 58(1): 33-66.

Sogunro, O. A. 1997. Impact of training on leadership development: Lessons from a leadership training program. *Evaluation Review*, 21(6): 713–737.

Sparks, P., Shepherd, R., Wieringa, N., & Zimmermans, N. 1995. Perceived behavioural control, unrealistic optimism and dietary change: An exploratory study. *Appetite*, 24: 243-255.

Spears, L. C., Lawence, M., & Blanchard, K. 2001. *Focus on leadership: Servant leadership for the 21st century*. (3rd ed.) New York: John Wiley.

Spitzmuller, M., & Ilies, R. 2010. Do they [all] see my true self? Leader's relational authenticity and followers' assessments of transformational leadership. *European Journal of Work and Organizational Psychology*, 19(3): 304-332.

Stogdill, R. M. 1974. *Handbook of leadership: A survey of the literature*. New York: Free Press.

Sutton, S. 2000. Interpreting cros-sectional data on stages of change. *Psychology and Health*, 15: 163-171.

Tannenbaum, S. I., & Yukl, G. A. 1992. Training and development in work organizations. *Annual Review of Psychology*, 43(399-441).

Taylor, P. J., Russ-Eft, D. F., & Chan, D. W. L. 2005. A meta-analytic review of behavior modeling training. *Journal of Applied Psychology*, 90: 692-709.

Taylor, S. S., Fisher, D., & Dufresne, R. L. 2002. THe aesthetics of management storytelling: A key to organisational learning. *Management Learning*, 33: 313-330.

Terry, R. W. 1993. *Authentic Leadership: Courage in Action*. San Francisco, CA: Jossey-Bass.

Thomas, R. J., & Cheese, P. 2005. Leadership: experience is the best teacher. *Strategy & Leadership*, 33(3): 24-29.

Thompson, C., Koon, E., Woodwell, W. H., & Beauvais, J. 2002. Training for the next economy: as ASTD state of the industry report on the trends in employer-provided training in the United States: American Society of Training & Development.

Tice, D. M., & Wallace, H. M. 2003. The reflected self: Creating yourself as (you think) others see you. In M. R. Leary, & J. P. Tangney (Eds.), *Handbook of self and identity*: 91-105. New York: Guilford Press.

Tourangeau, A. E. 2004. Evaluation Study of a Leaderhip Development Intervention for Nurses, *Final Report to the Change Foundation*. Ontario, Canada.

Training. 2012. Training industry report, *Training*.

Uhl-Bien, M. 2003a. Relationship development as a key ingredient of leadership development. In S. E. Murphy, & R. E. Riggio (Eds.), *The Future of Leadership Development*. Mahwah, NJ: Lawrence Erlbaum.

Uhl-Bien, M. 2003b. Relationship develpment as a key ingredient of leadership development. In S. E. Murphy, & R. E. Riggio (Eds.), *The Future of Leadership Develpment*: pp. 129-148. Mahwah, NJ: Lawrence Erlbaum.

Vroom, V. H. 1968. *Work and motivation*. New York; London: Wiley.

Vroom, V. H., & Jago, A. G. 2007. The Role of the Situation in Leadership. *American Psychologist*, 62(1): 17-24.

Walumbwa, F. O., Avolio, B. J., Gardner, W. L., Wernsing, T. S., & Peterson, S. J. 2008. Authentic leadership: Development and validation of a theory-based measure. *Journal of Management*, 34(1): 89-126.

Webb, T. L., & Sheeran, P. 2006. Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin*, 132(2): 249-268.

Weiss, C. H. 1995. Nothing as Practical as Good Theory: Exploring Theory-Based Evaluation for Comprehensive Community Initiatives for Children and Families. In J. P. Connell, A. C. Kubisch, L. B. Schorr, & C. H. Weiss (Eds.), *New Approaches to Evaluating Community Initiatives: Concepts, Methods, and Contexts*, Vol. 1. Washington, D.C.: Aspen Institute.

White, K. M., & Hyde, M. K. 2012. The Role of Self-Perceptions in the Prediction of Household Recycling Behavior in Australia. *Environment & Behavior*, 44(6): 785-799.

Wicker, A. W. 1969. Attitudes versus actions: The relationship of verbal and overt behavioral responses to attitude objects. *Journal of Social Issues*, 25: 41-47.

Woodall, J. 2000. Corporate support for work-based management development. *Human Resource Management*, 10(1): 18-31.

Wu, A. 2008. Understanding and Using Mediators and Moderators. *Social Indicators Research*, 87(3): 367-392.

Yukl, G. 2006. Leadership In Organizations. *Pearson Prentice Hall* (Sixth edition).

Yukl, G. A. 1989. Managerial Leadership: A review of theory and research. *Journal of Management*, 15(2): 251-289.

Yulk, G., Gordon, A., & Taylor, T. 2002. A Hierarchical Taxonomy of Leadership Behavior: Integrating a Half Century of Behaviour Research. *Journal of Leadership and Organizational Studies*, 9(1): 15-32.

Zaccaro, S. J. 2007. Trait-based perspectives of Leadership,. *American Psychologist*, Vol 62 (1): pp. 6 - 16.

Zaccaro, S. J., & Horn, Z. 2003. Leadership theory and practice: Fostering an effective symbiosis. Leadership Quarterly. *Leadership Quarterly*, 14(6): 769-806.

Zimmerman, R. S., & Vernberg, D. 1994. Models of preventive health behavior: Comparison, critique, and meta-analysis. *Advances in Medical Sociology*, 4: 45-67.

VII. APPENDIXES

Appendix A

Cover letters

EDF - self

Dear participant,

We're conducting an evaluation of the TOB programme in order to improve its impact in the development of authentic leadership at EDF.

I would deeply appreciate your participation in answering the following questionnaire which should take you about 20 minutes to respond. Your participation is entirely voluntary. All answers are anonymous and will be treated confidentially.

One part of this survey needs to be answered by three other people (raters). Ideally, this would be your direct manager and two people from your team that know you well. Please reply back to this communication with their email addresses.

To answer the survey, follow the link below. Please complete it within two weeks of receiving this communication and prior to starting the programme. One month after the programme is finished in 2011 we will send you the same questionnaire again to evaluate the differences in your answers.

[%%Survey Link%%]

If you have any question please reply to this email.
Many thanks for your participation and warm regards.

EDF Corporate University

Dear colleague,

We're conducting an evaluation of the TOB programme in order to improve its impact in the development of leadership at EDF.

[Participant name] has identified you as one on the people that know him/her. We would deeply appreciate your participation in being a rater and answering the following questionnaire which should take you less than 10 minutes. Your participation is entirely voluntary. All answers are anonymous and will be treated confidentially.

To answer the survey, follow the link below. Please complete it within one week of receiving this communication. One month after the programme is finished in 2011, we will send you the same questionnaire to evaluate the differences in your answers.

[%%Survey Link%%]

If you have any question please send a message to Enric Bernal, a doctorate student that is managing this process for EDF CU: email@email.com. Replies to this email are not received.

Many thanks for your participation and warm regards,
EDF Corporate University

Dear Dell Leadership Programme Participant,

I'm pleased to tell you that you have been selected as a (course name) participant to participate in a learning evaluation program.

As part of the Dell Leadership Imperative initiative and People Strategy, we want to make sure that our leadership development programme effectively enhances our People Manager Leadership Capabilities. Our objective is to look at the impact of our training on your leadership behaviours.

The process for this evaluation will be the following:
•For YOU, both a pre- and post-course self assessment (post is 1 month afterwards)
•For YOUR NOMINATED RATERS (3), both a pre- and post-course assessment. The raters should be your Direct Manager and two of your Direct Reports who know you well

Each time, your questionnaires should take you less than 20 minutes to complete, and less than 10 minutes for your raters.

Your participation is entirely voluntary. All answers are anonymous and will be treated confidentially. However, as a Dell Leader, we really want to involve you in this programme.

If you agree to participate, please reply back to this email with your 3 raters' e-mail addresses.
Then, please directly answer the survey, following the link below. Please complete it within two weeks of receiving this communication and prior to starting the programme. One month after the programme is finished, we will send you the same questionnaire to complete once again.

[%%Survey Link%%]

Please do not hesitate to contact me if you have any questions. We sincerely value your inputs, and deeply appreciate your support of our evaluation programme.

Yours sincerely,
John Smith
Head, EMEA Talent Management

Dear Dell Colleague,

As part of the Dell Leadership Imperative initiative and our People Strategy, we want to make sure that our training programs effectively enhance our People Manager Leadership Capabilities.

[Participant name], who is enrolled for our course name training, has identified you as one of the people that know him/her well. We would deeply appreciate your participation by rating him on a leadership behaviour survey. It should take you less than 10 minutes to complete. Your participation is entirely voluntary. All answers are anonymous and will be treated confidentially.

To answer the survey, follow the link below. Please complete it within one week of receiving this communication. One month after the programme is finished, we will send you the same questionnaire to complete once again.

[%%Survey Link%%]

Please do not hesitate to contact me if you have any questions. Many thanks for your participation.

Yours sincerely,
John Smith
Head, EMEA Talent Management

Dear EMBA participant,

EADA is conducting an evaluation of their Executive MBA programme in order to improve its impact in the development of authentic leadership.

We would deeply appreciate your participation in answering the following questionnaire which should take you about 20 minutes to respond. Your participation is entirely voluntary. All answers are anonymous and will be treated confidentially.

A small part of this survey needs to be answered by 3 other people (raters). Ideally, this would be your direct manager and two people from your team or colleagues that know you well.

Please select your 3 raters and let me know their email addresses so that I can send them the questionnaire: email@email.com (please do not reply to this address).

To answer the survey, follow the link below. Please complete it within two weeks of receiving this communication and prior to starting the programme. One month after the programme is finished in 2011, we will send you the same questionnaire to complete once again.

[%%Survey Link%%]

Please do not hesitate to contact us if you have any questions. We sincerely value your inputs, and deeply appreciate your support of our programme evaluation.

Yours sincerely,

The EMBA Team
EADA

Dear colleague,

EADA is conducting an evaluation of their Executive MBA programme in order to improve its impact in the development of authentic leadership.

[Participant name], who is enrolled in our EMBA, has identified you as one on the people that know him/her. Your participation is voluntary, but we would deeply appreciate your participation in being a rater and answering the following questionnaire which should take you less than 10 minutes. All answers are anonymous and will be treated confidentially.

To answer the survey, follow the link below. Please complete it within one week of receiving this communication. One month after the programme is finished in 2011,we will send you the same questionnaire to evaluate the differences in your answers.

[%%Survey Link%%]

If you have any question please let me know
Please do not hesitate to contact me if you have any questions at email@email.com (please do not reply to this email). We sincerely value your inputs, and deeply appreciate your support of our programme evaluation.

Yours sincerely,

Enric Bernal
EADA
email@email.com

Dear X,

John Smith and I are working with Enric Bernal (who you do not know) to develop a tool to measure the impact on you and fellow participants of undertaking the GMP. We want initially to conduct a comparative test, and for this we would like to ask you to take the time if possible to participate in a very short survey. The survey is attached, and will be sent to you twice, once before and once after P3. We will then return to you the aggregated results. If you could do this for us we would be very grateful. To participate in the survey, which will not take very long, you go to this link:

(**http://www.surveygizmo.com/s/803070/gmp-evaluation-self-cedep-**).

In advance, thank you all,

John2

Authentic Leadership Questionnaire (ALQ Version 1.0 **Self**)

Bruce J. Avolio, Ph.D.

Gallup Leadership Institute

Name: _____ Date: _____

Organization ID #: _____ Person ID #: _____

Instructions: The following survey items refer to your leadership style, as you perceive it. **Please judge how frequently each statement fits your leadership style using the following scale:**

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
0	1	2	3	4

As a leader I…

1. say exactly what I mean. .... 0　1　2　3　4
2. admit mistakes when they are made. .... 0　1　2　3　4
3. encourage everyone to speak their mind. .... 0　1　2　3　4
4. tell you the hard truth. .... 0　1　2　3　4
5. display emotions exactly in line with feelings. .... 0　1　2　3　4
6. demonstrate beliefs that are consistent with actions. .... 0　1　2　3　4
7. make decisions based on my core values. .... 0　1　2　3　4
8. ask you to take positions that support your core values. .... 0　1　2　3　4
9. make difficult decisions based on high standards of
   ethical conduct. .... 0　1　2　3　4
10. solicit views that challenge my deeply held positions. .... 0　1　2　3　4
11. analyze relevant data before coming to a decision. .... 0　1　2　3　4
12. listen carefully to different points of view before coming
    to conclusions. .... 0　1　2　3　4
13. seek feedback to improve interactions with others. .... 0　1　2　3　4
14. accurately describe how others view my capabilities. .... 0　1　2　3　4
15. know when it is time to reevaluate my position on
    important issues. .... 0　1　2　3　4
16. show I understand how specific actions impact others. .... 0　1　2　3　4

Theory of Planned Behaviour Questionnaire
Before CFA validation
Enric Bernal (2010)

Save and continue survey later

TPB Questionnaire Validation - Leadership Development

Page One
What is this survey?

This survey is not a test and there are no right or wrong answers. We want to know your personal views on the issues raised in the survey. The survey consists of questions that ask you about your behavioural intentions towards authentic leadership.

Who will see my answers?

The information you provide is anonymous and completely confidential. No one will see your answers. Your answers will provide data for the doctoral thesis of Enric Bernal, and aggregated results may be published in academic journals. However, individuals, teams and organisations will not be identifiable.

Instructions:

The following survey items refer to your behavioural intentions towards authentic leadership, which is decomposed in three sections: transparency behaviour, ethical/moral conduct, and balanced processing in decision making.

Please select which one of the seven possible answers you think that best fits your behaviour in a **work context** (as opposed to in your private life). Please read each question carefully and give your immediate response by ticking the option which best matches your personal view.

If you require any further information, please do not hesitate to contact Enric Bernal at *bernale@aston.ac.uk* .

Transparency Behaviour:

Is the degree that one reinforces a level of openness with others that provides them with an opportunity to be forthcoming with their ideas, challenges and opinions.
1. Transparency is necessary to be a good leader *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

2. My professional environment promotes transparency behaviour *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

3. I make every effort possible to be transparent *

Strongly	Mostly	Slightly		Slightly		Strongly

disagree	disagree	disagree	Neither	agree	Mostly agree	agree
○	○	○	○	○	○	○

4. Whether or not I'm transparent with others depends entirely on me *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

5. For me to be transparent is *

Extremely unimportant	Quite unimportant	Slightly unimportant	Neither	Slightly important	Quite important	Extremely important
○	○	○	○	○	○	○

6. For me to be transparent is *

Extremely difficult	Quite difficult	Slightly difficult	Neither	Slightly easy	Quite easy	Extremely easy
○	○	○	○	○	○	○

7. I intend to be as transparent as I can with others *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

8. Most people that are important to me think that transparency is good *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

Ethical / Moral:

Is the degree that one sets a high standard for moral and ethical conduct.

9. For me to be ethical / moral is *

Extremely difficult	Quite difficult	Slightly difficult	Neither	Slightly easy	Quite easy	Extremely easy
○	○	○	○	○	○	○

10. For me to be ethical / moral is *

Extremely unimportant	Quite unimportant	Slightly unimportant	Neither	Slightly important	Quite important	Extremely important
○	○	○	○	○	○	○

11. Ethical / moral behaviour is promoted in my professional environment *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

12. I intend to be as ethical / moral as I can in all my interactions with others *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree

○   ○   ○   ○   ○   ○   ○

22. I intend to be as balanced in my decision processing as I can *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

23. Balance processing behaviour is promoted in my professional environment *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

24. For me to express a balanced processing behaviour is *

Extremely unimportant	Quite unimportant	Slightly unimportant	Neither	Slightly important	Quite important	Extremely important
○	○	○	○	○	○	○

Finally, we would like to ask you a few questions on demographics. They will be reported only as aggregate statistics.

Please select your answer from the drop down menu

25. What is your gender?
[-- Please Select -- ▼]

26. What is your nationality?
[-- Please Select -- ▼]

27. What is your birth date?
[-- Please Select -- ▼]

28. What is your professional experience
[-- Please Select -- ▼]

(Finished? Submit your Survey)

50%

[Take a look under the hood]

19. I make every effort possible to express a balance processing behaviour *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

20. Whether or not I show balance processing is completely up to me *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

21. Most people that are important to me think that having a balanced processing behaviour is good *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree

Appendix D
Full questionnaire (ALD, TPBQ, PCC)
Final questionnaire sent Before-After
Enric Bernal (2010)

Extremely difficult	Quite difficult	Slightly difficult	Neither	Slightly easy	Quite easy	Extremely easy
○	○	○	○	○	○	○

Ethical / Moral:

Is the degree that one sets a high standard for moral and ethical conduct.

5. Most people that are important to me think that being ethical / moral is good *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

6. Whether or not I'm ethical / moral with others depends entirely on me *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

7. I make every effort possible to be ethical / moral *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

8. Ethical / moral behaviour is necessary to be a good leader *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

Balanced Processing:

Is the degree that one solicits sufficient opinions and viewpoints prior to making important decisions.

9. For me to have a balanced processing behaviour is *

Extremely difficult	Quite difficult	Slightly difficult	Neither	Slightly easy	Quite easy	Extremely easy
○	○	○	○	○	○	○

10. Balanced processing is necessary to be a good leader *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

11. I make every effort possible to express a balance processing behaviour *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

12. Most people that are important to me think that having a balanced processing behaviour is good *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree

○   ○   ○   ○   ○   ○   ○

13. I intend to be as balanced in my decision processing as I can *

Strongly disagree	Mostly disagree	Slightly disagree	Neither	Slightly agree	Mostly agree	Strongly agree
○	○	○	○	○	○	○

Part II:

The following survey items refer to your leadership style, as you perceive it. Please judge how frequently each statement fits your leadership style.

14. As a leader I say exactly what I mean *

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
○	○	○	○	○

15. As a leader I admit mistakes when they are made *

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
○	○	○	○	○

16. As a leader I encourage everyone to speak their mind *

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
○	○	○	○	○

17. As a leader I tell you the hard truth *

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
○	○	○	○	○

18. As a leader I display emotions exactly in line with feelings *

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
○	○	○	○	○

19. As a leader I demonstrate beliefs that are consistent with actions *

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
○	○	○	○	○

20. As a leader I make decisions based on my core values *

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always
○	○	○	○	○

21. As a leader I ask you to take positions that support your core values *

Not at all	Once in a while	Sometimes	Fairly often	Frequently, if not always

181

○   ○   ○   ○   ○

22. As a leader I make difficult decisions based on high standards of ethical conduct
*

			Frequently, if not
Not at all	Once in a while	Sometimes	Fairly often	always
○	○	○	○	○

23. As a leader I solicit views that challenge my deeply held positions
*

			Frequently, if not
Not at all	Once in a while	Sometimes	Fairly often	always
○	○	○	○	○

24. As a leader I analyse relevant data before coming to a decision
*

			Frequently, if not
Not at all	Once in a while	Sometimes	Fairly often	always
○	○	○	○	○

25. As a leader I listen carefully to different points of view before coming to conclusions
*

			Frequently, if not
Not at all	Once in a while	Sometimes	Fairly often	always
○	○	○	○	○

26. As a leader I seek feedback to improve interactions with others
*

			Frequently, if not
Not at all	Once in a while	Sometimes	Fairly often	always
○	○	○	○	○

27. As a leader I accurately describe how others view my capabilities
*

			Frequently, if not
Not at all	Once in a while	Sometimes	Fairly often	always
○	○	○	○	○

28. As a leader I know when it is time to reevaluate my position on important issues
*

			Frequently, if not
Not at all	Once in a while	Sometimes	Fairly often	always
○	○	○	○	○

29. As a leader I show I understand how specific actions impact others
*

			Frequently, if not
Not at all	Once in a while	Sometimes	Fairly often	always
○	○	○	○	○

Part III:

The following survey items refer to your perceptions about the leadership development programme.
30. I am hoping this leadership development programme will help me better understand myself *

Strongly disagree	Disagree	Neither	Agree	Strongly agree
○	○	○	○	○

31. Maybe this leadership development programme will be able to help me become a better leader *

Strongly disagree	Disagree	Neither	Agree	Strongly agree
○	○	○	○	○

32. I hope that I get some advice from this leadership development programme *

Strongly disagree	Disagree	Neither	Agree	Strongly agree
○	○	○	○	○

Finally, we would like to ask you a few questions on demographics. They will be reported only as aggregate statistics.

Please select your answer from the drop down menu

33. What is your gender?
-- Please Select --

34. What is your nationality?
-- Please Select --

35. What is your birth date?
-- Please Select --

36. What is your professional experience
-- Please Select --

Finished? Submit your Survey

50%

Take a look under the hood
Online Surveys powered by SurveyGizmo

Appendix E

Correlation matrix within Authentic Leadership Development (ALD) theory

		Time 1					
		Authentic Leadership Behaviour	Self-Awareness	Self-Regulation	Transparency Behaviour	Ethical /Moral	Balanced Processing
Time 2	Authentic Leadership Behaviour		.85**	.96**	.77**	.79**	.72**
	Self-Awareness	.76**		.66**	.49**	.55**	.54**
	Self-Regulation	.95**	.51**		.82**	.82**	.73**
	Transparency Behaviour	.76**	.33	.84**		.49**	-37**
	Ethical/Moral	.77**	.41**	.80**	.49**		.46**
	Balanced Processing	.66**	.47**	.64**	.32**	.32**	

Correlation matrix of ALD variables within Time 1 (right of the diagonal) and within Time 2 (left of the diagonal). *Note*: Correlation done with treatment responses only