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The relationship between attributional style and information technology project perception

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The Relationship Between Attributional Style and Information Technology Project Perception

A Dissertation Submitted in Partial Fulfilment of the Requirements for the Award of Doctor of Business Administration

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USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

Abstract

The purpose of this research is to investigate the relationship between attributional style and Information Technology (IT) project perception at varying job responsibility levels. To achieve this thirty participants were recruited from a large government department in the three distinct job responsibility levels of support worker (i.e. individual who undertakes activities under general direction), line manager (i.e. individual who undertakes activities under limited direction and typically performs role of team leader) and executive manager (i.e. individual who undertakes activities that involve a high a level of management skill under broad direction) and interviewed using a modified Work Attributional Style Questionnaire (WASQ) with emergent themes subsequently explored through four focus groups.

Based on the research findings all job responsibility levels tend to exhibit an optimistic attributional style that characterises positive work adjustment and self-esteem. However, the attribution of failure to causes that will persist in future projects by all job responsibility levels alongside the attribution of failure to causes that have impacts beyond the project by line and executive managers have the potential to undermine this tendency to exhibit an optimistic attributional style. Reasons for the attribution of failure to causes that have impacts beyond the project include the adverse impact on perceived professionalism by peers following failure, continued inability to influence stakeholders and/or management, strategic impact of the project failure and the daunting complexity of the social and technical challenges at the macro level

Whilst the tendency to exhibit an optimistic attributional style by all job responsibility levels is indicative of positive work adjustment and self-esteem, practitioners should be cognisant that individuals exhibiting an optimistic attributional style are less likely to take responsibility for IT project failure (i.e. attribute failure to situational and uncontrollable causes). This has the potential to adversely impact organisational learning. To increase the likelihood of individuals taking responsibility for IT project failure practitioners should seek to encourage individuals to freely admit to faults and acknowledge errors whilst seeking to preserve their self-worth.

Practitioners should also seek to undertake and support initiatives that enable tacit knowledge transfer to occur (e.g. involvement in strategic dialogue, committing resources, establishing supporting systems). The

inability to transfer tacit knowledge gained through a project was perceived by line and executive managers as a significant contributing factor to project failures in this research (i.e. attribution of failure to causes that will persist).

Lastly, practitioners should seek to undertake initiatives such as coaching, contemplative practices and establishing a participative and supportive work environment to reduce the tendency of line managers to attribute failure to their inability to control the cause of failure and also to enable them to better cope with potentially competing operational and strategic demands. Both support workers and executive managers were significantly less likely than line managers to attribute failure to their inability to control the cause of failure.

Keywords: attribution theory, attributional style, work attributional style questionnaire, Information technology and project management.

Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

- Incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;
- Contain any material previously published or written by another person except where due reference is made in the text; or
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1 December 2008

Publications and Conferences

Kordt, E. & Standing, C. (2007), *Always the Optimist*, Presented at the Conference on Information Management and Internet Research, Perth, WA.

Kordt, E. (2008), *The Impact of Project Success and Failure on IT Professionals,* Presented at the Australian Computer Society Annual Conference, Canberra, ACT.

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Chapter 1: Introduction

In this chapter:

"Australia's most ambitious e-government project promised to set a world benchmark in cargo management, but instead the general perception of its launch on October 12 last year was of thousands of tons of cargo stranded at wharves and airports. Manufacturers and merchants could see revenues dissolving and Christmas trade diving into losses as a media-fuelled firestorm of flak was directed at Australian Customs and its CIO... Politicians of various hues from local to federal joined the outcry, hurling invective at Customs tumbrel as it rumbled onwards... anyone with the slightest interest in trade processes – joined in."

\- *Peter Davidson (2006, p. 4)*

In this chapter, I will provide an overview of this thesis. The chapter begins by examining the social context of Information Technology (IT) projects. Next, the chapter examines the significance and implications of the research for practitioners and researchers. Finally, the chapter presents the research questions that form the basis for this research.

Background

Researchers estimate that 20 to 30 percent of all IT projects are total failures (i.e. abandoned) (Goldfinch, 2007, p. 917). In addition, researchers also estimate that 30 to 60 percent of all IT projects are partial failures (e.g. cost overruns, time overruns) (Goldfinch, 2007, p. 917). With this disproportionately high rate of failure it is unsurprising that IT project failure is frequently cited as the primary challenge facing the IT profession (Standing, Guilfoyle, Lin, & Love, 2006, p. 1148).

Despite the high rate of IT project failure there is limited research on the emotional and behavioural impact of IT project success and failure on individuals at varying job responsibility levels (i.e. support worker, line manager and executive manager). This is despite the increased recognition given to social psychology in IT research (Venkatesh, Morris, Davis, & Davis, 2003, p. 426) and evidence indicating approximately 10 percent of IT professionals exhibit moderate or severe depressive symptoms (Priest, 2007) and that IT professionals frequently endure criticisms and accusations of obfuscations and cover-ups from failed projects hitting media headlines (Connolly, 2006, p. 6; Merrett, 2007, p. 26).

Understanding the emotional and behavioural impact of IT project success and failure on individuals is however a challenging proposition due to the dynamic and complex social and technical environment of projects (Kendra & Taplin, 2004, p. 33). The social environment of projects is recognised as an important differentiator between projects and a moderator of individual emotions and behaviour (Goldfinch, 2007; Kappelman, McKeeman, & Zhang, 2006, p. 32; Wallace, Keil, & Rai, 2004, p. 295).

Purpose

The purpose of this research is to understand the emotional and behavioural impact of IT project success and failure on individuals at varying job responsibility levels whilst taking into account the social environment. To achieve this outcome the research will use an individual differences variable termed attributional style, rooted in social psychology and widely adopted by business researchers to understand differences in individual emotions and behaviour (Cort, Griffith, & White, 2007, p. 10).

An individual's attributional style is indicative of the habitual way in which individuals explain their own success and failure based on an event (Zullow, Oettingen, Peterson, & Seligman, 1988, p. 673). Attributional style is capable of revealing whether an individual will tend to experience job satisfaction, performance and success in an occupational environment (optimistic attributional style) or have a tendency to be less productive and less persistent over the long term (depressive attributional style) (Ashforth & Fugate, 2006, p. 13; Furnham et al., 1994, p. 1509).

Significance

Understanding the attributional styles exhibited by individuals in the IT project domain can make a significant contribution to our knowledge of project management given the limited research into individual emotions and behaviour within this domain (Standing et al., 2006, p. 1149). In particular, attributional style provides the opportunity to identify the important causal dimensions that affect individual emotions that lead to behaviour consistent with mastery of the information technology project domain (e.g. ability to effectively apply knowledge, skills, tools and techniques to IT projects) (Duncan, 1996, p. 6; Weiner, 1985, p. 548). For instance, IT support workers may attribute failure to external causes as a means of protecting their self-worth at the expense of being a potential barrier to learning (Anderson & Weiner, 1992, p. 301; Duval & Silvia, 2002, p. 49; Lyytinen & Robey, 1999, p. 97).

Implications for Practitioners

The attributional style and underlying reasons for attributions by support workers, line managers and executive managers have the potential to benefit practitioners primarily through differences that may be exposed by comparing job responsibility levels (Weiner, 1985, p. 548). In particular, differences related to experience that are typically associated with job responsibility levels. For instance, increased awareness of external project influences that can lead to continual project failure within organisations may be more pronounced in behaviour at the executive management level. The ability to better understand these differences is potentially capable of enabling practitioners to better understand project participants at different job responsibility levels whilst highlighting areas for potential individual, collective or organisational improvement.

The anticipated benefits for practitioners from this research include:

Identifying Barriers to Learning

Individuals who attribute failure to external causes are the least likely to admit to faults and acknowledge errors. This attributional tendency can seriously impact learning and over time lead to organisations accepting poor performance (Duval & Silvia, 2002, p. 49; Lyytinen & Robey, 1999, pp. 85,97) whilst representing a significant risk to future IT projects. For instance, the inability to learn from causes of past failure increases the likelihood of failure in subsequent projects (Reich, 2007, p. 10).

This research offers the potential to identify any job responsibility levels most at risk of failing to learn due to these external attributions. These job responsibility levels can be targeted through mentoring, feedback and a supportive organisational context to provide the antecedent conditions to support learning and enable them to accept greater responsibility (Cannon & Edmondson, 2001, p. 169).

Identifying Responsibility Levels with Lower Self-Esteem

Individuals who attribute success to internal causes and failure to external causes are the most likely to rapidly recover from project failure and have positive health outcomes (Stinson et al., 2008, p. 413). In contrast, individuals who attribute success to external causes and failure to internal causes are most likely to experience depressive tendencies with many consequences such as reluctance to participate in projects they once enjoyed. IT professionals with depressive tendencies are likely to contribute to the six million plus workdays lost annually in Australia (Beaton Consulting, 2007, p. 142).

This research offers the potential to identify any job responsibility levels most at risk of lowered self-esteem and depressive tendencies. These job responsibility levels can be targeted through appropriate support and care initiatives to help bolster self esteem and thereby improve the ability of organisations to retain skills which are currently in short supply (Centre for Innovative Industry Economic Research Inc, 2008, p. 2).

Implications for Researchers

The body of knowledge on attribution theory in information technology research is limited. This research seeks to extend this body of knowledge by providing an insight into attributions made by support workers, line managers and executive managers that can be used to understand why

some job responsibility levels are more optimistic or pessimistic than others. As such, the main research implications from this research are:

Insight into Reasons for Attributional Tendencies

The qualitative approach employed in this research is capable of providing researchers an invaluable insight into reasons for attributional tendencies (i.e. pessimistic or optimistic) and differences between job responsibility levels. For instance, the self-serving attributional bias suggests that individuals will optimistically attribute success to themselves whilst attributing failure to other people or circumstances in order to protect self-worth (Hastorf, Schneider, & Polefka, 1970, p. 73). In the context of this research the interviews and focus groups should identify which job responsibility levels are most and least likely to exhibit this optimistic self-serving attributional bias alongside potential reasons and opportunities (i.e. initiatives that can be further researched to promote a higher level of optimism in pessimistic individuals who may be more vulnerable to depression) (Mezulis, Abramson, Hyde, & Hankin, 2004, p. 711).

Insight into the Work Attributional Style Questionnaire

The application of the Work Attributional Style Questionnaire (WASQ) by Ashforth & Fugate (2006) as the research instrument for the interviews will provide researchers with significant insight into the validity of this tool for determining attributional style. In particular, prior quantitative research by Standing, Guilfoyle, Lin & Love (2006) using an alternate instrument (i.e. Occupational Attributional Style Questionnaire) in the same domain will be compared. This research is particularly significant to researchers as it represents a cross instrument comparison using the WASQ and OASQ (Ashforth & Fugate, 2006, pp. 25-26).

Research Questions

The following two research questions will be addressed in this research in order to achieve the stated purpose:

- Does attributional style vary as an individual's level of seniority changes for a successful and failed Information Technology project?
- Why does attributional style vary as an individual's level of seniority changes for a successful and failed Information Technology project?

The two research questions investigate the differences in attributional style between job responsibility levels and identify differences in causal dimensions that contribute to mastery of project management.

Structure

This thesis is structured around the following six major parts:

- **Introduction** – establishes the context and problem being addressed by the research. To achieve this the introduction describes the background to the research, purpose of the research, significance of the research, anticipated benefits for practitioners and researchers and the research question;
- **Literature Review** – examines and connects prior research stemming from attribution and attributional theory (emphasising attributional style) with IT project management literature in the context of the research questions;
- **Research Methodology** – describes the critical research paradigm that will be used to guide this qualitative research through a case study approach using interviews and focus groups in conjunction with a modified Work Attributional Style Questionnaire (WASQ) instrument;
- **Research Findings (Interviews)** – presents and discusses the analysed research findings for the interviews;
- **Research Findings (Focus Groups)** – presents and discusses the analysed research findings for the focus groups based on emergent interview themes; and
- **Discussion and Conclusion** – discusses the research findings in the context of the initial research questions. Prior to presenting several concluding remarks this part also discusses the limitations evident in the research, implications for practitioners and researchers alongside future research opportunities.

The structure discussed above is illustrated in Figure 1.

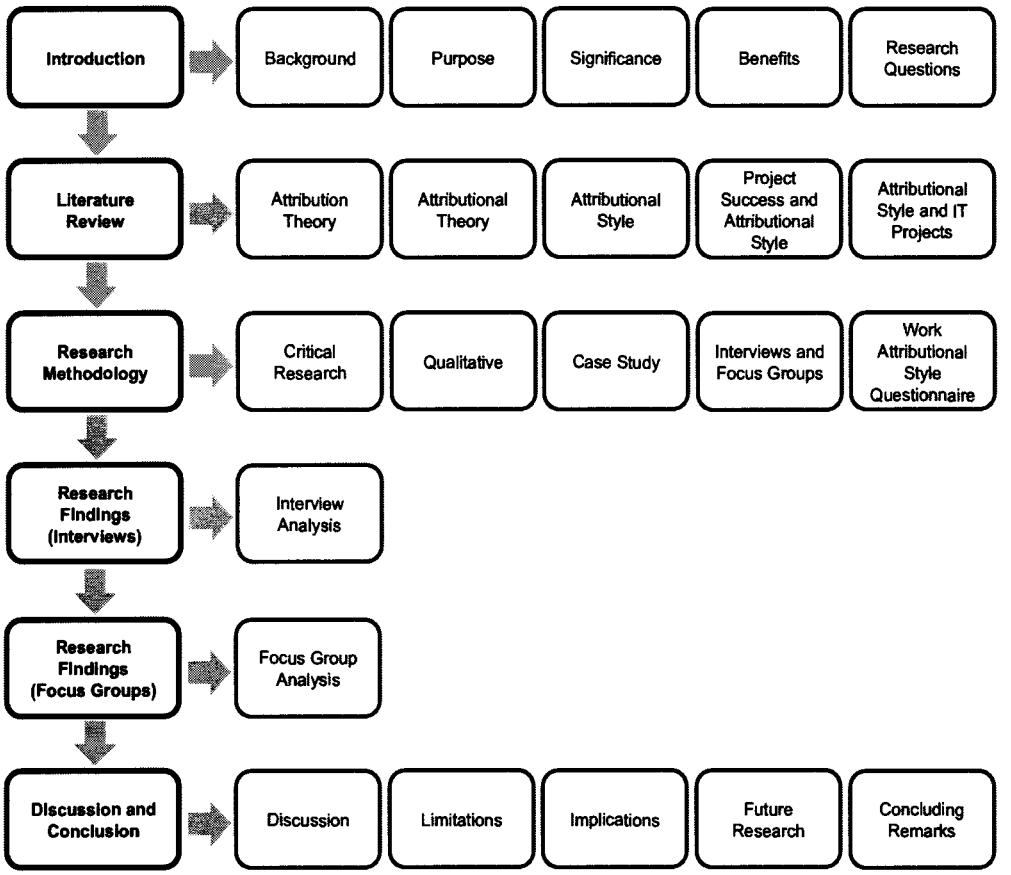

Figure 1: Thesis structure

The structure of this thesis is based on a traditional thesis format of setting out the problem, a way of solving that problem, the solution and reflections on that solution (University of Illinois, 2008).

Chapter 2: Literature Review

In this chapter:

"The heart of the theory consists of an identification of the dimensions of causality and the relation of these underlying properties of causes to psychological consequences"

- Bernard Weiner (1979, p. 3)

In this chapter, I will provide an overview of the literature that forms the basis for this research. The chapter begins by briefly examining the theory upon which attributional theory and attributional style is based. Next, the chapter examines attributional theory and attributional style. Finally, the chapter examines the relationship between project success and attributional style before concluding with a summary of the literature review.

Attribution Theory

Projects represent a temporary environment characterised by events in which individuals produce unique products or services within a specified time frame and resource allocation (Duncan, 1996, p. 4; Office of Government Commerce, 2006). In the context of IT projects, these events are increasingly likely to be high speed, high change and high uncertainty (Thamhain, 2004, p. 35). Without effective project management these events are increasingly likely to contribute to a failed project outcome (Tesch, Kloppenborg, & Frolick, 2007, p. 61). The failed project outcome is likely to interact with the individual's disposition and influence behaviour (Zubin & Spring, 1977, p. 105).

In order to understand how a failed project outcome is likely to interact with an individual's disposition and influence behaviour, the attribution theory based around attributions is authoritative. Weary, Stanley & Harvey (1989) define an attribution as "an inference about why an event occurred or about an individuals dispositions" (p. 3). Attribution theory is concerned with the processes individuals use to develop these attributions and its relation to behaviour and emotions (Anderson & Weiner, 1992, pp. 295-296; Passer, Kelley, & Michela, 1978, p. 951). The two primary processes identified by Kelley & Michela (1980) during a review of attributional literature being the (p. 459):

- **Attribution Process** – the determinants of attributions for events that can be employed in a variety of domains; and
- **Attributional Process** – the consequences of attributions or attributional tendencies on an individual's behaviour in a specific domain.

The inter-relationship of these two processes is illustrated in Figure 2. The differentiation of these two processes is critical in understanding this non-unified theory (Anderson & Weiner, 1992, p. 295).

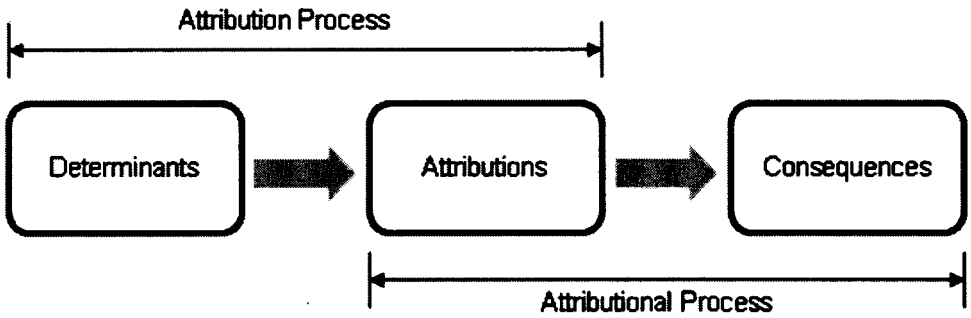

Figure 2: Attribution theory processes (Based on Kelley & Michela, 1980 p. 459)

In the context of this research we are primarily concerned with the attributional process that encompasses the individual differences variable of attributional style. The emphasis of the literature review will therefore be the attributional process.

Origins and Development

The origins of attributional theory can be traced to several defining pieces of work that also influenced the development of attribution theory. The most notable pieces of work in the context of this research are Fritz Heider's (1958) naive psychology and Julian Rotter's (1966) social learning theory.

Naive Psychology

Heider (1958) through his seminal work on naive psychology laid the foundation for modern attribution theory (Anderson & Weiner, 1992, p. 295). Naive psychology described by Heider (1958) is "the principles we use to build up our picture of the social environment and which guides our reactions to it" (p. 5). Heider (1958) suggests that individuals achieve this by being a naive scientist.

Heider's (1958) work recognised that "many of the principles underlying social perceptions have parallels in the field of non-social or thing perception" (p. 21). Whilst recognising these parallels, Heider (1958) also recognised that individual perceptions are more complex than object perceptions "due to the manifold of observational data (e.g. beliefs, desires, emotions, traits) and causes to which this data could be attributed" (Malle, 2004, p. 7).

Heider (1958) postulated that when individual perceptions are formed individuals will base their judgement on either personal causality (i.e. intentional human behaviour to purposively achieve a goal) or impersonal causality (i.e. physical events or unintentional human behaviour) (p. 100).

Subsequent research into Heider's (1958) work argued that personal causality and impersonal causality should instead be termed internal (e.g. ability, effort) and external (e.g. task difficulty) causes of behaviour respectively (Malle, 2004, p. 8). As a consequence, modern attribution theory associates internal and external causes with Heider (1958). However, theorists such as Malle (2004) challenged this arguing that they do not adequately reflect intent (e.g. internal causes can reflect both intentional and unintentional causes – unlike personal causality which is purely internal) and therefore can lead to a situation where a major element of social cognition is excluded from research (Malle, 2004, p. 9).

Social Learning Theory

Rotters (1966) locus of control formulated within Rotter's (1954) social learning theory of personality formed a focal point for researchers (Weiner, 1985, p. 551) and heavily influenced the development of attribution theory. The locus of control is based on whether an individual perceives they can influence their own destiny (Rotter, 1966, p. 263).

Individuals able to influence their own destiny through skill will exhibit an internal locus of control whilst those unable to influence their own destiny due to luck, chance, fate, powerful others or unpredictability will exhibit an external locus of control (Rotter, 1966, p. 1). Rotters (1966) research indicated that individuals who exhibit an internal locus of control place a greater emphasis on skill or achievement and generally are more concerned with their ability than those who exhibit an external locus of control (Rotter, 1966, p. 25).

Whilst social learning theory is widely accepted, theorists such as Levenson (1981) have argued that Rotters (1966) external locus of control actually consists of two dimensions, powerful others and perceptions of chance (Levenson, 1981, p. 15).

Attributional Theory

Attributional theory as posited by Bernard Weiner through several iterations represents one of the most comprehensive theoretical models about the influence of attributions on behaviour. Based on the work of Heider (1958) and Rotter (1966), Weiner et al (1972) based the original attributional model of achievement motivation around the assumption that "individuals allocate the causes of success and failure to four elements: ability, effort, task difficultly and luck" (Weiner et al., 1972, p. 240). These causal

elements previously identified by Heider (1958) and linked to the two causal dimensions of locus of control and stability by Weiner et al (1972).

The locus of control represents the internal and external locus of control from Rotter (1966) whilst stability was introduced to represent the causes which are perceived to fluctuate over time (Weiner, 1972, p. 240). Stability derived from Heiders (1958) work in which he contrasted dispositional and relatively stable characteristics such as ability and task difficulty with unstable characteristics such as effort and luck (Weiner, 1979, p. 240) as presented in Table 1.

Table 1: Determinants of success and failure (Based on Weiner et al., 1972 p. 240)

Stability	Locus of Control	
	Internal	External
Stable	Ability	Task Difficulty
Unstable	Effort	Luck

Based on this research and the growing body of research into the attribution process, Weiner (1979) presented a revised attributional theory of achievement motivation. The revised attributional theory incorporated several significant changes. The most notable is the inclusion of the controllability causal dimension.

The controllability causal dimension was originally identified by Heider (1958) through personal (intentional) and impersonal (unintentional) causes and subsequently incorporated into the achievement domain by Rosenbaum (1972) as intentionality (Weiner, 1979, p. 6). The inclusion of this causal dimension into Weiner's (1979) attributional theory is based largely on Rosenbaum (1972) who argued that causal elements such as mood and effort were both internal and unstable when they were instead quite distinct (Weiner, 1979, p. 6). This acknowledgement tending to support Malle (2004) who criticised Heider's (1958) personal and impersonal causal dimensions as having lost the dimension of intent in the translation to internal and external causes. However, unlike Rosenbaum (1972), Weiner (1979) argued that intent instead reflected control as "a lack of effort does not signify that their was an intent to fail" (Weiner, 1979, p. 6).

In conjunction with the inclusion of controllability, Weiner (1979) renamed the locus of control as the locus of causality to reflect the fact that it was "conceived as a backward looking" (Weiner, 1979, p. 6) instead of forward looking as presented by Rotter (1966). The revised attributional theory of achievement motivation based on this update is presented in Table 2.

Table 2: Revised determinants of success and failure (Weiner, 1980)

Locus of Causality	Controllable		Uncontrollable	
	Stable	Unstable	Stable	Unstable
Internal	Stable effort of self	Unstable effort of self	Ability of self	Fatigue, mood and fluctuations in skill of self
External	Stable effort of others	Unstable effort of others	Ability of others; task difficulty	Fatigue, mood and fluctuations in skills of others; luck

Whilst not incorporated in Weiner's (1979) revised attributional model of achievement and motivation or subsequent work, Weiner (1979) made specific reference to the fact that a fourth causal structure of globality from Abramson, Seligman & Teasdale's (1978) reformulated model of learnt helplessness could be incorporated into the model (p. 7). This causal structure based on global (can affect a variety of situations) and specific causes (limited to narrow and specific situations).

Whilst Weiner's attributional model of achievement motivation is notable for developing dimensions for achievement outcomes, Weiner's work is also notable for integrating attribution theory with expectancy of success and emotions. This integration has enabled researchers to "understand the effects of attributions on the dynamics of behaviour" (Anderson & Weiner, 1992, p. 307).

Expectancy of Success

Numerous theories about the expectancy of success have emerged, including Rotters (1966) locus of control (e.g. following failure at a chance task expectancies may increase) (Anderson & Weiner, 1992, p. 308). Weiner's (1979) attributional model of achievement motivation contends that stability, instead of the locus of causality, determines the expectancy of success (Weiner, 1979, p. 9). Weiner (1979) argues that success (or failure) attributed to stable causes (e.g. ability) will result in increased expectancies for future success (or failure), however, if causes become unstable (e.g. effort) then doubt will occur and decrease expectancies for the prior outcome to reoccur (Weiner, 1979, p. 9).

Emotions

The attributional framework for emotions proposed by Weiner, Russell and Lerman (1978, 1979) has largely replaced previously adopted models such

as Schachter & Singer's (1962) two factor theory of emotion (Anderson & Weiner, 1992). Weiner et al.'s (1978, 1979) attributional framework for emotions based around the premise that following an outcome, an initial positive emotional (e.g. happy) or negative emotional (e.g. frustrated, sad) reaction will occur based on the perceived success or failure of the outcome (Weiner et al., 1979, p. 1217). Following the outcome evaluation and initial emotional reaction an attribution is then made for the most likely cause which results in each causal dimension generating a distinct emotion (Weiner et al., 1979, p. 1217). This process is illustrated in Figure 3.

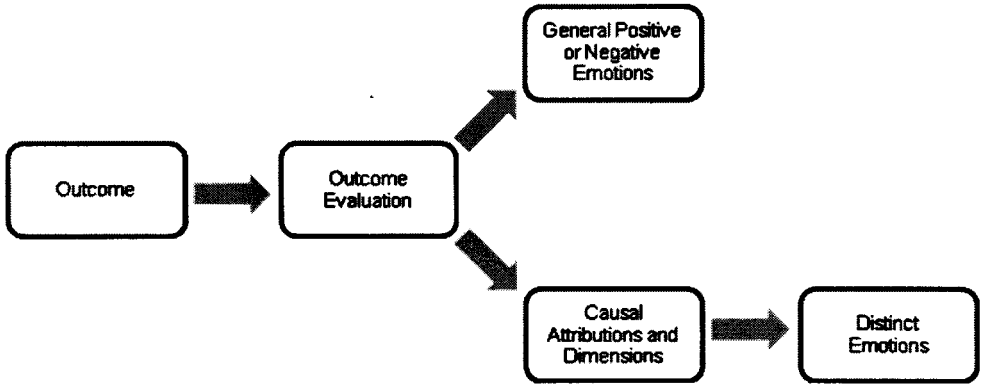

Figure 3: The cognition-emotion process (Weiner, 1985, p. 560)

Based on this process the causal dimension of causality will influence self-esteem (pride), controllability will influence social emotions (e.g. anger, pity) whilst stability will influence time related emotions (e.g. hope, fear) (Anderson & Weiner, 1992, pp. 311-312).

Locus of Causality and Self Esteem (Pride)

Weiner et al. (1972) originally postulated that attributions to internal causes (e.g. ability, effort) would result in greater self esteem (pride) than attributions to external causes (e.g. luck, task ease) (Weiner et al., 1972, p. 240). Subsequent research into self-serving attributional biases provided further evidence to support this relationship.

Controllability and Social Emotions

Based on a growing body of research, Weiner (1985) recognised anger, pity, guilt and shame, and gratitude as distinct emotions which were influenced by the causal dimension of controllability (Weiner, 1985, p. 563). For instance, an uncontrollable failed outcome may lead to feelings of shame whilst a controllable failed outcome that violates ethical norms may lead to feelings of guilt.

Stability and Time Relation Emotions

Based on the causal dimension of stability which incorporates perceptions of future outcomes, Weiner (1985) recognised hopefulness and hopelessness as distinct emotions influenced by the causal dimension of stability (Weiner, 1985, p. 566). For instance, a stable failed outcome may lead to feelings of hopelessness whilst an unstable failed outcome may lead to feelings of hopefulness.

Behaviour

Based on the work of Weiner et al. (1978, 1979), Weiner (1985) formulated the attributional theory of motivation and emotion, where expectancy of success and affect guided motivated behaviour (Weiner, 1985, p. 548). Weiner's (1985) attributional theory of motivation and emotion, like Weiner et al. (1978, 1979) is based around the premise that an initial positive or negative emotional reaction will occur based on the perceived success or failure of the outcome (Weiner, 1985, p. 564). Following the outcome evaluation and initial reaction an attribution is then made for the most likely cause (e.g. ability, task, luck) which is influenced by numerous antecedents (e.g. part personal history, performance of others) (Weiner, 1985, p. 564). The attribution is then located in the "dimensional space" (locus of causality, stability, controllability) which have psychological consequences on both expectancy and affect (e.g. pride, anger) (Weiner, 1985, p. 566). Expectancy and effect then presumed to influence behaviour (e.g. intensity, latency) (Weiner, 1985, p. 566). This process is illustrated in Figure 4.

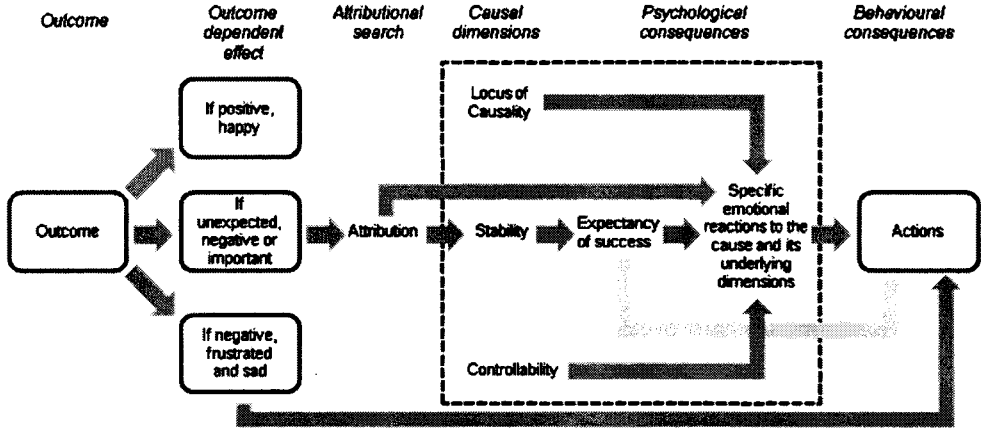

Figure 4: Attributional theory of motivation and emotion (Based on Weiner, 1985 p. 565)

Weiner's work has stimulated significant research such as Hyland (1988), Kistner, Osborne & Le Verrier (1988) and Reyna & Weiner (2001). The most significant in the context of this research is the relationship between

individual differences in attributional tendencies (attributional style) and emotional consequences such as depression, loneliness and shyness.

Biases

Research into attribution theory has indicated that several attributional biases exist in the attributional process (e.g. individuals maybe be more likely to attribute to internal rather than external causes for particular outcomes). The dominant attributional biases in attribution literature are the self-serving bias (or hedonic), fundamental attribution error and actor-observer bias.

Self Serving

The self-serving attributional bias stems from Heider's (1958) naive psychology and is based on the premise that individuals "are prone to alter our perception of reality to enhance our self esteem. We attribute success to our own dispositions and failure to external forces" (Hastorf et al., 1970, p. 73). Reasons to account for the self-serving attributional bias include:

- **Enhanced self-esteem** – internal attributions increase self-esteem more than external attributions while external attributions during failure maintain an individuals self-worth relative to internal attributions (Anderson & Weiner, 1992, p. 301; Duval & Silvia, 2002, p. 49). However, this can be self-defeating and have an associated cost (e.g. an untalented student may pursue an impossible career at great financial and emotional expense) (Anderson & Weiner, 1992, p. 303);
- **Improvement** – failure is attributed externally when individuals cannot improve and internally when individuals can improve (Duval & Silvia, 2002, p. 49);
- **Expectations of future success** – internal attributions are associated with anticipated actual successes (i.e. have had general success in life and expect further success) and where failure is inconsistent with prior outcomes, an external attribution is likely (D. T. Miller & Ross, 1975, p. 223); and
- **Favourable external perception** - internal attributions enable the individual to appear more favourable in the eyes of others and thereby provides motivational benefits for individuals toward goals (e.g. persistence, adaption) (Anderson & Weiner, 1992, p. 301).

Recent research by Mezulis, Abramson, Hyde & Hankin (2004) through a meta-analysis of 266 studies found that self serving attributional biases are pervasive in the general population (Mezulis et al., 2004, p. 711). However, differences in age (i.e. children and older adults more likely to exhibit a self-serving attributional bias), culture (i.e. western cultures are more likely to exhibit a self-serving attributional bias in comparison to Asian culture) and single psychopathology (i.e. individuals with depression are least likely to exhibit a self-serving attributional bias) has been shown to potentially influence self-serving attributions (Mezulis et al., 2004, p. 711).

Fundamental Attribution Error

The fundamental attribution error is based on the premise that individuals tend to "underestimate the impact of situational factors and to overestimate the role of dispositional factors in controlling behaviour" (Ross, 1977, p. 183). Individuals therefore will tend to emphasis the behaviour of others to internal (dispositional) rather than external (situational) causes.

The most notable example of the fundamental attribution was research by Jones & Harris (1967) in which college students were asked to estimate the "true" attitude of an individual expressing pro, anti or equivocal opinions on a controversial topic (i.e. Fidel Castro and Cuba) either through choice or compulsion (i.e. satisfy lecture prejudices) (E. E. Jones & Harris, 1967, p. 1). Surprisingly, even when students were informed the speechwriter was compelled to write the speech, students tended to partially assess it as reflecting the authors' personal views. Individuals tended to emphasis the behaviour of the speechwriter as internal even though rationally the cause was situational.

Actor-Observer

The actor-observer bias is based on the "pervasive tendency of actors to attribute their actions to situational requirements, whereas observers tend to attribute the same actions to stable personal dispositions" (E. E. Jones & Nisbett, 1972, p. 2). Individuals will tend to attribute the behaviours of others to internal (dispositional) causes and their own behaviour to external (situational) causes.

The most notable example of the actor-observer bias is research by Storm (1973) in which two actors engaged in a brief, two way unstructured conversation while two observers watched (Storm, 1973, p. 165). A subsequent questionnaire in conjunction with video replay then gauged

how the actors and observers attributed causality to the conversation (Storm, 1973, p. 165). Storm (1973) found that the observers emphasised internal causes when explaining the actors behaviours, and actors emphasised external causes when explaining their own behaviour (Storm, 1973, p. 165).

Whilst the actor-observer bias is widely accepted in social psychology (Malle, Knobe, & Nelson, 2007, p. 491), recent research by Malle (2006) through a meta analysis of 173 published research articles has cast doubt on the actor-observer bias (Malle, 2006, p. 895). The research indicating that no actor observer asymmetry exists (Malle, 2006, p. 895).

Attributional Style

Weiner's work in linking attributional theory to the expectancy of success and emotions has enabled researchers to better understand the dynamics of behaviour and individual differences (Anderson & Weiner, 1992, p. 307). Researchers representing individual differences through the attributional style construct that represents the habitual manner in which individuals explain events that befall them a in particular situations (Zullow et al., 1988, p. 673). Attributional style likely to "have its largest impact where individuals have autonomy over the setting and the realisation of performance goals and where causality for particular outcomes is ambiguous (e.g. managers, salespersons, scientists) – and, more generally, where events are encountered that are unexpected, novel or important" (Ashforth & Fugate, 2006, p. 25). Attributional style in conjunction with the Reformulated Model of Helplessness (Abramson et al., 1978), Hopelessness Theory of Depression (Abramson, Metalsky, & Alloy, 1989) and Model of Recovery from Depression (Needles & Abramson, 1990) that stem from Learned Helplessness (Overmier & Seligman, 1967; Seligman & Maier, 1967) is capable of predicting an individuals psychological state (e.g. anxiety, depression) (Zullow et al., 1988, p. 673).

Learned Helplessness

Learned helplessness stems from research conducted by Overmier & Seligman (1967) and Seligman & Maier (1967). In this research one group of dogs was subjected to controllable electric shocks (i.e. by learning to panel press) and another group of dogs subjected to uncontrollable electric shocks (Seligman & Maier, 1967, p. 1). The dogs were subsequently placed in a two way shuttle box, separated by a barrier with shock

administered through a grid floor (Overmier & Seligman, 1967, pp. 28-29). The dogs who learned they could control the electric shocks demonstrated normal escape/avoidance behaviour in this situation (Seligman & Maier, 1967, p. 1). However, the dogs that learned electric shocks were uncontrollable also failed to escape as they had previously learned it was not possible to escape the shock (Seligman & Maier, 1967, p. 1). This outcome supported their argument that "learned helplessness" can affect behaviour (Seligman & Maier, 1967, p. 1). As a consequence Seligman (1972) proposed that learned helpless presented a model for depression in humans (W. R. Miller & Seligman, 1975, p. 228).

Based on this research, the theory of learned helplessness was extended to humans. The most notable research initially was Hiroto (1974) and Hiroti & Seligman (1975). In this research one group of humans were subjected to controllable noise (i.e. by learning to solve a puzzle they could control it) and another group of humans subjected to uncontrollable noise (Hiroto & Seligman, 1975, p. 311). The humans were subsequently placed in a two way shuttle box with uncontrollable noise (Hiroto & Seligman, 1975, p. 311). As with the dogs, the humans that were subjected to the uncontrollable noise did not demonstrate normal escape/avoidance behaviour as compared to the group subjected to controllable noise (Hiroto & Seligman, 1975, p. 311).

Based on this research and intermediate research with other animals (e.g. rats, cats, fish), Maier & Seligman (1976) formulated the learned helplessness hypothesis. The hypothesis based around humans and animals expecting outcomes to be uncontrollable, and thereby adversely impacting (Abramson et al., 1978, p. 50; Maier & Seligman, 1976, p. 3):

- **Motivation** –outcomes that are perceived as uncontrollable will result in individuals being less motivated to influence the outcome;
- **Cognition** – learning that outcomes are uncontrollable results in a cognitive deficit which impacts the ability to subsequently learn that an outcome is controllable; and
- **Emotion** – outcomes that are uncontrollable produce greater emotional disruption and create a depressed affect.

Whilst widely accepted, the learned helplessness theory proved to simplistic for human behaviours and subsequent research challenged the theory. For instance, Buchwalk, Coyne & Cole (1978) through a critical

evaluation of the learned hopelessness theory challenged it on the grounds of:

- **Conceptual Issues** - ambiguities and confusion in the writings;
- **Conflicting Research** - conflicting research in published papers (e.g. research suggests depression is not related to learned helplessness); and
- **Research Strategy** – the selected research strategy was inappropriate as it drew conclusions from analogue studies.

In addition, Abramson, Seligman & Teasdale (1978) challenged the learned hopelessness theory on the grounds that included the fact it did not explain when hopelessness is general or specific and that it failed to distinguish between cases in which outcomes are uncontrollable for all people and uncontrollable for only some people (Abramson et al., 1978, p. 49).

Reformulated Model of Helplessness

Criticisms of the original learned hopelessness hypothesis led to a reformulated model of helplessness postulated by Abramson, Seligman and Teasdale (1978). The reformulated model based on the attribution theory posited by Heider (1958) and Weiner (1972, 1974) and capable of explaining attributional styles that may characterise depressed individuals (Abramson et al., 1978, pp. 50, 59).

The reformulated model of helplessness is based on a sequence of events illustrated in Figure 5. According to this sequence an individual initially will perceive their actions are non-contingently related to the desired outcome (Abramson et al., 1978, p. 52). Based on this perception they will then make an attribution for the non-contingency between their actions and the outcome (Abramson et al., 1978, p. 52). This attribution forming the basis for future expectations of non-contingency that lead to symptoms of hopelessness (Abramson et al., 1978, p. 52). Depressed individuals perceiving non-contingency more readily than non-depressed (Abramson et al., 1978, p. 68).

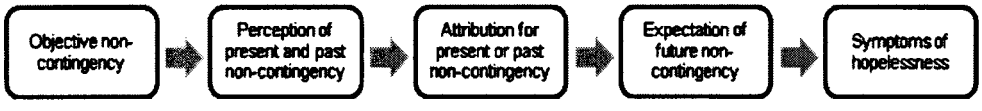

Figure 5: Events leading to helplessness (Abramson, Seligman & Teasdale, 1978, p.52)

The attributions involved in this sequence are based on the three dimensions of internality, stability and globality (Abramson et al., 1978, p.

49) where the causal dimension of internality and stability are representative of Weiner's (1979) locus of causality and Weiner et al. (1972) causal dimension of stability. The third dimension of globality subsequently postulated by Weiner (1979) as a potential causal dimension for attributional theory stemmed from Kelley's (1967, 1972) degree of distinctiveness (Peterson, Maier, & Seligman, 1993, p. 150). The globality causal dimension based around global causes (i.e. the cause affects a variety of situations) or specific causes (i.e. the cause is limited to a narrow range of situations) (Abramson et al., 1978, p. 56).

Based on these causal dimensions it was postulated that (Abramson et al., 1978, pp. 52,57,58,68):

- **Internality** – determines whether self-esteem is lowered (e.g. internal attributions during failure result in self esteem deficits whilst external attributions will not result in self-esteem deficits);
- **Globality** – determines the generality of the depressive deficits (e.g. global attributions during failure will result in helplessness across situations instead of the original situation); and
- **Stability** – determines the chronicity of the depressive deficit (e.g. stable attributions during failure will result in helplessness persisting).

The strength of the globality and stability deficits dependent on the strength or certainty of the expectation of uncontrollability, and in the case of internality, the significance of the outcome (Abramson et al., 1978, p. 68). Based on these dimensions a depressive attributional style was postulated to characterise pessimistic (depressive) individuals.

The pessimistic attributional style was postulated to be based around individuals attributing failure to internal, global and stable causes due to their low self-esteem with general and chronic helplessness (Abramson et al., 1978, p. 68). In order to mitigate depression, Abramson et al. (1978) postulated a optimistic attributional style in which attributions for failure are external, specific and global (e.g. raise self esteem, reduce generality of deficit and reduce its duration) whilst attributions for success are internal, stable and global (Abramson et al., 1978, p. 70).

Initial research by Seligman, Abramson, Semmel & Baeyer (1979) provided confirmatory evidence for the reformulated theory of helplessness. The research finding that depressed college students were indeed more likely to attribute failure to internal, global and stable causes and successes to

external and unstable causes than non-depressed college students (Seligman et al., 1979, p. 242). However, the relationship between the attributional style for positive events was found not to be as strong as the attributional style for negative events (Needles & Abramson, 1990, p. 157).

The most significant subsequent research however has been Sweeney, Anderson & Bailey (1986) which involved a meta-analysis of 104 research studies involving nearly 15,000 subjects to determine the relation of attributional styles to depression. This research concluding that "attributions are related to depression in the manner predicted via the cognitive models (Abramson et al., 1978)" (Sweeney et al., 1986, p. 987). However, significantly, the research also found that the attributional style for positive events is more weakly related to the onset of depression than attributional styles for negative events (Needles & Abramson, 1990, p. 157).

Hopelessness Theory of Depression

Criticisms of the reformulated theory of helplessness and developments in the field of depression led to the hopelessness theory of depression being postulated by Abramson, Metalsky & Alloy (1989). The hopelessness theory of depression is based on the reformulated theory of helplessness and is focused more specifically on depression (i.e. negative events) (Abramson et al., 1989, p. 358).

The hopelessness theory of depression is based on a causal chain illustrated in Figure 6 where the broken lines denote contributory causes. According to this causal chain the perceived occurrence of a negative life event (or non occurrence of positive event) leads to an inference about the life event (Abramson et al., 1989, p. 360). Based on the theory three inferences will then modulate whether they develop symptoms of hopeless depression in light of negative events (Abramson et al., 1989, pp. 360-361):

- **Inferred stable, global causes of negative life event and high degree of importance attached to the event (Proximal Contributory Cause)** - lead to generalised hopelessness, with the symptoms of hopelessness depression more likely to occur when negative life events are attributed to global and stable causes which are perceived as important;
- **Inferred negative consequences of particular life event (Proximal Contributory Cause)** – tend to moderate relationship between negative

life events and symptoms of hopelessness depression by affecting likelihood of becoming hopeless; and

- **Inferred negative characteristics about the self given life events (Proximal Contributory Cause)** – tend to modulate consequences of negative events based on inferred characteristics about self (e.g. worth, abilities, personality).

In addition, lowered self-esteem and dependency will be a symptom of hopeless depression if the event was attributed to a internal, global and stable cause instead of any external or internal, specific and unstable cause (Abramson et al., 1989, p. 363).

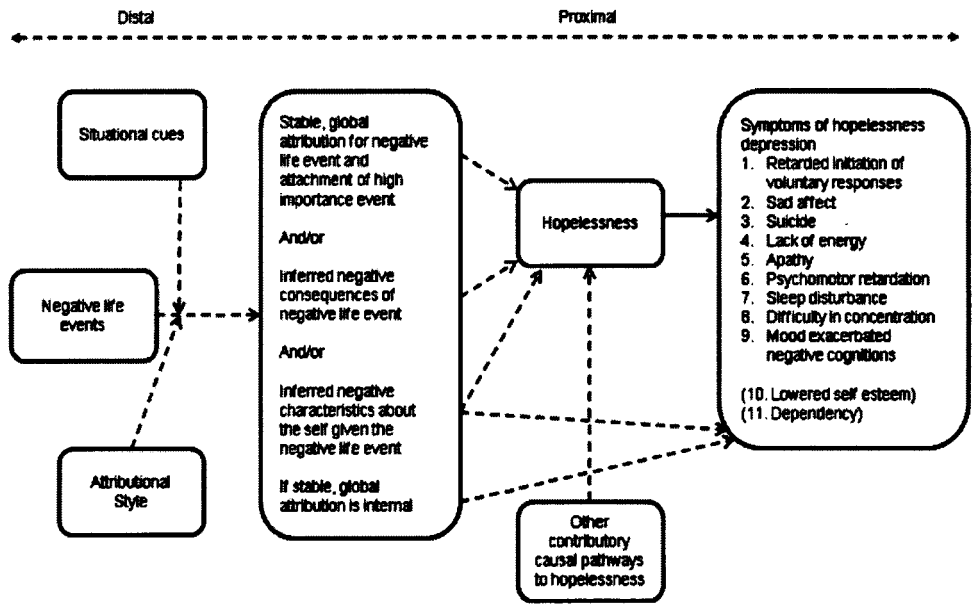

Figure 6: Hopelessness theory causal chain (Based on Abramson et al., 1989, p. 360)

Based on the hopelessness theory of depression, negative life events should be predicted by situational cues as well as attributional style (Abramson et al., 1989, p. 368). A pessimistic attributional style (depressive) will act as a distal contributory cause of symptoms of hopelessness depression for negative life events, but not positive, if within the same content domain (Abramson et al., 1989, p. 362).

Model of Recovery from Depression

The model of recovery from depression postulated by Needles & Abramson (1990) is compatible with the hopelessness theory of depression and focuses on how a depressed individual may become hopeful (Needles & Abramson, 1990, p. 157). The model of recovery from depression based on the premise that depressed individuals with an optimistic attributional style for positive events will be more likely to regain from hopelessness and

thereby recover from depression when positive events occur (Needles & Abramson, 1990, p. 156).

Initial research by Needles & Abramson (1990) of a group of depressed college students supported this postulation when it demonstrated that students who experience more positive events and exhibit an optimistic attributional style tended to have decreased helplessness and remission of depressive symptoms (Needles & Abramson, 1990, p. 156). Subsequent research such as that by Johnson, Han, Douglas, Johannet & Russell (1998) into the recovery of depression among psychiatric patients also indicated that recent positive events and an optimistic attributional style led to decreased helplessness and remission of depressive symptoms (Johnson et al., 1998, p. 369). More recently, research by Fresco, Alloy & Reilly-Harrington (2006) of 239 college students indicated a pessimistic attributional style led to increased clinically assessed depression symptoms particularly when confronted by negative life events or absence of positive events (Fresco et al., 2006, p. 1140).

However, some aspects of Needles & Abramson (1990) have not received support. For instance, research such as that by Johnson, Crofton & Feinstein (1996) of 52 depressed psychiatric inpatients indicate that a global, stable attributional style for positive events did not interact with positive life events to predict decreases in hopelessness (Johnson et al., 1998, p. 369).

Measurement

Attributional style can be measured using either situational or trait measures. These measures can be described as (Henry & Campbell, 1995, p. 36):

- **Situational Measures** – attributions measured by examining the interpretations of individuals based on causal dimensions rooted in a specific situation. Measures include the Academic Attributional Style Questionnaire (Peterson & Barrett, 1987) and Sport Attributional Style Questionnaire (Hanrahan, Grove, & Hattie, 1989); and
- **Trait Measure** – attributions measured are consistent across situations and heavily influences attributions for specific situations. Measures include the Attributional Style Questionnaire (Peterson, Semmel, Von Baeyer, Abramson, & Seligman, 1982) and Causal Dimension Scale II (McAuley, Duncan, & Russell, 1992).

Research has provided evidence that trait measures can be successfully applied to specific situations. The most notable being Seligman & Schulman (1986) in which the Attributional Style Questionnaire was used to discover that life insurance sales agents with a pessimistic attributional style were more likely to initiate fewer sale attempts, were less persistent, produced less and resigned more frequently than those with a optimistic attributional style (Seligman & Schulman, 1986, pp. 832-833). However, research by Cutrona, Russell & Jones (1985) in which the Attributional Style Questionnaire was used with 1200 students to assess their beliefs on six different negative events found that the cross-situational consistency of attributional style was weak (Cutrona et al., 1985, p. 1043).

Due to the varied research findings in the application of a trait measure, situational measures are authoritative in this research. The domain specific nature more likely to strongly predict outcomes than a more generalised trait measure (Ashforth & Fugate, 2006, p. 12).

Situational Measures

Various domain specific attributional style measures have been developed such as the Academic Attributional Style Questionnaire (Peterson & Barrett, 1987) and Sport Attributional Style Questionnaire (Hanrahan et al., 1989). In the context of work settings, various attributional style measures have been developed. The most notable in the context of this research are the validated Occupational Attributional Style Questionnaire (Furnham et al., 1994; Furnham, Sadka, & Brewin, 1992), Organisational Attributional Style Questionnaire (Campbell & Martinko, 1998; Kent & Martinko, 1995) and Work Attributional Style Questionnaire (Ashforth & Fugate, 2006). The most significant differences and similarities between these situational measures are presented in Table 3.

Table 3: Comparison of work situational measures (Based on Ashforth & Fugate, 2006)

Characteristic	Occupational Attributional Style Questionnaire	Organisational Attributional Style Questionnaire	Work Attributional Style Questionnaire
Focus	Both positive and negative events (not balanced)	Negative events	Both positive and negative events (balanced)
Distinguishes between achievement and affiliation	No		Yes
Response Format	Response mapped directly to an attributional dimension instead of a causal element (e.g. ability, luck)		
Event type	Hypothetical		
Dimensions	Internality, Stability, Globality, Externality and Personal Control (Furnham et al., 1994)	Stability, Controllability and Intentionality (Campbell & Martinko, 1998)	Internality, Globality, Stability and Controllability (Ashforth & Fugate, 2006)

Whilst these three measures are similar and share several characteristics (i.e. response format and event type), the WASQ is authoritative in this research due to its balanced focus on positive and negative events, adoption of causal dimensions postulated by Weiner (1985) and ability to distinguish between achievement and affiliation (Ashforth & Fugate, 2006, p. 15). However, unlike the Occupational Attributional Style Questionnaire and Organisational Attributional Style Questionnaire it has not received the same degree of empirical validation through subsequent research due to its relatively recent formulation.

Work Attributional Style Questionnaire

The WASQ postulated by Ashforth & Fugate (2006) provides an attributional style measure for studying sense making processes within an organisation (Ashforth & Fugate, 2006, p. 13). The WASQ is based around twelve hypothetical events in which six are positive and six are negative (Ashforth & Fugate, 2006, p. 16). Events are achievement-related, affiliation related and achievement-affiliation related which are experienced in the workplace (Ashforth & Fugate, 2006, p. 16). Based on each event participants are asked the following sequence of questions based around the four causal dimensions of internality, stability, globality and controllability that are each assessed against a seven-point scale by the participant (Ashforth & Fugate, 2006, p. 17):

- **Internality** - Is the cause due to something about you, or due to something about other people or circumstances? (circle one number)

Totally due to me (Internal)	1 2 3 4 5 6 7	Totally due to other people or circumstances (External)

- **Stability** - Is the cause something that influences other areas of your work life, or something that will persist over time? (circle one number)

Will never again be present (Unstable)	1 2 3 4 5 6 7	Will always be present (Stable)

- **Globality** - Is this cause something that influences other areas of your work life, or something that influences just this particular work situation? (circle one number)

Influences all situations in my work life (Global)	1 2 3 4 5 6 7	Influences just this particular work situation (Specific)

- **Controllability** - Is the cause something over which you have control, or is it something outside of your control? (circle one number)

Totally under my control (Controllable)	1 2 3 4 5 6 7	Totally outside of my control (Uncontrollable)

Based on the response to each causal dimension (e.g. controllable for the causal dimension of controllability) the participant's attributional style can be determined for each event, with the aggregate forming the overall attributional style for the participant. The causal dimensions of internality, stability and controllability used in the WASQ stem from Weiner's (1979) attributional theory of achievement motivation whilst globality stems from Abramson, Metalsky & Alloys (Abramson et al., 1978) reformulated model of learned helplessness (also suggested in Weiner (1985) as a possible causal dimension but never adopted in his attributional theory of motivation and emotion).

Research into the WASQ dimensions indicate that they can be further reduced into two dimensions: internality/controllability and stability/globality (Ashforth & Fugate, 2006, p. 22). These findings reflected in prior research such as the Organisational Attributional Style Questionnaire in which Campbell and Martinko (1998) collapsed globality and stability into a single stability construct and Kent & Martinko (1995) in which internality and controllability were collapsed into a single controllability construct (Ashforth

& Fugate, 2006, p. 22). This research will employ all four causal dimensions as originally postulated; however, these phenomena may also be evident.

Based on the application of the WASQ in two validation studies it is also evident that an optimistic attributional style for positive events had a greater impact on work adjustment than a pessimistic attributional style for negative events (Ashforth & Fugate, 2006, p. 24).

Whilst the WASQ provides a model rooted in Weiner's (1979) attributional theory of achievement motivation and Abramson, Metalsky & Alloys (1978) reformulated model of learned helplessness it provides several exciting opportunities for this research beyond the potential reduction of causal dimensions. In particular, Ashforth & Fugate (2006) suggest future research is required in diverse occupations and to compare results from the WASQ to similar research conducted with the Organisational Attributional Style Questionnaire and Occupational Attributional Style Questionnaire (Ashforth & Fugate, 2006, p. 36). In this context, this research is the first based on a literature search of ProQuest and MetaQuest to compare the WASQ against findings from similar research by Standing, Guilfoyle, Lin & Love (2006) based on the Occupational Attributional Style Questionnaire.

Additionally, Ashforth & Fugate (2006) suggest future research explore attributions against actual workplace events in contrast to hypothetical events (Ashforth & Fugate, 2006, p. 25). Whilst hypothetical events have been suggested to be "unlikely to force individuals towards one particular type of attribution for each outcome due to overpowering situational information" (Alloy, Abramson, Metalsky, & Hartlage, 1988, p. 17), research suggests that hypothetical events are only weakly to moderately associated with attributions for actual events (Ashforth & Fugate, 2006, p. 15). For instance, Amor & Sackett (2006) found participants, due to the lack of uncertainty associated with hypothetical events, to be unrealistically optimistic in comparison to actual events for predicting performance (Armor & Sackett, 2006, p. 583). As such, and to provide comparability with Standing, Guilfoyles, Lin & Loves (2006) research based on the Occupational Attributional Style Questionnaire, this research is based on actual events.

Project Success and Attributional Style

Based on the utility evident in understanding attributional style it is surprising that limited research has been conducted in the IT domain (i.e. Standing, Guilfoyle, Lin & Love (2006)). This is especially so given recent research by beyondblue and Beaton Consulting (2007) in which a survey of over 17,000 Australians found professionals, such as those involved in IT projects, were more likely to experience depressive symptoms than the general population.

More significantly however, instead of IT project management within the IT domain being characterised by positive events (i.e. successes), it is characterised by a usually high occurrence of negative events (i.e. failures). The Standish Group (2004) for instance finding that out of 9,236 projects surveyed globally, 29% of all projects succeeded, 53% were partial successes and 18% were outright failures based on the project outcome (2004, p. 2). Regionally, the Simpl Group and New Zealand Institute of Economic Research (2000) were commissioned by the Department of Prime Minister and Cabinet in New Zealand to study the performance of IT projects. The research identified that out of 136 projects surveyed in New Zealand, 38% of all projects succeeded, 59% were partial failures and 3% were outright failures based on the project outcome (e.g. on time, budget and schedule) (SIMPL Group & New Zealand Institute of Economic Research, 2000, p. iv). However, in the same report, for the same projects, it also identified that 88% of all projects succeeded, 9% were partial failures and 3% were outright failures based on the product delivered by the project (e.g. achieved organisational goals) (SIMPL Group & New Zealand Institute of Economic Research, 2000, p. iv). The difference in figures from the Simpl Group and New Zealand Institute of Economic Research (2000) clearly re-enforce Baccarinis (2007) review of project management literature where he states "project management literature provides no consistent interpretation of the term project success" (Baccarini, 2007, p. 198).

Defining project success and failure is therefore a complex proposition. The most frequently cited definitions for project success are based around the ability to meet time, cost and quality success criteria (Wateridge, 1998, p. 59). However, as observed by Wateridge (1995) this is "limiting in its focus, because it does not take into account other criteria (for example quality and achievement" (Wateridge, 1995, p. 169). This sentiment is reflected in a

gradual transition to a more comprehensive view of project success that has evolved from project management to a more holistic view encompassing both project management and product success (e.g. achieves strategic objectives) (Baccarini, 2007, p. 198; Jugdev & Muller, 2005, p. 28). However, success is multi-dimensional and can be perceived from various perspectives (e.g. developer, stakeholders) (Baccarini, 2007, p. 206; Yu, Flett, & Bowers, 2005, p. 430).

In the context of this research we argue that personal success (i.e. individual's perspective) is equally as important as project and product success. Indeed, personal success based around self-worth, abilities and so forth can significantly impact how the individual perceives the project outcome (e.g. an individual may personally deny a project failed to maintain a positive affective state). Based on the theory of hopefulness and project management literature we suggest that success is therefore based around project success, product success and personal success as illustrated in Figure 7. This sequence reflective of Baccarinis (2007) postulation that project management success influences product success (Baccarini, 2007, p. 204). Baccarini (2007) forms the basis of the literature review sections on project management and product success.

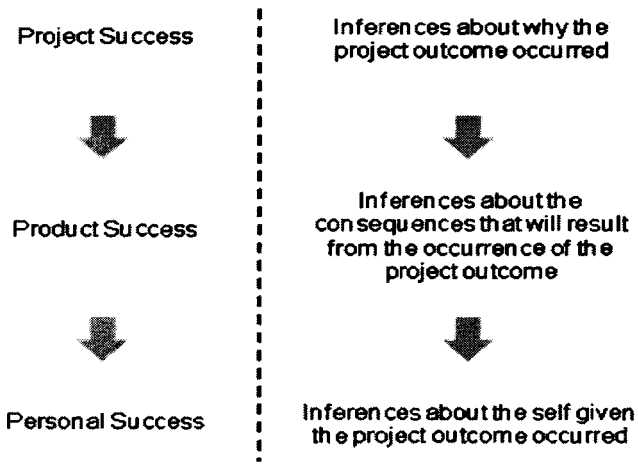

Figure 7: Project success aligned to inferences (Based on Abramson et al., 1989, p. 360)

The concept of personal success is vaguely reflected in research such as Turner & Muller (2005) which describes leadership styles for project managers, albeit from a external perspective.

Project Management Success

Project management success formed the dominant view of project success pre-1980 (Jugdev & Muller, 2005, p. 23). Project management success representing an internally focus assessment of the projects implementation

process, and in particular meeting the traditional time, cost and quality objectives (Baccarini, 2007, p. 200; Duncan, 1996, p. 6; Kerzner, 1987, p. 31; Pinto & Mantel, 1990, p. 270).

Beyond the traditional time, cost and quality objectives, the dominant view of project success is that it encompasses meeting the implementation goals through a quality project management process and satisfying project stakeholders in relation to the project (Baccarini, 2007, p. 200; Duncan, 1996, p. 6; Kerzner, 1987, p. 31; Pinto & Mantel, 1990, p. 270). This perspective is based on the premise that project management is based around efficiency and directly contributes to the project outcome.

Meeting Time, Cost and Quality Objectives

The ability to meet time, cost and quality objectives are intrinsic to project management success (Duncan, 1996, p. 6) and typically represent the hard dimensions of success (i.e. objective, tangible and measureable) (Baccarini, 2007, p. 205). The relationship of these objectives frequently emphasised through the "iron triangle" where:

- **Time** – as projects are characterised by a finite beginning and a finite end the ability to meet major milestones articulated in the project schedule are critical and highly dependent on activities such as duration estimation, schedule development and control (Duncan, 1996, pp. 4,59). The inability to meet time objectives (e.g. schedule overrun) can at worst case lead to project abandonment (Jugdev & Muller, 2005, p. 22);
- **Cost** – as projects are typically characterised by an allotted budget the ability to ensure completion within this budget is critical and highly dependent on activities such as resource planning, cost estimation and control (Duncan, 1996, pp. 4,73). The inability to meet cost objectives (e.g. cost overrun) can at worst case lead to project abandonment (Jugdev & Muller, 2005, p. 22); and
- **Quality** – as projects are typically characterised by requirements the ability to ensure that they will satisfy the need for which it was undertaken is critical and highly dependent on activities such as quality planning, assurance and control (Duncan, 1996, pp. 4,83). The inability to meet quality objectives (e.g. meet user requirements) can at worst case lead to failure (Jugdev & Muller, 2005, p. 22).

The ability to meet these objectives is typically associated with strong project management control (Kerzner, 1987, p. 38).

Meeting Implementation Goals through a Quality Project Management Process

The quality and depth of the project management process is a critical element in meeting implementation goals (Kerzner, 1987, p. 38). Publications such as the *ISO10006 – Quality Management – Guidelines to Quality in Project Management* and the *A Guide to the Project Management Body of Knowledge* notable for providing guidance to practitioners in implementing and achieving quality in project management processes. The efficiency of these processes (in contrast to efficiency) an important consideration in determining project success (Baccarini, 2007, p. 202).

Meeting the implementation of "something" through a quality project management process can be gauged against critical success factors. The most dominant factors are based around processes and people (Kappelman et al., 2006, p. 34). The most dominant process related success factors include (Kappelman et al., 2006, p. 34):

- **Documented requirements and/or success criteria** – documented requirements (e.g. functional, technical) and success criteria prior to project initiation to ensure the implementation meets stakeholders expectations (Baccarini, Salm, & Love, 2004, p. 288);
- **Change control processes (change management)** – change control processes are critical to deal with evitable changing requirements (e.g. legislative, business, competition) (C. Jones, 2006, p. 7);
- **Effective schedule planning and/or management** – detailed specifications and action steps coupled with effective management to ensure the efficiency of the project implementation (Pinto & Mantel, 1990, p. 270);
- **Communication among stakeholders** – communications among stakeholders is critical and needs to convey the intended meaning in written, verbal and non verbal forms (Jost, 2006, p. 10);
- **Resources assigned to project** – resources planned for a project need to remain committed and not reassigned to higher priority projects without replanning the project (Kappelman et al., 2006, pp. 35-36); and

- **Business case for the project** – business cases that address immediate and the direct impact on the organisation from the project are critical (e.g. sales, profits, gain market share) to ensure resourcing and executive management support (Kappelman et al., 2006, p. 36; Shenhar, Dvir, Levy, & Maltz, 2001, p. 715).

Additionally, the most dominant people related success factors include (Kappelman et al., 2006, p. 34):

- **Executive management support** – visible support and the commitment by executive managers (i.e. project sponsorship and life cycle lifecycle) are critical to project success (Kerzner, 1987, p. 54);
- **Competent project manager** – competent project managers that can effectively manage projects and not become to deeply immersed in technical aspects are critical to managing risk and ensuring project success (Baccarini et al., 2004, p. 294);
- **Commitment of the project team** – project teams needs to be committed, happy and focused on the project (e.g. focus energy on relevant stakeholders) (Wateridge, 1998, p. 63); and
- **Team members possess requisite knowledge and/or skills** – project team members need the knowledge and/or skills to mitigate risks associated with products such as complex and novel technologies (Kappelman et al., 2006, p. 34).

The above factors indicate that projects rarely fail due to the actual technology being implemented.

Satisfying Project Stakeholders

Stakeholders need to feel satisfied that they are adequately involved in the project management processes, particularly as they are the project owners (Wateridge, 1995, p. 171). Failure to satisfy stakeholders can lead to resources being withdrawn from the project and diminished stakeholder commitment and participation (e.g. failure to attend critical steering committees) (Jugdev & Muller, 2005, p. 29; Kappelman et al., 2006, p. 34).

Product Success

Product success represents the external focus beyond the projects implementation (Baccarini, 2007, p. 200). The dominant view of product success is that it encompasses strategic alignment, business and direct

benefits and satisfies stakeholders (Baccarini, 2007, p. 203; Shenhar et al., 2001, p. 715).

Strategic Alignment

Strategic alignment represents the alignment of business and IT strategies in an organisation (Henderson & Venkatraman, 1999, p. 472). It encompasses an organisational vision for both business (e.g. competitive advantage) and technology (e.g. service levels) (Henderson & Venkatraman, 1999, pp. 472,481; Shenhar et al., 2001, p. 715). The benefits realised from strategic alignment in relation to determining project success can only be recognised and assessed in the future (e.g. three years after implementation) (Shenhar et al., 2001, p. 717). However, effective project portfolio management and programme management can maximise the potential for projects to align with strategic objectives (Baccarini, 2007, p. 203).

Business and Direct Benefits

Projects must have a direct and immediate benefit for the organisation (e.g. increased profits, income, market share, productivity) that can be assessed through measures that include new process performing time, yield and quality (Shenhar et al., 2001, p. 203). The business benefits oriented around efficiency, effectiveness or new business (Wateridge, 1998, p. 60).

Satisfies Stakeholders

Projects must ensure that stakeholders, especially users, are satisfied that their requirements are met where they relate to strategic alignment and business/direct benefits (Baccarini, 2007, p. 203). The inability to satisfy users through systems that fail to meet expectations are likely to be remembered as a failure with users reluctant to participate in future projects (Wateridge, 1998, pp. 61-62).

Personal Success

Personal success, in the context of projects, represent the self-worth, abilities, potential, opportunities and so forth derived by an individual through the project management process and/or product. Personal success is derived from an individual's inference made in relation to the project, just as with project management and product success (Goldfinch, 2007, p. 918), but with an emphasis on an individual's personal contribution to the project and beliefs on how achievement of the project goals benefit the self

(Abramson et al., 1978, p. 55). As a consequence, a project may be perceived a personal success by an individual relative to another individual, even if the project failed when measured against project management and product success criteria (Muller & Turner, 2007, p. 299).

Based on the hopelessness theory of depression, where an individual perceives that a significant project failed (e.g. project management and product failure) and the cause of failure was due to the self (e.g. I did not try hard enough, I did something a preschooler would have seen was wrong) personal failure will have the potential for the most damaging consequences (e.g. hopelessness, low self-esteem) that will exacerbate the project outcome (Abramson et al., 1989, pp. 360-361).

Attributional Style and Information Technology Projects

The hopelessness theory of depression (Abramson et al., 1989) indicates that a pessimistic attributional style will act as a distal contributory cause of symptoms of hopelessness depression for negative life events if within the same content domain (Abramson et al., 1989, p. 362). In conjunction with the model of recovery from depression (Needles & Abramson, 1990), understanding the attributional style of individuals involved in IT projects will not only contribute to understanding hopelessness, and subsequent depression within the IT project domain, but also potentially assist in recovery.

In the context of the IT project domain, the perceived project outcome based on the project management, product and personal outcome will therefore tend to be modulated by an individual's attributional style (Abramson et al., 1989, pp. 360-361) that may heighten an individuals susceptibility to specific behaviours in a specific domain such as IT projects (Monroe & Simons, 1991, p. 421). Attributional style can be demonstrated as a strong predictor of an individual's predisposition in a specific domain (e.g. Cole et. al. (2008), Rowe, Maughan & Eley (2006), Metalsky, Halberstadt & Abramson (1987)).

Behavioural psychology suggests attributional style is based on experiences emanating from the individuals learning and development (e.g. experience on previous projects, communication skills) (Zubin & Spring, 1977, p. 105). Whilst other models exist, in particular biological (e.g. genes, biochemistry and neurophysiology), the authoritative model in the context of this research is that of psychology based on experience (Zubin & Spring,

1977, p. 105). Within the IT project domain, based on its hierarchical nature, we contend that the level of project experience will tend to be related to the individual's level of seniority (i.e. increased project experience is proportional to the individual's level of seniority).

Empirical Studies

Prior research into attributional style within the IT project domain is limited to Standing, Guilfoyle, Lin & Love (2006) in which 116 individuals involved with IT projects were surveyed within three different job responsibility levels (i.e. support worker, line manager and executive manager) using the Occupational Attributional Style Questionnaire. The research indicated a relationship (albeit weak) between attributional style and experience in the IT project domain (Standing et al., 2006, p. 1152). The relationship tended to suggest that as the job responsibility levels increased so did the tendency for individuals to become increasingly pessimistic. The primary reason for the shift evident in the research was an increased attribution of success to external factors (i.e. others and/or circumstance) by executive managers relative to support workers and line managers for success (Standing et al., 2006, p. 1155).

Whilst Standing, Guilfoyle, Lin & Love (2006) focused on variations in the attributional style between the job responsibility levels, the research provided no indication of the overall attributional style exhibited by the job responsibility levels (e.g. optimistic or pessimistic). However, based on an analysis of the research findings it appears that all job responsibility levels tend to exhibit an optimistic attributional style (i.e. attributed success to internal-stable-global-controllable causes and failure to external-uncontrollable causes) with a slight pessimistic tendency (i.e. attributed failure to stable and global causes).

Based on this research, Standing, Guilfoyle, Lin & Love (2006) postulate that support workers should adopt a more balanced approach to attributing success and failure such as executive managers (Standing et al., 2006, p. 1148) and state that "support workers show immaturity in relation to over estimating their role in success but not accepting responsibility for failure" (Standing et al., 2006, p. 1158). However, due to the quantitative approach to this research these findings may not be reflective of the perception of support workers. Indeed, why would support workers take responsibly for failure when their task is successfully completed and the project fails due to poor project management and strategic alignment over which they have no

influence? Indeed, various other findings such as why line managers were significantly more likely to attribute failure to stable causes than support workers and executive managers remain unanswered (Standing et al., 2006, p. 1153). Qualitative research into these findings could provide greater clarity into why they are evident and the actual implications for practitioners.

Summary

Attributional style represents a construct that can be traced back to research stemming from naive psychology, social learning theory and learned helplessness as illustrated in Figure 8.

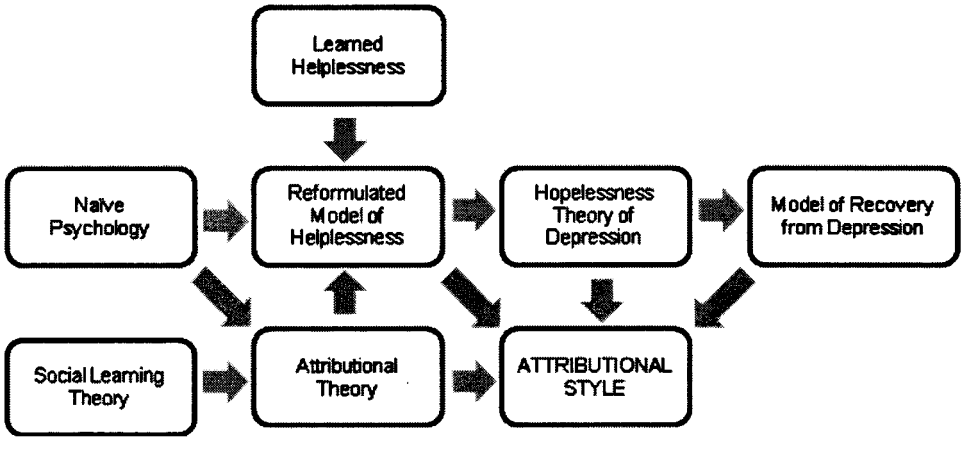

Figure 8: Inter-relationship of theories shaping attributional style

Attributional style is representative of the habitual way individuals explain events that befall them in a particular situation (Zullow, Oettingen, Peterson, & Seligman, 1988, p. 673). A pessimistic attributional style (i.e. internal, stable, global and controllable attributions for failure and external, unstable, specific and uncontrollable attributions for success) associated with helplessness, lowered self-esteem and symptoms of depression. In contrast, an optimistic attribution style (i.e. external, unstable, specific and uncontrollable attributions for failure and internal, stable, global and controllable attributions for success) is associated with positive work adjustment (Ashforth & Fugate, 2006, p. 13).

The ability to understand the attributional style of individuals within the information technology project achievement domain is however a complex proposition due to the lack of consistency in definitions for success and failure (Baccarini, 2007, p. 198). In this research however, project success and failure will most likely be based on a combination of project, product and the resultant personal success. The projects selected by the individuals

in this research perceived as the extremes of both outcomes based on their experience.

Prior research by Standing, Guilfoyle, Love & Lin (2006) in the information technology project domain utilising the Occupational Attributional Style Questionnaire (Furnham et al., 1994) suggest that based on an actual successful and failed project outcome individuals will tend to exhibit an increasingly pessimistic attributional style as their level of experience increases. However, based on the evidence available in the research it appears all job responsibility levels exhibit an optimistic attributional style.

Whilst the quantitative approach employed by Standing, Guilfoyle, Love & Lin (2006) provides an insight into the attributional tendencies of individuals involved in information technology projects, it fails to provide an insight into several emergent themes evident in the research (e.g. line managers being more likely to attribute failure to stable causes, support workers being less pessimistic than executive managers). The potential of applying a qualitative approach (e.g. interviews, focus groups) to understand the emergent themes has the potential to offer practitioners an invaluable insight into an individuals work adjustment.

In addition to the Occupational Attributional Style Questionnaire (Furnham et al., 1994) employed by Standing, Guilfoyle, Love & Lin (2006), the Work Attributional Style Questionnaire (2006) provides a alternate instrument to determine an individuals attributional style. Based around Weiner's (1979) attributional theory of achievement motivation and Abramson, Metalsky & Alloy's (1989) hopelessness theory of depression it has been shown to be a significant predictor of work adjustment (Ashforth & Fugate, 2006, p. 12). The application of the Work Attributional Style Questionnaire in this research is capable of cross validating this instrument against similar research in the IT project domain conducted using the Occupational Attributional Style Questionnaire by Standing, Guilfoyle, Love & Lin (2006) using actual events. Additionally, the application of the Work Attributional Style Questionnaire through a qualitative approach will provide the ability to explore emergent themes lacking in prior research.

Chapter 3: Research Methodology

In this chapter:

"We often speak of 'standing on the shoulders of giants', that is, of previous generations"

- Earl R. Babbie (1995, p. 7)

In this chapter, I will provide an overview of the research methodology that forms the basis for this research. The chapter begins by briefly examining the critical research paradigm and qualitative research methodology. Next, the chapter examines the case study research method and data collection techniques of interviews and focus groups. Finally, the chapter examines the research instrument and concludes with a summary.

Paradigm

A research paradigm represents "a basic set of beliefs that guide action, whether the everyday garden variety or action taken in connection with a disciplined inquiry" (Guba, 1992, p. 17). The research paradigm guides the methodology selected for the research (i.e. qualitative, quantitative) that in turn guides the method, technique and instrument.

Research paradigms that can guide the methodology in the context of information systems and social science based research include (Orlikowski & Baroudi, 1991, pp. 1,5-6):

- **Positivist Research** – research based on the premise that fixed relationships exist within phenomena which can typically be measured and generalised;
- **Interpretivist Research** – research based on the premise that individuals seek to understand the world by creating their own subjective and inter-subjective meanings; and
- **Critical Research** – research based on the premise that individuals are constrained by deep-seated, structural contradictions within social systems that can be critiqued and thereby potentially transformed.

In the context of this research the critical research paradigm forms the basis to guide the methodology selected for the research. In contrast to the positivist and interpretivist approaches which seek to predict or explain the status quo, critical research enables the researcher to critique existing social structures (e.g. information technology projects) and reveal any conflicts and contradictions that may exist (e.g. line managers conflicting with executive managers due to the lack of empowerment for projects creating a pessimistic attributional style) and can potentially be transformed (Orlikowski & Baroudi, 1991, p. 19).

Critical Research

Central to critical research is its attempt to preserve a scientific attitude towards social analysis whilst seeking to understand individuals subjective and inter-subjective meanings by being concerned with causality and the causal mechanisms in social phenomena (e.g. causality of a pessimistic attributional style within the social construct of projects) (Carlsson, 2003, p. 12). Critical research seeking to understand the causality and causal

mechanisms through both interpretative research (e.g. interviews) and complementary quantitative data (Layder, 1993, p. 113).=

Important to critical research is the belief that individuals, organisations and societies are not confined to a particular state and can be transformed (Orlikowski & Baroudi, 1991, p. 19). In the context of critical research, the transformation can be effected by either the (Orlikowski & Baroudi, 1991, p. 21):

- **Researcher** – the researcher goes beyond studying and actively effects change in the phenomena; or
- **Individual** – the individual through self-reflection effects change as researchers do "not have the right, either, to make proposals for prospective action; individual must draw his own conclusion, as far as action is concerned" (Habermas, 1974, pp. 38-39).

However, transformation is not a critical component of critical research (Orlikowski & Baroudi, 1991, p. 21). Indeed, Steffy & Grimes (1986) suggest critical research aims to merely be "an organisational science capable of changing organisational processes" (Steffy & Grimes, 1986, p. 326).

This research is focused on transformation through individual self-reflection (i.e. individual self-reflection on their attributional style and actions they feel appropriate to alter it). This approach is based on the ability of critical research to not only interpret how participants perceive, understand and act towards phenomena but also to apply a particular theoretical framework to penetrate the circumstances that shape them (i.e. the circumstances in an organisation that shape attributional style) (Orlikowski & Baroudi, 1991, pp. 20-21).

In addition to not being confined to a particular state, critical research is based on the premise that things cannot be treated as isolated elements because knowledge is grounded in social and historical practices (e.g. projects exist in time and organisations that give meaning to roles, responsibilities, outcomes and structures) (Orlikowski & Baroudi, 1991, p. 19). For instance, a successful military missile-launching project is only valid in the context of contemporary Defence, but may be considered a failed project in the context of a community organisation. The context dependent on the social reality produced by humans, whilst possessing objective properties dominated by human experiences that are unstable

due to inequalities and conflicts inherent in social forms (Orlikowski & Baroudi, 1991, pp. 19-20).

Features

Critical research is characterised by four important features that must be addressed by the researcher (Dobson, 2007, p. 398).

Acknowledge Ontological Depth Required of the Research

The researcher should acknowledge that society is made up of multiple levels (Dobson, 2007, p. 398). To recognise that society is made up of multiple levels, the model postulated by Layder (1993) and suggested by Dobson (2007) is employed in this research.

Table 4: Levels of society in this research (Based on Layder, 1993, p 114)

Element	Description	Research
Context	Macro social forms	Male dominated ICT environment (Centre for Innovative Industry Economic Research Inc, 2008, p. 3); High ICT project failure rates (Standish Group., 2004); High incidence of depressive symptoms in ICT professionals (Beaton Consulting, 2007); and ICT skills shortage and declining ICT enrolments (AGIMO, 2007, p. 19)
Setting	Intermediate forms of social organisation	Traditional hierarchical project management structures in selected organisation; Cross section of public servants and contractors; Prevalence of projects both outsourced and in house; High incidence of project failure; Inability to retain knowledge from prior projects; Ad-hoc adoption of project management methodologies such as PRINCE2; and High levels of staff turnover.
Situated Activity	Dynamics of social interaction	Face to face interaction dominant; Emphasis on teamwork; Limited communication flow to and from executive management to support workers; and Project participation is non-voluntary.
Self	Individual responses to particular features of their environment and typical situations	Experience frequent project failure which impacts morale and confidence; and Develop experience in projects based around leading edge technologies.

Based on the model postulated by Layder (1993) in the context of this research as presented in Table 4, it is evident that:

- **Context** – society at the macro level for IT projects in this research is characterised by male dominance, high rates of failure, high incidents of depression relative to other professions alongside IT skills shortages;
- **Setting** – society at the organisation level for IT projects in this research is characterised by traditional project hierarchies, balance of contractors and public servants, prevalence of outsourced and in sourced projects, knowledge retention challenges and high staff turnover;
- **Situated Activity** – society at the team level for IT projects in this research is characterised by high levels of face to face communication, teamwork, limited communication channels between tiers in the project hierarchy and non-voluntary project participation; and
- **Self** – the individual involved in IT projects typically develops experience in projects based around leading edge technologies. However, is likely to be involved in projects that are deemed failures.

Through the research, additional information about the context, setting, situated activity and self may surface using the Work Attributional Style Questionnaire.

Avoid Claiming Value Neutrality

The research must acknowledge that it is unachievable and unrealistic to achieve value neutrality (Dobson, 2007, p. 399). Indeed, the researcher acknowledges this due to various factors that include:

- **Project Experience** – prior experience in projects at both support worker and line manager level potentially may bias the researcher against executive managers; and
- **Experience in the Social Organisation** – prior experience in the social organisation (particularly support worker and line manager level) and awareness of issues potentially impacting less powerful demographics (i.e. support workers).

Whilst all efforts have been made to achieve neutrality, factors such as those mentioned make it unrealistic to achieve value neutrality.

Highlight Social Nature of the Research Process and Setting

The researcher should acknowledge social interactions, between the researcher and research participants (Dobson, 2007, p. 399). The researcher acknowledges that the interactions between the researcher and the research participants will be captured through a research process of interviews and focus groups based within the organisation. The research setting characterised by eager volunteers keen to share their experience with the researcher in a relaxed social atmosphere.

Acknowledge the Reasons for the Research

The researcher should acknowledge the personal reasons for the research to enrich and provide an increased understanding of the topic and aims (Dobson, 2007, p. 399). The research is based on the following primary underlying reasons:

- **Involvement in ICT Projects** – the researcher has been involved as both a support worker and line manager in previously failed ICT projects in which he felt depressed due to a lack of suitable empowerment by powerful others (e.g. executive managers). This research can provide insight into this social relationship;
- **Personal Development** – the researcher through numerous ICT research papers prepared for work become increasingly aware that process and organisational issues tend to lead to project failure, not technology. This research provides an invaluable opportunity to examine the social context of the processes and people;
- **Relevance to Practitioners** – practitioners are increasingly interested in organisational dynamics (e.g. staff retention initiatives, work and life balance). Research examining the impact of project outcomes and social relationships (e.g. reflected through attributions for internality) have the potential to provide some invaluable insight for practitioners; and
- **Supervisor Interest** – recent research conducted by my supervisor in this field and his interest in the topic have provided an invaluable motivator for the research.

The research outcome has significant potential to enable self-reflection in participants and to potentially assist practitioners identify areas that they can develop (e.g. communication skills to influence more powerful others).

Methodology

Research approaches suitable for critical research can be classified into two broad categories of qualitative and quantitative research. Prior research by Standing, Guilfoyle, Love & Lin (2006) in the information technology project and attributional style domain is characterised by a quantitative approach based on understanding the numerical representations of attributions made by the individuals through statistical analysis (Thomas, 2003, pp. 1-2). Whilst quantitative research offers several intrinsic strengths (e.g. general descriptions, test hypotheses) it fails to capture the meaning of the attributions (e.g. why did executive managers exhibit a more pessimistic attributional style than support workers, social relationships) as highlighted in the literature review.

Qualitative

In order to capture the meanings of attributions and social relationships, a qualitative research approach will be utilised in this research. Qualitative research can be described as "multi-method in focus, involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense of or interpret phenomena in terms of the meanings people bring to them" (Denzin & Lincoln, 1994, p. 2). This approach is particularly well suited for capturing the knowledge of information technology project participants within their social and cultural context (Myers & Newman, 2007, p. 5).

Method

Qualitative research can employ a variety of research methods. Common methods in information technology and psychology are:

- **Action Research** – "aims to contribute both to the practical concerns of people in an immediate problematic situation and to the goals of social science by joint collaboration within a mutually acceptable framework" (Rapoport, 1970, p. 499);
- **Case Study** - "examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities. The boundaries of the phenomenon are not clearly evident at the outset of the research and no experimental control or manipulation is used" (Benbasat, Goldstein, & Mead, 1987, p. 370);

- **Ethnography** – "involves the ethnographer participating, overtly or covertly, in people's lives for an extended period of time, watching what happens, listening to what is said, asking questions—in fact, collecting whatever data are available to throw light on the issues that are the focus of the research" (Hamersley & Atkinson, 1995, p. 1); and
- **Grounded Theory** – "an inductive, theory discovery methodology that allows the researcher to develop a theoretical account of the general features of a topic while simultaneously grounding the account in empirical observations or data" (Martin & Turner, 1986, p. 141).

Whilst all these research methods are useful in qualitative studies, the intent of the research was not to resolve a problematic situation in an organisational environment (i.e. eliminating action research) or spend extended periods of time in fieldwork research due to prior employment commitments (i.e. eliminating ethnography). Additionally, the research is based on established social psychology and theories (e.g. attribution theory).

In contrast, the "preferred strategy when how or why questions are being posed, when the investigator has little control over events, and when the focus is on contemporary phenomenon within some real life context" (Yin, 2003, p. 1) is a case study. Indeed, in the context of this research why questions are being posed (e.g. Why does attributional style vary as an individual's level of seniority changes for a successful and failed Information Technology project?), the investigator has little control over the individuals past project achievements, self-reflection is individually oriented and project success and failure represent a contemporary phenomenon.

The use of a case study for the purposes of this research provides a proven and important research method in both information technology and social psychology domains (Walsham, 2006, p. 320). Indeed, the ability of a case study to capture the knowledge of practitioners through their experiences (Benbasat et al., 1987, p. 370) is particularly well suited for developing an understanding of individual tendencies in attributional style through deep and comprehensive analysis. The use of two or more methods (e.g. interviews, focus groups) to collect data on the same phenomena capable of ensuring the case study results are valid (Todd, 1979, p. 602).

Case Study

The case study selected for this research is based around interviews and focus groups conducted within a large Commonwealth government department located in the Australian Capital Territory (ACT). The organisation selected due to reasons that include:

- An extensive IT project portfolio;
- Ability to highlight differences in attributional style within the same organisational context;
- Convenience and ability to access enough individuals at each job responsibility level (i.e. support worker, line manager and executive manager); and
- Researchers knowledge of the organisation.

This approach ensured that critical organisational support was available, such as obtaining access to individuals, which resulted in an improved response rate and ability to conduct in-depth interviews (e.g. additional time availability).

The key characteristics of this case study contrasted against that postulated by Benbasat, Goldstein & Mead (1987) are presented in Table 5.

Table 5: Characteristics of selected case study (Based on Benbasat et al., 1987, p 371)

Key Characteristic	Comment
Phenomenon was examined in a natural setting	Research data during the interview phase was collected onsite (typically participants office) whilst focus groups were conducted in a neutral natural setting (e.g. conference facility)
Data was collected by multiple means	Research data was collected using both interviews and focus groups
One or more entities (person, group or organisation) are examined	Research involved ten individuals per job responsibility level for the interviews alongside four focus groups for a single organisation
The complexity of the unit is studied intensively	Research cases were studied intensively to capture any differences and similarities
Case studies are more suitable for the exploration, classification and hypothesis development stages of the knowledge building process	Research explored reasons why differences in attributional style exist which have not previously been explored in the IT project domain
No experimental controls or manipulation was involved	Research involved no experimental controls or manipulation

Key Characteristic	Comment
The investigator may not specify the set of independent or dependent variables in advance	Researcher specified some initial variables in advance to support the research framework (e.g. internality, stability) but these were not exhaustive
The results derived depend on the integrative powers of the investigator	Research results were derived through the integrative powers of the investigator from multiple collection methods (i.e. semi-structured interviews and focus groups)
Changes in site selection and data collection methods could take place as the investigator develops new hypotheses	Research data collection methods (i.e. semi-structured interviews and focus groups) enabled exploration of emergent themes and potential site selection changes
Case research was useful in the study of "why" and "how" questions rather than frequency or incidence	Focused on why similarities and differences existed between the three job responsibility levels
The focus is on contemporary events	Focused on contemporary information technology projects

Based on these key characteristics for case study research it is evident that all the key characteristics except for the researcher specifying a set of independent or dependent variables are exhibited in this research. This difference due to Benbasat, Goldstein & Mead's (1987) key characteristics being based on interpretative research and applied to critical research in the absence of any other comparable models. The variables in the context of this research used to support the research framework (e.g. internality, stability) and deemed acceptable due to the ability of critical research to employ complementary quantitative data (Layder, 1993, p. 113).

Job Responsibility Levels

The job responsibility levels within the case study organisation form the focal point for this research. In particular, the job responsibility levels of support worker, line manager and executive manager are illustrated in Figure 9. These job responsibility levels are indicative of an increase in experience from support worker through to executive manager.

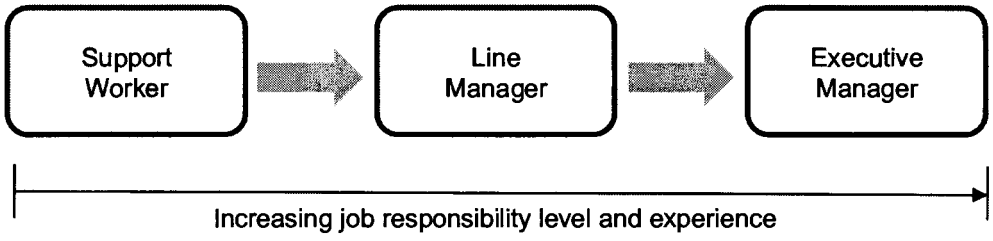

Figure 9: Relationship job responsibility levels and experience

In order to ensure consistency in job responsibility levels between individuals in the organisation, the Association of Professional Engineers, Scientists and Managers (APESMA) job responsibility definition levels developed for the Australian Computer Society (ACS) annual remuneration survey were employed (APESMA, 2007). The APESMA job responsibility levels based around five levels that were aligned to the job responsibility levels in this research as illustrated in Figure 10 in which APESMA level one and two represent support workers, APESMA level three represents line managers and APESMA levels four and five represent executive managers.

Figure 10: APESMA job responsibility level equivalencies in this research

Based on the APESMA job responsibility levels the three job responsibility levels in this research are defined as (APESMA, 2007):

- **Support Worker** – individual who undertakes activities under general direction which requires the application and understanding of information technology;
- **Line Manager** – individual who undertakes information technology work under limited direction and typically performs the role of team leader and shows considerable originality, independence, initiative and judgement; and
- **Executive Manager** – individual who undertakes information technology work that involves a high level of management skills under broad direction (may report direct to a CEO).

The adoption of the APESMA job responsibility levels in this research will enable future case studies to be compared against findings from this research.

Sample

Based on the time constraints imposed on this research a sampling strategy was employed to provide depth and meaning to the case study. Sampling was based around taking a representative part of a population to determine characteristics of a wider population. Sampling can be achieved through various sampling strategies that include (Kerlinger, 1986, p. 110):

- **Purposive Sampling** – sample is selected based on the researchers judgement and deliberate effort to select individuals based on criteria under research; and
- **Probability Sampling** – sample is selected based on probability and is characterised by any individual within a population having an equal and positive chance of being selected.

Whilst probability sampling was considered, purposive sampling enabled the best use of a small number of participants to examine the central issues being studied (i.e. participants could be purposively selected based on their ability to meet the criteria for each job responsibility level and previous involvement in both a failed and successful project) and ensure the quality of the information. In addition LoBiondo-Wood & Haber (1994) support this selection suggesting that purposive sampling is appropriate for exploratory research where the total population is unknown to the researcher (LoBiondo-Wood & Haber, 1994, p. 294). In the context of this research, the population is unknown to the researcher due to the temporary nature of information technology projects and a constantly changing environment.

Purposive sampling enabled a sample of thirty participants to be selected for the interviews and subsequent focus groups from a cross section of the organisation based on the following criteria:

- **Information Technology Project Experience** – participants required previous participation in both a failed and successful information technology project; and
- **Information Technology Job Responsibility Level** – participants were required to be categorised into a job responsibility level (i.e. support worker, line manager or executive manager). This enabled differences between power and the social relationships to be examined.

The research selected a minimum of ten participants for the interviews in each job responsibility level and a minimum of three for each subsequent

focus group. The sample size for the interviews and focus groups are dynamic and capable of being expanded to understand any emergent themes based on the judgement and experience of the researcher (Sandelowski, 1995, p. 182).

Transferability

Transferability represents the ability to generalise the research findings from one context to another (Lincoln & Guba, 1985, p. 110). In order to generalise the research findings Lee and Baskerville (2003) suggest that if the theoretical statements upon which the research is based can be applied and confirmed in the case setting, then the researcher may properly claim that the theory is indeed generalisable to a new setting (Lee & Baskerville, 2003, p. 237). In the context of the research this suggests that the successful application and confirmation of attributional style theory in the case study should enable generalisability to be claimed by the researcher. Indeed, this can be achieved by comparing the research findings against prior quantitative research by Standing, Guilfoyle, Lin and Love (2006) which provides empirically tested and confirmed results using attributional style theory.

Whilst the research approach may ensure a degree of generalisability, positivist researchers could argue that the transferability of this research has been impacted through aspects such as the adoption of a purposive based sampling strategy (Sandelowski, 1995, p. 180). The selection of a purposive sampling strategy (both organisation and participants) argued to impact transferability of the research results.

Whilst transferability may be adversely impacted in this research due to the selection of a non-probability based sampling technique, McGrath (1982) suggests that this may be also be attributable to the following three mutually incompatible desires in qualitative research (McGrath, 1982, p. 74):

- **Realism** – with respect to the context where the evidence is gathered and where it is intended to apply;
- **Precision** – with respect to the measurement and control of behavioural variables; and
- **Generalisability** – with respect to the population to which the evidence applies.

Research seeking to increase any one of these desires ultimately reduces one or both the other two desires (McGrath, 1982, p. 74). The consequence of maximising realism in this research has ultimately translated into reduced transferability and precision. However, Lukka & Kasanen (1995) suggest that transferability can be enhanced, at least in the accounting domain, by enabling the reader to consider the scope of the results by providing (Lukka & Kasanen, 1995, p. 82):

- Theoretical knowledge of the subject area;
- Prior empirical results and their interpretation; and
- The empirical results, and their interpretations, provided by this research.

Based on these three conditions, which are evident in this research (e.g. attributional style theory with prior empirical results from Standing, Guilfoyle, Lin and Love (2006)), we believe that whilst not in the accounting domain, this research has the potential to provide enough insight for readers to compare their context to the research and potentially transfer it to their context based on their judgement (Pickard & Dixon, 2004).

Credibility

Credibility represents the ability to provide enough evidence so that the results speak for the findings (Lincoln & Guba, 1985, p. 290). To enhance credibility in qualitative research numerous strategies can be employed (e.g. triangulation, prolonged engagement, negative case analysis) (Denzin, 1994, p. 513).

Triangulation (source based) forms the primary mechanism to achieve credibility in this research (i.e. interviews and focus groups). Patton (2002) advocates this approach by stating "triangulation strengthens a study by combining methods" (Patton, 2002, p. 247). Triangulation in the context of the research, as illustrated in Figure 11 is based around interviews and focus groups that serve as a powerful mechanism to understand the social relationships between the three job responsibility levels.

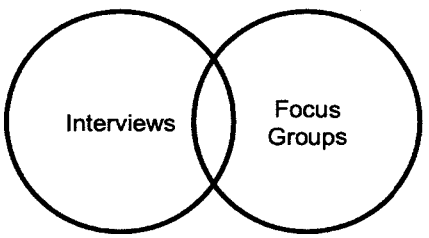

Figure 11: Triangulation of research methods

In addition to triangulation, additional techniques employed in this research include:

- **Participant feedback** – research participants were provided interview transcripts and the researcher's interpretation (e.g. determination of causal dimension of internality was internal or external) within 5 days of the interview. Participants were provided the opportunity to provide feedback if they deemed the researchers interpretation was incorrect. In addition, all research results (i.e. interviews, focus groups) have been provided to participants for peer review and comment;
- **Independent reviewer cross-checking** – an independent reviewer was provided all interview transcripts to crosscheck the researcher's analysis (e.g. categorisation of attributions). Prior to analysis cross-checking being conducted the independent reviewer was provided with a briefing session on the research (e.g. background, significance) and attributional style (e.g. causal dimensions, dimension meanings). The independent reviewer held a double degree of Bachelor of Business (Business Administration) and Bachelor of Information Systems with experience in research and social psychology. The independent reviewers qualifications and experience provided a high level of confidence in the reviewers cross-check findings; and
- **Researcher experience** – the researchers skill, integrity and sensitivity is also a critical component of credibility (Patton, 2002, p. 5). The researcher through his mentoring on the doctoral programme at Edith Cowan University and experience with the Department of Defence - Chief Information Officer Group as a researcher has provided invaluable experience in qualitative research and engaging research participants.

The combination of these techniques is perceived as providing a high degree of credibility to the research.

Dependability

Dependability represents the consistency and reliability of the research based on adherence to a systematic process (Patton, 2002, p. 546). To enhance dependability numerous strategies can be employed in qualitative research (e.g. overlapping methods, inquiry audits) (Denzin, 1994, p. 513). Whilst overlapping methods (achieved through collecting data through both interviews and focus groups) were used in the research, the use of inquiry

audits in which the rigor of the fieldwork is independently audited (e.g. auditor assessment of raw data, reconstruction and synthesis, process notes, dispositions) (Patton, 2002, p. 93) was not employed due to the significant time and cost constraints imposed on this research. This approach in accord with Miles & Huberman (1994) who suggest that due to these reasons inquiry audits are best restricted to only high stake studies (Miles & Huberman, 1994, p. 440).

Whilst a confirmatory audit was not employed, the research has endeavoured to achieve dependability through initiatives that include:

- **Repeatable processes employed** – research followed a similar process for all interviews and focus groups (e.g. recruitment, interviews, feedback); and
- **Independent reviewer cross-checking** – an independent reviewer was provided all interview transcripts to crosscheck the researcher's analysis (e.g. categorisation of attributions). The independent review provided the opportunity to cross-check the researchers processes for qualitative interpretation against an independent reviewers for consistency and reliability.

These initiatives in conjunction with triangulation are capable of providing a high degree of dependability given the research constraints.

Confirmability

Confirmability represents the extent to which the research results can be confirmed or corroborated and is typically based on audit trails through the use of written field notes, field diary, process and personal notes (Denzin, 1994, p. 513). In the context of this research confirmability has been achieved through:

- **Member Checking** – interview participants were provided with interview transcripts and findings for both personal self-reflection, comment and confirmation;
- **Provision of Critical Examples** – critical examples to support the research findings have been included in the dissertation (e.g. enable readers to trace assertions to specific sources); and
- **Archival** - archival of transcripts, process notes and analysis products for one year.

These initiatives should provide a high degree of conformability to the research.

Ethics

Ethics approval was sought from the Edith Cowan University Human Research Ethics Committee to ensure that ethical issues or obligations in relation to the data collection had been satisfactorily addressed by the researcher (Edith Cowan University, 2007). The Graduate School in conjunction with the Human Research Committees consequently provided formal approval on the 22nd May 2007 with a subsequent extension for data collection approved on the 5th January 2008 (see Appendix A).

In order to comply with the guidelines outlined by the Human Research Ethics Committee the researcher implemented various measures to ensure high ethical standards were maintained throughout the research. These measures included:

- **Information Letter to Participants** – an information letter outlining the nature and objectives of the research was provided to each potential participant (see Appendix B);
- **Informed Consent** – informed consent was obtained from the research participants prior to the interviews and focus groups (see Appendix C);
- **Participant Anonymity and Trust** – participants remained anonymous and trust was established and maintained throughout the research (e.g. research updates, conference presentations, research findings);
- **Ensuring Participants were Volunteers** – participants were volunteers that ensured they contributed without undue duress; and
- **Neutrality** – researcher maintained neutrality and acted in a non-judgemental manner.

The researcher's emphasis on ethics ensured participants felt comfortable with the research. This was particularly important given the personal nature of the research interviews.

Technique

The research used a combination of interviews and focus groups to capture individual perspectives and gain an insight into any differences that may emerge between the job responsibility levels. Whilst other options such as document analysis were initially considered, the resource constraints on

this research (i.e. time and money) alongside several other factors (e.g. document release ability, lack of project closure reports) prevented this from occurring.

The interviews and focus groups form an integral component of the case study process as presented in Table 6. In particular, they form the basis of the data collection and shaping the hypothesis steps.

Table 6: Eight step case study process (Based on Eisenhardt, 1989, p 533)

Step	Activity
Getting started	Definition of the research questions
Selecting case	Specified population
Crafting instruments and protocols	Multiple data collection methods
Data Collection	Overlap data collection (i.e. interviews and focus groups) and analysis
Analysing data	Within case analysis for patterns
Shaping hypothesis	Search for evidence for "why" and evaluation of constructs
Enfolding literature	Comparison with similar literature and conflicting literature
Reaching closure	Theoretical saturation when possible

Based on the case study process postulated by Eisenhardt (1989), the interviews were conducted subsequent to the data being analysed and then presented to the research focus groups to shape the hypotheses.

Interviews

The Interviews formed an integral data collection component of the research. The interviews were based around a semi-structured interview format in which some questions were prepared beforehand (based primarily on the Work Attributional Style Questionnaire) although a degree of improvisation was needed (Myers & Newman, 2007, p. 4). The semi-structured interview provided a fairly open framework which allowed for focused, conventional, two way communication that provided benefits that included (Food and Agriculture Organisation of the United Nations, 2007):

- **Comparability** – ability to provide a interview structure which was comparable between participants;
- **Themes** – ability to develop questions based on themes whilst being able to probe for insights into specific issues;
- **Sensitive Issues** - ability to explore sensitive issues that may not be revealed with questionnaires; and

- **Two Way Communications** - ability to encourage two-way communications (e.g. participants can ask the researcher questions).

Whilst interviews provide a well established research technique, interviews are also associated with problems and pitfalls that include lack of trust, artificiality of interview, Hawthorne effect and ambiguity of language (Myers & Newman, 2007, pp. 4-5). To minimise these problems and pitfalls the suggested criteria for researchers/interviewers by Myers & Newman (2007) were addressed in the research as presented in Table 7.

Table 7: Criteria for researchers/interviews (Based on Myers & Newman, 2007, pp. 16-17)

Criteria	Comment
Situating the researcher as actor	Researcher provided background information to all participants about himself (e.g. his personal ICT experience, impact of failure on him, passion for this research)
Minimise social dissonance	Researcher minimised social dissonance in the interviews through several techniques that included dressing appropriately, using appropriate language, being punctual and accommodating (e.g. re-scheduling appointments where needed)
Represent various "voices"	Researcher interviewed participants at varying job responsibility levels and avoided "elite" bias
Everyone is an interpreter	Researcher recognises that individuals are creative interpreters of their world as he is of his.
Use Mirroring in questions and answers	Researcher employed mirroring (i.e. taking words and phrases the subjects use in constructing subsequent question or comments) which enabled the general questions to become more specific. This was extensively applied on the open-ended research questions.
Flexibility	Researcher was flexible with the semi-structured interview and took into account differing subject attitudes (e.g. awed, bored, deceiving, fatigued and shy) and responded accordingly.
Confidentially of disclosure	Researcher ensured all interviews complied with ethical guidelines (e.g. respect, confidentially, permissions)

The criteria articulated by Myers & Newman (2007) and addressed in this research ensured that problems and pitfalls that typically plague researchers were successfully averted in this research. In addition to addressing the criteria postulated by Myers & Newman (2007) a series of pilot interviews were also conducted to identify any other problems and

pitfalls such as lack of time, participant understanding of the questions and responsiveness to potentially personal questions.

Sequence

The interviews are based around the following sequence of events:

- **Invitation** – potential participants (volunteers) are identified (e.g. referrals, colleagues) and invited to participate in the research through a introductory letter explaining the nature and objectives of the research (see Appendix B);
- **Scheduling** – participants accepting the invitation were contacted to arrange a date, time and location (typically their office or a cafe within walking distance from their office);
- **Interview (Informed Consent)** – participants were provided a "Informed Consent Form" (see Appendix C) prior to the interview commencing to read, pose questions about and acknowledge prior to the interview commencing;
- **Interview (Voice Recorder)** – participants were asked whether a voice recording device could be used during the interview;
- **Interview (Brief and Data Collection)** – participants were provided a brief overview of the research and asked if they had any questions. At the conclusion of this brief the semi-structured interview commenced (see Appendix D);
- **Transcription** – interviews were transcribed into electronic format within five days of the interview, analysed and sent back to the participant for review;
- **Analysis** – interviews were analysed to determine attributional tendencies (e.g. internal or external attribution for success) and reasons using analysis matrices (see Appendix E). The initial analysis formed the basis for the interview feedback provided to all participants; and
- **Feedback** – interview feedback (see Appendix F) was provided to each participant to enable self-reflection. Participant self reflection provided the opportunity for change to occur in the phenomena being studied (i.e. attributional style) as postulated under a critical research methodology (Habermas, 1974, pp. 38-39).

The actions of the researcher through this sequence of activities sought to ensure each interview was conducted in a manner that could be replicated.

Pilot Interviews

The pilot interviews involved four participants (i.e. two support workers and two line managers). These interviews enabled potential issues such as time overruns to be identified prior to involving executive managers who were typically constrained for time and availability. Based on the pilot interviews various minor changes were made to the semi-structured interview questions to ensure that the interviews could be conducted within a one-hour time frame (for more details refer to the instrument section). The results were subsequently analysed and included in the research findings.

Analysis

The interviews were analysed throughout the interview stage, with an in-depth analysis of the data undertaken at the conclusion of all the interviews. The sequence of analysis employed in this research enabled the researcher to generate new ideas throughout the research whilst ensuring consistency was achieved through the holistic data analysis undertaken at the conclusion of all the interviews.

The analysis of the interviews in this research followed the following sequence:

- **Data Collection** - raw data was collected from the interviews;
- **Data Transcription** - each interview was transcribed;
- **Preliminary Data Analysis** - each interview transcript was assessed against the Work Attributional Style Questionnaire (WASQ) causal dimensions of internality, stability, globality and controllability (e.g. the participant attributed success to internal, stable, global and controllable causes). To aid and provide consistency across the interviews the primary reasons presented in Appendix E for each causal dimension were utilised and based on the WASQ. For instance, the semi-structured interviews for the causal dimension of controllability for a successful project were deemed controllable if the participants response indicated it was "totally under my control" or "controllable" and deemed uncontrollable if the participants response indicated it was "totally outside my control" or "uncontrollable";

- **Transcript and Preliminary Data Analysis Findings Sent to Participants** - the findings from the preliminary data analysis formed the basis of the interview feedback form (see Appendix F) provided to each participant alongside their transcript;
- **In-Depth Data Analysis** - an in-depth data analysis was conducted at the conclusion of all interviews. The in-depth data analysis included:
    - Analysing each interview definition, cause and causal dimension for themes (e.g. personal success in the definitions, reason for the stable attributions). Each theme identified was recorded;
    - Identified themes were analysed and aggregated into broader themes where possible. The resultant themes were crosschecked with literature where applicable (e.g. objectives of project success) and formed the basis for the coding matrices in Appendix E. In particular, the reasons for project success and the secondary reasons for the causal dimension's (e.g. individual influence);
    - Each interview was re-analysed against the coding matrices in Appendix E. The re-analysis of the interviews ensured all interviews were compared against the same themes; and
    - Attributional tendencies for the causal dimensions (e.g. internal or external tendencies for support workers for successful projects) were categorised as low (i.e. unlikely to be a tendency), low to high (uncertain which way the tendency is likely) and high (likely to be the tendency). Low tendencies were those in which less than or equal to thirty percent of participants exhibited that tendency, low to high were those in which thirty one to sixty nine percent of participants exhibited that tendency and high were those in which seventy percent or higher exhibited that tendency.

The in-depth analysis of the interviews provided themes and patterns that were subsequently explored in the focus groups.

Focus Groups

The focus groups were used to examine emergent themes from the interviews, particularly ones in which differences between the job responsibility levels were evident. Focus groups provide an ideal technique to capture high quality data in a social context where individuals can

express views in the context of others without consensus being required (Patton, 2002, p. 386). Due to interview style of focus groups, many of the criteria used in the interviews (e.g. minimise dissonance, flexibility) were transferable to the focus groups.

Benefits of focus groups include (Patton, 2002, p. 386):

- **Cost Effective Data Collection** - data can be gathered from many individuals at once;
- **Interactions Enhance Data Quality** – interactions amongst participants provide checks and balances on each other;
- **Rapid Assessment of View** – views can rapidly be assessed as shared or divergent amongst participants; and
- **Enjoyable** – focus groups tend to be enjoyed by participants due to the social context.

In the context of critical research it also provides an opportunity for the "powerful" to listen to the issues experienced by junior staff (e.g. support workers) and potentially self-reflect on those issues. Whilst focus groups offer various benefits, several limitations are evident that include time frame to conduct focus groups can be considerable, response time for individuals may be limited and a dominant participant may overpower less dominant participants.

Sequence

The focus groups were based around the following sequence of events:

- **Invitation** – potential participants (volunteers) from the interviews were identified and invited to participate in the focus groups through a personal telephone call or email;
- **Scheduling** - participants accepting the invitation were contacted to identify a potential focus group convenient to them (typically a conference room in the organisation). Each focus group was limited to six participants with four focus groups (oriented around different sub groups) being conducted. The small focus group sizes were ideally suited for research studying human behaviour (Bloor, Frankland, Thomas, & Robson, 2001, p. 27). Each focus group conducted had a requisite minimum of three participants;

- **Background Information** – participants attending the focus group were provided a list of potential discussion questions (see Appendix G) and the research findings from the interviews several days prior to their allocated focus group;
- **Focus Group (Voice Recorder)** – participants were advised prior to the focus group that a voice recorder may be used;
- **Focus Group (Brief and Data Collection)** – participants were provided a brief overview of the research and asked if they had any questions. At the conclusion of this brief the focus group commenced and typically lasted one to two hours;
- **Transcription** – focus groups were transcribed into electronic format within five days of the focus groups; and
- **Feedback** – focus groups findings from the research were provided to all participants for feedback and comment.

To ensure the successful conduct of the focus groups the researcher drew upon his practical experience in conducting focus groups (e.g. planning, booking resources and moderating).

Analysis

The focus groups were heavily involved in data analysis. In particular, the focus group participants were tasked with categorising all the idea's presented in response to each focus group question into themes. The categorised themes aggregated by the researcher to provide a unified set of themes for the thesis.

Instrument

The primary instrument used in the research was the Work Attributional Style Questionnaire that was employed during the semi-structured interviews.

Work Attributional Style Questionnaire

The Work Attributional Style Questionnaire (WASQ) postulated by Ashforth & Fugate (2006) is based around twelve hypothetical events in which six are positive and six are negative (Ashforth & Fugate, 2006, p. 16). Due to the qualitative nature of the research the WASQ was modified based on arguments raised in the literature review.

The primary modification to the WASQ is the adaption of the quantitative questionnaire to a qualitative based semi-structured interview. This modification critical in order to address the second research question based around reasons why attributional style potentially may vary between individuals at varying levels of seniority. The modification provided the opportunity for individuals to provide a reason for each resultant attribution (e.g. due to my ability to manage the schedule and budget effectively) instead of purely the resultant attribution (e.g. internal).

To ensure comparability with the original WASQ the four causal dimensions were retained with only minor modifications to the original questions (e.g. removal of the seven point scale, introduction of a why component). An example of this is illustrated below for the causal dimension of controllability (Ashforth & Fugate, 2006, p. 17):

- **Original WASQ (Quantitative)** - Is the cause something over which you have control, or is it something outside of your control? (circle one number)

Totally under my control (Controllable)	1 2 3 4 5 6 7	Totally outside of my control (Uncontrollable)

- **Modified WASQ (Qualitative)** - Was this cause something over which you had control? Why?

In addition to this modification the WASQ was also adapted to incorporate actual events experienced by participants instead of hypothetical events. The utilisation of actual events provided participants the ability to reflect upon the reasons for the emotional and behavioural impacts they experienced in relation to an IT projects success or failure whilst removing unrealistic optimism exhibited through hypothetical events (Armor & Sackett, 2006, p. 583) and providing comparability with Standing, Guilfoyles, Lin & Loves (2006) research based on the Occupational Attributional Style Questionnaire.

Refinement

The modified WASQ provided the researcher with an instrument to explore emergent themes and gain an insight into reasons behind various attributions not possible with the original WASQ. To ensure the interviews did not exceed one hour the modified WASQ was based around four events (i.e. two positive and two negative) in contrast to the original twelve events

(i.e. six positive and six negative). Based on the pilot tests for the interviews the events were further reduced from four to two (i.e. one positive and one negative). The event reductions stemming from the interviews exceeding the one hour time limit by thirty minutes to one hour, results tending to be similar (e.g. both failed projects events tended to be attributed to external causes) and participant discontent in answering questions which they perceived were identical, but in a slightly varied context.

In addition to identifying time overruns, the pilot interviews also indicated that a modification to the original WASQ which involved separating the internality question into the following two distinct questions (primarily to examine self-serving attributions) impacted data analysis:

- To what extent was the cause due to something about you?
- To what extent was the cause due to something about other people or circumstances?

Fortunately, the responses clearly tended to attribute failure to something about them or to other people or circumstances. The results were therefore included in the research findings and the question was combined into a single question. The final modified WASQ used in the research based on the pilot tests is included in Appendix D.

Summary

The critical research paradigm upon which the research is based provides the opportunity to critique any deep seated contradictions that constrain individuals within a project environment and potentially act as a catalyst for transformation (Orlikowski & Baroudi, 1991, pp. 5-6): The critical research paradigm influencing the research methodology, method, technique and instruments as illustrated in Figure 12.

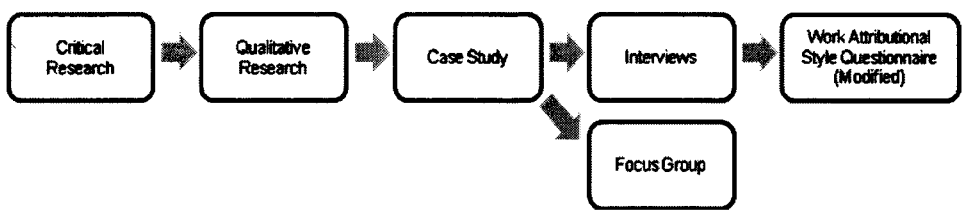

Figure 12: Research methodology

Based around a single case study the research employed triangulation based around a series of interviews and focus groups. The interviews involved thirty participants, ten in each job responsibility level, that were based around semi-structured interviews using a modified Work

Attributional Style Questionnaire. The interview findings were explored through four focus groups comprised of volunteers from the three job responsibility levels.

Chapter 4: Research Findings (Interviews)

In this chapter:

"Never regard study as a duty, but as the enviable opportunity to learn to know the liberating influence of beauty in the realm of the spirit for your own personal joy and to the profit of the community to which your later work belongs."

– Albert Einstein

In this chapter, I will provide the findings for this research based on the semi-structured interviews conducted for Support Workers (SW), Line Managers (LM) and Executive Managers (EM). The chapter predominantly examines the interview findings for the causal dimensions of internality, stability, globality, controllability and the resultant attributional styles. The chapter concludes with a summary of the major interview findings in the context of the research questions.

Demographic Information

The interviews involved thirty participants who were purposively selected based on their job responsibility level. The number of participants interviewed in each job responsibility level is presented in Table 8.

Table 8: Number of participants interviewed in each job responsibility level

Sample	Number of Participants		
	SW	LM	EM
Interviews	10	10	10

Based on the number of participants it is evident that each job responsibility level is represented equally in this research. In particular, ten support workers, line managers and executive managers.

The remainder of this section provides an overview of selected demographic variables for the participants collected during the interviews.

Gender

The gender composition for interview participants in each job responsibility level is presented in Table 9.

Table 9: Gender composition of interview participants

Gender	% (Participants)		
	SW	LM	EM
Female	40 %	20 %	30 %
Male	60 %	80 %	70 %

Based on the gender composition of interview participants it is evident that all job responsibility levels interviewed tended to be male. This bias appears to be indicative of the gender imbalance currently evident in the Information Technology profession (Centre for Innovative Industry Economic Research Inc, 2008, p. 3).

Age

The age composition of interview participants in each job responsibility level is presented in Table 10.

Table 10: Age composition of interview participants

Age (Years)	% (Participants)		
	SW	LM	EM
20 to 29	70 %	40 %	30 %
30 to 39	30 %	40 %	10 %
40 to 49		10 %	30 %

Age (Years)	% (Participants)		
	SW	LM	EM
50 to 59		10 %	30 %

Based on the age composition of interview participants it is evident that the median age of support workers was twenty to twenty nine, line managers was thirty to thirty-nine and executive managers was forty to forty-nine. The increase in age with job responsibility level is inline with traditional hierarchical workplace structures reflected in the selected case study organisation (Fenstermacher & Kleiner, 1999, p. 13).

Role

The roles of interview participants in each job responsibility level are presented in Table 11.

Table 11: Roles of interview participants

Role	% (Participants)		
	SW	LM	EM
Desktop/Project Support	100 %		
Network / Systems Engineer		20 %	
Strategist		20 %	
Manager (Team and Project)		50 %	
Business Analyst		10 %	
Director			80 %
Senior Business Analyst			10 %
Regional Manager			10 %

Based on the roles of the interview participants it is evident that support workers were predominantly desktop/project support, line managers were predominantly managers and executive managers were predominantly directors. The increase in managerial responsibility with job responsibility is inline with traditional hierarchical workplace structures reflected in the selected case study organisation (Fenstermacher & Kleiner, 1999, p. 13).

Duration of Employment in Current Role

The duration of employment for participants in their current role is presented in Table 12.

Table 12: Duration of employment in current role for interview participants

Duration (Years)	% (Participants)		
	SW	LM	EM
0 to 1	40 %	30 %	20 %

Duration (Years)	% (Participants)		
	SW	LM	EM
1 to 2	60 %	50 %	40 %
3 to 4			10 %
5 to 6		10 %	10 %
7 to 8		10 %	10 %
9 to 10			
11 to 12			
13 to 14			
15 to 16			
17 to 18			
19 to 20			10 %

Based on the duration of employment in their current role it is evident that the interview participants interviewed had a median duration of employment in their current role of one to two years.

Duration of Employment in Information Technology

The duration of employment in Information Technology for participants in each job responsibility level is presented in Table 13.

Table 13: Duration of employment in Information Technology for interview participants

Duration (Years)	% (Participants)		
	SW	LM	EM
0 to 1	10 %	10 %	
1 to 2	60 %	10 %	10 %
3 to 4	10 %	10 %	
5 to 6	10 %		10 %
7 to 8	10 %	30 %	30 %
9 to 10		10 %	10 %
11 to 12		10 %	
13 to 14			
15 to 16			
17 to 18			20 %
19 to 20			20 %

Based on the duration of employment in Information Technology of interview participants it is evident that the median duration of employment for support workers is one to two years, line managers is seven to eight years and executive mangers is seven to ten years. The increase in duration of employment in Information Technology with job responsibility is inline with prior research (Fenstermacher & Kleiner, 1999, p. 13).

Highest Tertiary Qualification

The highest tertiary qualification for participants in each job responsibility level is presented in Table 14.

Table 14: Highest tertiary qualifications for interview participants

Highest Tertiary Qualification	% (Participants)		
	SW	LM	EM
None	30 %	20 %	10 %
Certificate	30 %	10 %	10 %
Diploma	30 %	10 %	
Degree	20 %	30 %	30 %
Postgraduate		30 %	50 %

Based on the highest tertiary qualifications of interview participants, it is evident that the median tertiary qualification for support workers was certificate level, line manager's degree level and executive manager's postgraduate level. The increase in tertiary qualifications with job responsibility level appears largely based around an increased emphasis on the development of managerial and business skills reflected through an increased number of management and business qualifications.

Sector of Employment

The sector of employment for the participants in each job responsibility level is presented in Table 15.

Table 15: Sector of employment for interview participants

Employment Sector	% (Participants)		
	SW	LM	EM
Private	20 %	30 %	20 %
Public	80 %	70 %	80 %

Based on the sector of employment for interview participants it is evident that all job responsibility levels tended to be employed in the public sector. The dominance of public sector participants in this research is representative of the large Commonwealth government department selected for this case study.

Summary

The research involved thirty semi-structured interviews based around ten participants in each job responsibility level (i.e. support workers, line managers and executive managers). The demographic profile of the

participants in this research is presented in Table 16. Unsurprisingly, the research was biased toward male participants. The bias is indicative of the gender imbalance currently evident in the IT profession (Centre for Innovative Industry Economic Research Inc, 2008, p. 3).

Table 16: Participant profile (median and dominant values)

Demographic Variable	Job Responsibility Level		
	SW	LM	EM
Gender	Male	Male	Male
Age (Years)	20 - 29	30 - 39	40 - 49
Role	Desktop Support	Manager	Director
Duration of employment in current role (Years)	1 - 2	1 – 2	1 - 2
Duration of employment in IT (Years)	1 - 2	7 – 8	7 - 10
Highest tertiary qualification	Certificate	Degree	Postgraduate
Sector of employment	Public	Public	Public

Based on the demographic information collected during the interviews it is evident that the increase in age, role, duration of employment in current role, duration of employment in IT and tertiary qualifications tend to reflect increased experience and seniority.

Outcome

The project outcome is dependent on how individuals perceive project success and failure. To ascertain how individuals perceive project success and failure each interview participant was asked the following interview questions:

- How would you define project success?
- How would you define project failure?

The interview responses were then categorised based on job responsibility level and then categorised into the objectives of project management, product and personal success identified through the literature review. Due to the complexity in objectively categorising these definitions and the extensive research into project management and product success, only a subset of the results are included in this thesis (i.e. meeting cost objectives and personal success).

Support Workers

The interview definitions of project success and failure indicate that support workers include project management, product and personal success in their definitions. However, support workers did not include any reference to meeting cost objectives in their definitions. This was surprising given that meeting time, cost and quality objectives are typically encapsulated within definitions for project success and failure in literature.

Due to the limited research on personal success, the interview definitions encompassing personal success and failure for projects by support workers are presented in Table 17.

Table 17: Responses for personal success objectives by support worker

Objective		Evidence and Participant
Success	Individual objectives achieved	"You achieve your objectives" [SW1] "Job well done" [SW3] "Walk away feeling proud" [SW8]
Failure	Failure to achieve individual objectives	"Loosing" [SW2] "Not feeling the job is done right" [SW3] "Not doing job properly" [SW8] "A lot of work for nothing" [SW10]

Both the responses for project success and failure provide evidence that support workers tend to include personal success objectives within their definitions. Personal success appears to be based around emotions (e.g. walking away proud), abilities (e.g. job well done) and self-worth (e.g. loosing).

Line Managers

The interview definitions of project success and failure indicate that line managers include project management, product and personal success in their definitions. However, line managers unlike support workers did include meeting cost objectives in their definitions for project success and failure as presented in Table 18.

Table 18: Responses for meeting cost objectives by line managers

Objective		Evidence and Participant
Success	Meeting cost objectives	"Meets the expected budget" [LM1] "Within budget" [LM2] "On budget" [LM4] "On budget" [LM5]
Failure	Failure to meet cost objectives	"Project has gone over budget" [LM1]

Both the responses for project success and failure indicate that line managers are aware of the importance of meeting cost objectives to the project outcome.

The interview responses for project success and failure did not contain any evidence of personal success or failure for line managers.

Executive Managers

The interview definitions for project success and failure indicate that executive managers include project management, product and personal success in their definitions. However, executive managers unlike support workers did include meeting cost objectives in their definitions for project success and failure as presented in Table 19.

Table 19: Responses for meeting cost objectives by executive managers

Objective		Evidence and Participant
Success	Meeting cost objectives	"To cost" [EM1] "Budget" [EM6] "Meeting expectations, budget" [EM7] "Delivered required capability on time and budget" [EM10]
Failure	Failure to meet cost objectives	"Cost" [EM1] "Not meeting expectations, budget" [EM7]

Both the responses for project success and failure indicate that executive managers are aware of the importance of meeting cost objectives to the project outcome.

Due to the limited research on personal success, the interview definitions encompassing personal success and failure for projects are presented in Table 20.

Table 20: Responses for personal success objectives by executive managers

Objective		Sub Objective
Success	Individual objectives achieved	"Pride... Joy... bragging" [EM2] "I win" [EM4]
Failure	Failure to achieve individual objectives	"Self absorbed in my own ability" [EM2]

Both the responses for project success and failure provide evidence that executive managers include personal success and failure objectives within their definitions. Personal success appears to be based around emotions (e.g. pride, joy), abilities (e.g. own ability) and self-worth (e.g. I win).

Summary

The interview definitions for project success indicate that support workers, unlike line and executive managers, did not associate project success and failure with meeting cost objectives. In addition, interview definitions of project success and failure provided by support workers and executive managers provide evidence of personal success based around emotions (e.g. pride, joy), abilities (e.g. achieve objectives, job done right) and self-worth (e.g. losing, winning).

Cause

To ascertain the cause that characterised the participant's selected successful and failed project, interview participants were asked the following questions:

- What would you consider the main cause for the projects success?
- How would you define [cause]?

The interview responses were then categorised based on job responsibility level, cause and whether the cause was process or people related. The interview participant's definition for the cause was then used to ensure the participant's intent was correctly aligned to accepted terminology and also to establish additional contextual information that characterised the project.

Support Workers

The cause and associated definition provided by support workers for their selected successful project is presented in Table 21.

Table 21: Cause and definition for selected successful project by support workers

Cause		Definition and Participant
Process	Documented requirements	"Can just walk in and actually do the job" [SW1] "Knowing what they're job was all about. Knowing that they had to do and why they had to... reason for project." [SW2] "Focusing on what was needed" [SW3] "Information. Knowing all requirements" [SW5] "Understand mission critical business requirements" [SW6]
	Schedule planning and/or management	"Contingencies planned for – test, plan and so forth" [SW4] "Sufficient planning... Remould as going through" [SW8] "Schedule management" [SW9]
People	Effective project management	"Management... Everyone needs goals" [SW7] "Control" [SW10]

Based on the causes for the selected successful projects it is evident that the causes were biased towards process (i.e. documented requirements and schedule planning/management) instead of people (i.e. effective project management) related. Whilst not significant, it does suggest that support workers are potentially more likely to attribute success to processes that enabled them to achieve successful task outcomes rather than people.

The cause and associated definition provided by support workers for their selected failed project is presented in Table 22.

Table 22: Cause and definition for selected failed project by support workers

Cause		Definition and Participant
Process	Ineffective schedule planning and/or management	"Do not plan properly" [SW2] "Time and effort under estimated" [SW3] "Not enough communication... developed in isolation" [SW8] "Lack of schedule management. Staff impacted" [SW9]
	Lack of documented requirements	"Lack information gathering. Not knowing requirement" [SW5] "Fail to understand critical business requirements" [SW6]
People	Lack of executive management support	"No support for us by either our company or the people contracted to" [SW1] "Management not communicating, need to listen, talk" [SW10]
	Weak project manager	"Poor management... Budget blow out. Stretch staff" [SW7]

Cause		Definition and Participant
	No stakeholder involvement	"Lack of testing and lack of training" [SW4]

Based on the causes for the selected failed project it is evident that the causes tend to be balanced between process (i.e. ineffective schedule planning/management, lack of documented requirements) and people (i.e. lack of executive management support, weak project manager, no stakeholder involvement) related. Whilst not significant, it does suggest that support workers are potentially equally as likely to attribute failure to processes or people.

In addition to the cause for the support workers selected failed project, it is evident that the accompanying definitions tended to support the stated cause. The only potential exception was for the cause "No stakeholder involvement" in which the participant defined it as a "lack of testing and lack of training". Based on further discussion this was ascertained that stakeholders were not involved in testing or training initiatives conducted by the project.

Line Managers

The cause and associated definition provided by line managers for their selected successful project is presented in Table 23.

Table 23: Cause and definition for selected successful project by line managers

Cause		Definition and Participant
Process	Documented requirements	"Know where you are going" [LM3] "Look at all views and angles" [LM5] "Central business plans and objectives" [LM6] "Accurate requirements being documented" [LM10]
	Schedule planning and/or management	"Obtaining necessary planning. Identify components" [LM4]
People	Effective project manager	"Keeping them informed in a way that is relevant and understandable" [LM2] "Getting involved at every decision point" [LM8]
	Stakeholder involvement	"Speaking to people who project is designed around" [LM1]
	Teamwork	"Drive of the people. Vision" [LM7] "Able to work well, communicate, share ideas" [LM9]

Based on the causes for the selected successful project it is evident that the causes tend to be balanced between process (i.e. documented requirements, schedule planning/management) and people (i.e. effective

project manager, stakeholder involvement, teamwork). Whilst not significant, it does suggest that line managers are potentially equally as likely to attribute success to processes or people.

The cause and associated definition provided by line managers for their selected failed project is presented Table 24.

Table 24: Cause and definition for selected failed project by line managers

Cause		Definition and Participant
Process	Ineffective schedule planning and/or management	"You always need room to move" [LM2] "Not obtaining necessary planning. Not identifying all components" [LM4]
	Lack of documented requirements	"If you don't know where you are going... can't get their" [LM3] "Not looking at how to mould and craft solution - Like designed a tool to use – seen different ways" [LM5] "Central business plans and objectives" [LM6] "Constantly changing the scope of the project" [LM8]
	Lack of change control processes	"Arrogance by management, lack of input, no source control and lack of leadership" [LM7]
People	Lack of executive management support	"Commitment of time and resources" [LM10]
	Weak project manager	"Communications between team members, clients and executive management" [LM9]
	No stakeholder involvement	"Not speaking to people who project is designed for" [LM1]

Based on the causes for the selected failed project it is evident that the causes were biased towards process (i.e. ineffective schedule planning/management, lack of documented requirements, lack of change control processes) instead of people (i.e. lack of executive management support, weak project manager, no stakeholder involvement) related. Whilst not significant, it does suggest that line managers are potentially more likely to attribute failure to processes that did not enable them to achieve the desired successful outcome.

Executive Managers

The cause and associated definition provided by executive managers for their selected successful project is presented in Table 25.

Table 25: Cause and definition for selected successful project by executive managers

Cause		Definition and Participant
Process	Documented requirements	"Functional - what solution is required to do" [EM1]
	Effective governance	"Governance" [EM10]
People	Effective project manager	"No surprises. Control. Understanding the environment. Team strength and weaknesses" [EM4]
	Executive management support	"Understanding from people who are at the top" [EM2] "Provision of resources" [EM3] "Management support" [EM5]
	Stakeholder involvement	"Must work collectively to achieve satisfaction" [EM6] "Ensuring their needs are met" [EM7] "Working with construction builders for building" [EM9]
	Teamwork	"People work simultaneously to achieve working goal" [EM8]

Based on the causes for the selected successful projects it is evident that the causes were biased towards people (i.e. effective project manager, executive management support, stakeholder involvement, teamwork) instead of process (i.e. documented requirements, effective governance) related. Whilst not significant, it does suggest that executive managers are potentially more likely to attribute success to people that enabled the project to achieve its desired outcome rather than the underlying processes.

The cause and associated definition provided by executive managers for their selected failed project is presented in Table 26.

Table 26: Cause and definition for selected failed project by executive managers

Cause		Definition and Participant
Process	Communication breakdown among stakeholders	"Failure to communicate" [EM6]
	Lack of documented requirements	"Wasn't clear solution ... Could only see the future." [EM9]
People	Lack of executive management support	"Lack of understanding from people who are at the top" [EM2] "Withdrawal of resources – people, money" [EM3] "Management – lack of support" [EM5] "Sway creates whether or not it is done" [EM7]
	Weak project manager	"Poor management of capability" [EM10]

Cause		Definition and Participant
	No stakeholder involvement	"Lack of sufficiently wide consultation. Poor initiation phase... Lack of buy-in or formal commitment" [EM1] "Misunderstanding by clients" [EM4]
	Team members lack requisite skills	"Employer expects them to do stuff without knowledge" [EM8]

Based on the causes for the selected failed projects it is evident that the causes were biased towards people (i.e. lack of executive management support, weak project manager, no stakeholder involvement, team members lack requisite skills) instead of process (i.e. communication breakdown among stakeholders, lack of documented requirements) related. Whilst not significant, it does suggest that executive managers are potentially more likely to attribute failure to people that did not enable them to achieve the desired successful outcome.

Summary

The causes that characterised the participant's selected successful and failed project provided evidence that executive managers are more likely to attribute project success and failure to people related causes relative to support workers and line managers as illustrated in Figure 13.

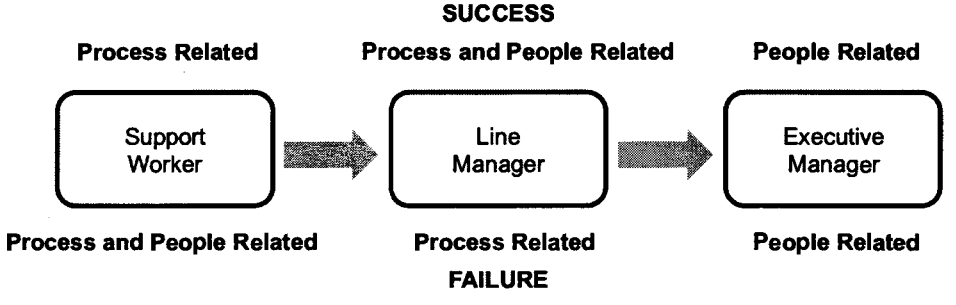

Figure 13: Cause transition from process to people related with increased responsibly

The causes that characterised the process related causes tended to be oriented around documented requirements and schedule planning and/or management for the successful projects and lack of documented requirements and lack of schedule planning and/or management for the failed projects. Conversely, the people related causes tended to be oriented around effective project managers and teamwork for the successful projects and lack of executive management support, weak project manager and lack of stakeholder involvement for failed projects. Both the causes for project success and failure tend to closely reflect the most frequently cited

causes of project success and failure in project management literature (e.g. Kappelman, McKeeman & Zhang (2006), Standish Group (2004)).

Internality

The causality dimension of internality is based on whether the individual perceived the cause was due to something about them (internal) or due to other people or circumstances (external). To determine the causal dimension of internality each participant was asked the following questions for both a successful and failed project:

- Was the [cause] due to something about you, or due to something about other people or circumstances? Why?

The interview responses were then categorised based on job responsibility level and then categorised as either being an optimistic attribution (i.e. internal attributions for success and external attributions for failure) or pessimistic attribution (i.e. external attributions for success and internal attributions for failure). The interview responses were then analysed to understand the attributional tendencies and reasons for the attributions.

The categorised attributions were independently verified by each participant and through an independent reviewer (see Appendix H). The independent reviewer fully supported the researchers categorisations of the interview transcripts into the two categories of internal and external for both successful and failed projects for all job responsibility levels.

Support Workers

The percentage of support workers making optimistic attributions for the causal dimension of internality is presented in Table 27.

Table 27: Percentage of support workers making optimistic attributions for internality

Attribution		% (Support Workers)	Evidence and Participant
Success	Internal	70 %	"Went in ... did it" [SW1] "Came down to me" [SW4] "Putting ideas forward" [SW5] "Yes ... I feel I contributed" [SW6] "Yes ... consulted on a fairly regular basis" [SW8] "Yes ... I did the best I could" [SW9] "Managed it" [SW10]

Attribution		% (Support Workers)	Evidence and Participant
Failure	External	100 %	"No ... management" [SW1] "No ... I wasn't part of that" [SW2] "Out of my reach" [SW3] "Zero influence" [SW4] "Another party" [SW5] "It wasn't me" [SW6] "Need information" [SW7] "Planning done above us" [SW8] "No ... never really been part of project planning" [SW9] "No ... last person in it" [SW10]

Based on the high percentage of optimistic attributions for success (internal attributions) and failure (external attributions) it is evident that support workers tend to make optimistic attributions for both the causes of success and failure.

The percentage of support workers making pessimistic attributions for the causal dimension of internality is presented in Table 28.

Table 28: Percentage of support workers making pessimistic attributions for internality

Attribution		% (Support Workers)	Evidence and Participant
Success	External	30 %	"No" [SW2] "Not much to do" [SW3] "Needs to come from above" [SW7]

Based on the low percentage of pessimistic attributions for success (external attributions) and no pessimistic attributions for failure (internal attributions) it is evident that support workers tend not to make pessimistic attributions for both the causes of success and failure.

Combining both the optimistic and/or pessimistic attributions for each support worker an overall attributional tendency for the causality dimension of internality was determined as presented in Table 29.

Table 29: Attributional tendency for internality by support workers

Attributional Tendency	Participants									
	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10
Optimistic	•			•	•	•		•	•	•
Divided (Optimistic / Pessimistic)		•	•				•			
Pessimistic										

The attributional tendencies indicate that support workers tend to be more optimistic than pessimistic for the causal dimension of internality. Where support workers were divided in their attributions, the optimistic attribution tended to be based around the attribution of failure to external causes whilst the pessimistic attribution tended to be based around the attribution of success to external causes.

Reasons for the optimistic attributions for the causal dimension of internality based on the interviews are presented in Table 30.

Table 30: Reasons for optimistic attributions for internality by support workers

Reason		Outcome	Measure and Participant
Individual	Influence	Success	Ability to influence stakeholders and management [SW5][SW6][SW9][SW10]
	Skills	Success	Ability to provide skills [SW5][SW9]
Project	Management	Failure	Inability to obtain a capable project manager who has experience in planning and ensuring business requirements are achieved [SW5][SW7][SW8][SW9]
	Stakeholders	Failure	Inability of stakeholders to successfully influence and control project decisions due to a lack of authority and/or communication channels [SW3][SW4][SW6][SW8]
	Team	Failure	Inability of the team to contribute to the project outcome [SW1][SW4][SW6]
Organisational	Commitment	Failure	Inability to obtain executive management commitment and sufficient resource allocations [SW1][SW2][SW8][SW10]

Based on the optimistic attributions for the causal dimension of internality it is evident that during success support workers with an optimistic attributional style will tend to attribute the cause of success internally at their ability to influence both stakeholders and management and provide skills. Conversely, during failure these support workers will tend to attribute the cause of failure externally at the inability of the project manager, inability of stakeholders to influence the project, inability of the team to contribute and the lack of organisational commitment.

Reasons for the pessimistic attributions based on the interviews are presented in Table 31.

Table 31: Reasons for pessimistic attributions for internality by support workers

Reason		Outcome	Measure and Participant
Project	Management	Success	Ability to obtain a capable project manager who has experience in managing and/or directing a team and project [SW3]
Organisational	Commitment	Success	Ability to obtain executive management commitment and sufficient resource allocations [SW2][SW7]

Based on the pessimistic attributions for the causal dimension of internality it is evident that during success, support workers with a pessimistic attributional style will tend to attribute the cause of success externally at the ability of the project manager and the organisational commitment.

Line Managers

The percentage of line managers making optimistic attributions for the causal dimension of internality is presented in Table 32.

Table 32: Percentage of line managers making optimistic attributions for internality

Attribution		% (Line Managers)	Evidence and Participant
Success	Internal	80 %	"For sure" [LM1] "I would like to think I was" [LM2] "Talent for stakeholder facilitation and consultation" [LM3] "Absolutely ... It was acknowledged in places" [LM5] "I did contribute significantly" [LM6] "Yes ... coded project ... lead communications" [LM8] "Yes ... having a good rapport with people" [LM9] "Requirements assessment was due to me" [LM10]
Failure	External	60 %	"Designed at the upper level" [LM1] "Not specific to me" [LM2] "Others ... wasn't my fault" [LM3] "Wasn't able to influence" [LM5] "Lack of leadership" [LM7] "No ... no change management" [LM8]

Based on the high percentage of optimistic attributions for success (internal attributions) it is evident that line managers tend to make optimistic attributions for the causes of success. Due to the low to high percentage of optimistic attributions for failure (external attributions) it is not clear whether line managers tend to make optimistic attributions for the causes of failure.

The percentage of line managers making pessimistic attributions for the causal dimension of internality is presented in Table 33.

Table 33: Percentage of line managers making pessimistic attributions for internality

Attribution		% (Line Managers)	Evidence and Participant
Success	External	20 %	"All parties" [LM4] "Both people doing rollout and project manager" [LM7]
Failure	Internal	40 %	"Internal – hindsight always a good thing" [LM4] "I was at fault as I was part of the team" [LM6] "Could have shown more initiative" [LM9] "Not aggressive enough in pursuing support" [LM10]

Based on the low percentage of pessimistic attributions for success (external attributions) it is evident that line managers do not tend to make pessimistic attributions for the causes of success. Due to the low to high percentage of pessimistic attributions for failure (internal attributions) it is not clear whether line managers tend to make pessimistic attributions for the causes of failure.

Combining both the optimistic and/or pessimistic attributions for each line manager an attributional tendency for the causal dimension of internality was determined as presented in Table 34.

Table 34: Attributional tendency for internality by line managers

Attributional Tendency	Participants									
	LM1	LM2	LM3	LM4	LM5	LM6	LM7	LM8	LM9	LM10
Optimistic	•	•	•		•			•		
Divided (Optimistic / Pessimistic)						•	•		•	•
Pessimistic				•						

The attributional tendencies indicate that line managers tend to be more optimistic than pessimistic for the causal dimension of internality. Where line managers were divided in their attributions, the optimistic attribution

tended to be based around the attribution of success to internal causes whilst the pessimistic attribution tended to be based around the attribution of failure to internal causes.

Reasons for the optimistic attributions for the causal dimension of internality based on the interviews are presented in Table 35.

Table 35: Reasons for optimistic attributions for internality by line managers

Reason		Outcome	Measure and Participant
Individual	Influence	Success	Ability to influence stakeholders and management [LM1][LM3][LM5][LM6][LM8][LM9]
	Skills	Success	Ability to provide skills [LM5][LM6][LM8][LM10]
Project	Management	Failure	Inability to obtain a capable project manager who has experience in planning and ensuring business requirements are achieved [LM5][LM8]
	Stakeholders	Failure	Inability of stakeholders to successfully influence and control project decisions due to a lack of authority and/or communication channels [LM1][LM5]
	Team	Failure	Inability of the team to contribute to the project outcome [LM3]
Organisational	Commitment	Failure	Inability to obtain executive management commitment and sufficient resource allocations [LM1][LM2][LM3][LM7]
	Environment	Failure	Unstable organisational environment (e.g. high staff turnover, organisational restructures) [LM8]

Based on the optimistic attributions for the causal dimension of internality it is evident that during success line managers with an optimistic attributional style will tend to attribute the cause of success internally at their ability to influence both stakeholders and management and provide skills. Conversely, during failure these line managers will tend to attribute the cause of failure externally at the inability of the project manager, inability of project stakeholders, inability of the team, lack of organisational commitment and an unstable organisational environment.

Reasons for the pessimistic attributions for the causal dimension of internality are presented in Table 36.

Table 36: Reasons for pessimistic attributions for internality by line managers

Reason		Outcome	Measure and Participant
Individual	Influence	Failure	Lack of initiative to influence project [LM4][LM6][LM9][LM10]
Project	Management	Success	Ability to obtain a capable project manager who has experience in managing and/or directing a team and project [LM4][LM7]
	Stakeholders	Success	Ability of stakeholders to successfully influence the project [LM4]
	Team	Success	Ability of the team to contribute to the project outcome [LM4][LM7]
Organisational	Commitment	Success	Ability to obtain executive management commitment and sufficient resource allocations [LM4]

Based on the pessimistic attributions for the causal dimension of internality it is evident that during success line managers with a pessimistic attributional style will tend to attribute the cause of success externally at the capable project manager, ability of project stakeholders, ability of the project team and the commitment of the organisation. Conversely, during failure these line managers will tend to attribute the cause of failure internally at their inability to use initiative to influence the project.

Executive Managers

The percentage of executive managers making optimistic attributions for the causal dimension of internality is presented in Table 37.

Table 37: Percentage of executive managers making optimistic attributions for internality

Attribution		% (Executive Managers)	Evidence and Participant
Success	Internal	40 %	"Yes" [EM1] "I did" [EM4] "Manager should be point of engagement. Was me" [EM7] "Yes definitely some impact" [EM8]

Attribution		% (Executive Managers)	Evidence and Participant
Failure	External	80 %	"No ... a supporting officer" [EM1] "No ... Would have happened anyhow" [EM3] "They were morons" [EM4] "No ... management" [EM5] "No one reason for the project failure" [EM6] "Media and the public" [EM7] "Starts at the top" [EM8] "Stakeholders did not know expectations" [EM9]

Based on the high percentage of optimistic attributions for failure (external attributions) it is evident that executive managers tend to make optimistic attributions for the causes of failure. Due to the low to high percentage of optimistic attributions for success (internal attributions) it is not clear whether executive managers tend to make optimistic attributions for the causes of success.

The percentage of executive managers making pessimistic attributions for the causal dimension of internality is presented in Table 38.

Table 38: Percentage of executive managers making pessimistic attributions for internality

Attribution		% (Executive Managers)	Evidence and Participant
Success	External	60 %	"No ... make sure they knew what they're doing" [EM2] "No ... project manager" [EM3] "Success is a team based" [EM5] "Team work is biggest" [EM6] "Engagement of clients – building contracts" [EM9] "Team based effort" [EM10]
Failure	Internal	20 %	"Some respects I did... tend not to be as outspoken" [EM2] "Maybe I influence people" [EM10]

Based on the low percentage of pessimistic attributions for failure (internal attributions) it is evident that executive managers tend not to make pessimistic attributions for the causes of failure. Due to the low to high percentage of pessimistic attributions for success (external attributions) it is not clear whether executive managers tend to make optimistic attributions for the causes of success.

Combining both the optimistic and/or pessimistic attributions for each executive manager an attributional tendency for the causal dimension of internality was determined as presented in Table 39.

Table 39: Attributional tendency for internality by executive managers

Attributional Tendency	Participants									
	EM1	EM2	EM3	EM4	EM5	EM6	EM7	EM8	EM9	EM10
Optimistic	•			•			•	•		
Divided (Optimistic / Pessimistic)			•		•	•			•	
Pessimistic		•								•

The attributional tendencies indicate that executive managers tended to be more optimistic than pessimistic for the causal dimension of internality. Where line managers were divided in their attributions, the optimistic attribution tended to be based around attributing failure to external causes whilst the pessimistic attributions tended to be based around the attribution of success to external causes.

Reasons for the optimistic attributions for the causal dimension of internality based on the interviews are presented in Table 40.

Table 40: Reasons for optimistic attributions for internality by executive managers

Reason		Outcome	Measure and Participant
Individual	Influence	Success	Ability to influence stakeholders and management [EM4]
	Skills	Success	Ability to provide skills [EM4][EM7]
Project	Management	Failure	Inability to obtain a capable project manager who has experience in planning and ensuring business requirements are achieved [EM9]
	Stakeholders	Failure	Inability of stakeholders to successfully influence and control project decisions due to a lack of authority and/or communication channels [EM1][EM4][EM6][EM7][EM9]
Organisational	Commitment	Failure	Inability to obtain executive management commitment and sufficient resource allocations [EM3][EM5][EM6][EM8]
	Environment	Failure	Unstable organisational environment (e.g. high staff turnover, organisational restructures) [EM3]

Based on the optimistic attributions for the causal dimension of internality it is evident that during success executive managers with an optimistic attributional style will tend to attribute the cause of success internally to their ability to influence stakeholders and management and their ability to provide skills. Conversely, during failure these executive managers will tend to attribute the cause of failure externally to the inability of the project manager, inability of project stakeholders, lack of organisational commitment and the unstable organisational environment.

Reasons for the pessimistic attributions for the causal dimension of internality based on the interviews are presented in Table 41.

Table 41: Reasons for pessimistic attributions for internality by executive managers

Reason		Outcome	Measure and Participant
Individual	Influence	Failure	Lack of initiative to influence project [EM2][EM10]
Project	Management	Success	Ability to obtain a capable project manager who has experience in managing and/or directing a team and project [EM3]
	Stakeholders	Success	Ability of stakeholders to successfully influence the project [EM3][EM6]
	Team	Success	Ability of the team to contribute to the project outcome [EM3][EM6][EM10]
Organisational	Commitment	Success	Ability to obtain executive management commitment and sufficient resource allocations [EM2][EM3][EM6][EM10]

Based on the pessimistic attributions for the causal dimension internality it is evident that during success executive managers with a pessimistic attributional style will tend to attribute the cause of success externally at the ability of the project manager, ability of the project stakeholders, ability of the project team and the commitment of the organisation. Conversely, during failure these executive managers will tend to attribute the cause of failure internally at their inability to use initiative to influence the project.

Summary

The interviews indicated that all job responsibility levels tended to exhibit an optimistic attributional tendency for the causal dimension of internality. The optimistic attributional tendency was based around attributing success internally and failure externally. Anecdotal evidence suggests that line and executive managers tended to increasingly make more pessimistic attributions for the causal dimension of internality than support workers.

Reasons for the optimistic attributions for the causal dimension of internality evident in the interviews are presented in Table 42.

Table 42: Reasons for optimistic attributions for internality

Reason		Outcome	Measure and Responsibility Level
Individual	Influence	Success	Ability to influence stakeholders and management [SW][LM][EM]
	Skills	Success	Ability to provide skills [SW][LM][EM]
Project	Management	Failure	Inability to obtain a capable project manager who has experience in planning and ensuring business requirements are achieved [SW][LM][EM]
	Stakeholders	Failure	Inability of stakeholders to successfully influence and control project decisions due to a lack of authority and/or communication channels [SW][LM][EM]
	Team	Failure	Inability of the team to contribute to the project outcome [SW][LM]
Organisational	Commitment	Failure	Inability to obtain executive management commitment and sufficient resource allocations [SW][LM][EM]
	Environment	Failure	Unstable organisational environment (e.g. high staff turnover, organisational restructures) [LM][EM]

Based on the optimistic attributions for the causal dimension of internality it is evident that during success individuals with an optimistic attributional style tended to attribute the cause of success internally to their ability to influence the stakeholders and management and provide skills. Conversely, during failure these individuals tended to attribute the cause externally at

the inability of the project manager, inability of project stakeholders, inability of the project team, lack of organisational commitment and an unstable organisational environment.

Reasons for the pessimistic attributions for the causal dimension of internality evident in the interviews are presented in Table 43.

Table 43: Reasons for pessimistic attributions for internality

Reason		Outcome	Measure and Responsibility Level
Individual	Influence	Failure	Lack of initiative to influence project [LM][EM]
Project	Management	Success	Ability to obtain a capable project manager who has experience in managing and/or directing a team and project [SW][LM][EM]
	Stakeholders	Success	Ability of stakeholders to successfully influence the project [LM][EM]
	Team	Success	Ability of the team to contribute to the project outcome [LM][EM]
Organisational	Commitment	Success	Ability to obtain senior management commitment and sufficient resource allocations [SW][LM][EM]

Based on the pessimistic attributions for the causal dimension of internality it is evident that during success individuals with a pessimistic attributional style tended to attribute the cause of success externally at the project manager, project stakeholders, project team and the commitment of the organisation. Conversely, during failure these individuals tended to attribute the cause internally at their inability to use initiative to influence the project.

Stability

The causal dimension of stability is based on whether the individual perceived the cause as being constant (stable) or likely to fluctuate (unstable). To ascertain the causal dimension of stability each participant was asked the following question for both a successful and failed project:

- In the future did you believe [cause] would influence what happened to projects you were involved in? Why?

The interview responses were then categorised based on job responsibility level and then categorised as either being an optimistic attribution (i.e. stable attributions for success and unstable attributions for failure) or pessimistic attribution (i.e. unstable attributions for success and stable attributions for failure). The interview responses were then analysed to understand the attributional tendencies and reasons for the attributions.

The categorised attributions were independently verified by each participant and through an independent reviewer (see Appendix H). The independent reviewer supported the researchers categorisations of the interview transcripts into the two categories of stable and unstable for both successful and failed projects for all job responsibility levels. However, it was noted that two participants (i.e. LM6 for success and EM6 for failure) were interpreted differently to the researcher, even though reconciliation of the differences with the independent reviewer did note that it could also be interpreted in the same manner as the researcher.

Support Workers

The percentage of support workers making optimistic attributions for the causal dimension of stability is presented in Table 44.

Table 44: Percentage of support workers making optimistic attributions for stability

Attribution		% (Support Workers)	Evidence and Participant
Success	Stable	80 %	"Yes" [SW1] "Yes... relatively common" [SW2] "Yes" [SW3] "Not one off" [SW4] "Yes will happen again" [SW5] "Don't think it was a one off" [SW8] "Would assume I would get another one" [SW9] "Could do it again" [SW10]
Failure	Unstable	40 %	"Projects should get better" [SW3] "One of" [SW5] "Optimistic that it will get better" [SW7] "Unless complete idiot wouldn't do it the same way" [SW8]

Based on high percentage of optimistic attributions for success (stable attributions) it was evident that support workers tended to make optimistic attributions for the cause of success. Due to the low to high percentage of optimistic attributions for failure (unstable attributions) it is not clear whether

support workers tended to make optimistic attributions for the causes of failure.

The percentage of support workers making pessimistic attributions for the causal dimension of stability is presented in Table 45.

Table 45: Percentage of support workers making pessimistic attributions for stability

Attribution		% (Support Workers)	Evidence and Participant
Success	Unstable	20 %	"Very rare" [SW6] "Depends on project" [SW7]
Failure	Stable	60 %	"Never one off" [SW1] "They don't learn" [SW2] "Hasn't changed" [SW4] "I don't think they will have learnt" [SW6] "Expect lack of planning in future projects" [SW9] "Yes ... just keep doing it" [SW10]

Based on the low percentage of pessimistic attributions for success (unstable attributions) it is evident that support workers did not tend to make pessimistic attributions for the causes of success. Due to the low to high percentage of pessimistic attributions for failure (stable attributions) it is not clear whether line managers tend to make pessimistic attributions for the causes of failure.

Combining both the optimistic and/or pessimistic attributions for each support worker an attributional tendency for the causal dimension of stability was determined as presented in Table 46.

Table 46: Attributional tendency for stability by support workers

Attributional Tendency	Participants									
	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10
Optimistic			•		•			•		
Divided (Optimistic / Pessimistic)	•	•		•			•		•	•
Pessimistic						•				

The attribution tendencies indicate that support workers tended to be divided for the causality dimension of stability. However, there is anecdotal evidence based on the interviews that support workers have a tendency to be optimistic. Where support workers were divided in their attributions, the optimistic attribution tended to be based around attributing success to

stable causes whilst the pessimistic attribution tended to be based around the attribution of failure to stable causes.

Reasons for the optimistic attributions for the causal dimension of stability based on the interviews are presented in Table 47.

Table 47: Reasons for optimistic attributions for stability by support workers

Reason		Outcome	Measure
Project	Management	Success	Ability to obtain a capable project manager who has experience in planning and ensuring business requirements and/or success criteria are achieved [SW8]
		Failure	Ability to obtain a capable project manager [SW7][SW8]
Organisational	Environment	Success	Ability of the organisation to successfully complete projects [SW2][SW8]
	Knowledge	Success	Ability of the organisation to retain knowledge [SW5][SW9]
		Failure	Ability of the organisation to retain knowledge [SW3][SW5][SW8]

Based on the optimistic attributions for the causal dimension of stability it is evident that during success support workers with an optimistic attributional style will tend to attribute the cause of success as stable due to the ability of the project manager, organisational environment characterised by successful project completions and organisational knowledge retention. Conversely, during failure these support workers will tend to attribute the cause of failure as unstable due to the due to confidence in the project manager and organisational knowledge retention.

Reasons for the pessimistic attributions for the causal dimension of stability based on the interviews are presented in Table 48.

Table 48: Reasons for pessimistic attributions for stability by support workers

Reasons		Outcome	Measure
Individual	Influence	Failure	Inability to influence stakeholders and management [SW10]
Project	Management	Failure	Inability to obtain a capable project manager who has experience in planning and ensuring business requirements are achieved [SW9]
Organisational	Environment	Success	Unstable organisational environment (e.g. high staff turnover, organisational restructure) [SW1]
		Failure	Inability of the organisation to successfully complete projects and an unstable organisational environment (e.g. restructuring) [SW1][SW4]
	Knowledge	Failure	Inability of the organisation to retain knowledge [SW2][SW4][SW6][SW10]

Based on the pessimistic attributions for the causal dimension of stability it is evident that during success support workers with a pessimistic attributional style will tend to attribute the cause of success as unstable due to an unstable organisational environment. Conversely, during failure these support workers will tend to attribute the cause of failure as stable due to the individual being unable to influence stakeholders or management, inability of the project manager, organisational environment being characterised by continual project failures and the inability to retain knowledge.

Line Managers

The percentage of line managers making optimistic attributions for the causal dimension of stability is presented in Table 49.

Table 49: Percentage of line managers making optimistic attributions for stability

Attribution		% (Line Managers)	Evidence and Participant
Success	Stable	80 %	"Yes" [LM1] "Definitely ... have to plan" [LM2] "Yes" [LM3] "Yes. Will appear again" [LM5] "Tend to think they would be better or fairly good" [LM6] "More a given." [LM8] "Will happen in the future" [LM9] "Yes" [LM10]
Failure	Unstable	10 %	"Learn from project outcome" [LM4]

Based on the high percentage of optimistic attributions for success (stable attributions) it is evident that line managers tend to make optimistic attributions for the causes of success. Conversely, the low percentage of optimistic attributions for failure (unstable attributions) indicates that line managers tend not to make optimistic attributions for the causes of failure.

The percentage of pessimistic attributions for the causal dimension of stability is presented in Table 50.

Table 50: Percentage of line managers making pessimistic attributions for stability

Attribution		% (Line Managers)	Evidence and Participant
Success	Unstable	20 %	"Not always possible to get clear outcome" [LM4] "Not in current job" [LM7]
Failure	Stable	90 %	"Most definitely..." [LM1] "Don't see why it would change" [LM2] "Yes" [LM3] "Inherent to organization – will happen again" [LM5] "Expect to encounter this again" [LM6] "Happen again." [LM7] "Definitely" [LM8] "Will affect future projects" [LM9] "Would occur again" [LM10]

Based on the low percentage of pessimistic attributions for success (unstable attributions) it is evident that line managers tend not to make

pessimistic attributions for the causes of success. Conversely, the high percentage of pessimistic attributions for failure (stable attributions) indicates that line managers tend to make pessimistic attributions for the causes of failure.

Combining both the optimistic and/or pessimistic attributions for each line manager an attributional tendency for the causal dimension of stability was determined as presented in Table 51.

Table 51: Attributional tendency for stability by line managers

Attributional Tendency	Participants									
	LM1	LM2	LM3	LM4	LM5	LM6	LM7	LM8	LM9	LM10
Optimistic										
Divided (Optimistic / Pessimistic)	•	•	•	•	•	•		•	•	•
Pessimistic							•			

The attributional tendencies indicate that line managers are divided in their attributions. Where optimistic attributions were made they tended to be based on success being due to stable causes whilst the pessimistic attributions tended to be based on failure being due to stable causes.

Reasons for the optimistic attributions for the causal dimension of stability based on the interviews are presented in Table 52.

Table 52: Reasons for optimistic attributions for stability by line managers

Reason		Outcome	Measure and Participant
Individual	Influence	Success	Ability to influence stakeholders *[LM2][LM9]*
Project	Management	Success	Ability to obtain a capable project manager who has experience in planning and ensuring business requirements and/or success criteria are achieved *[LM2][LM5][LM6][LM8]*
Organisational	Knowledge	Success	Ability of the organisation to retain knowledge *[LM2]*
		Failure	Ability of the organisation to retain knowledge *[LM4]*

Based on the optimistic attributions for the causal dimension of stability it is evident that during success line managers with an optimistic attributional style will tend to attribute the cause of success to stable causes due to the

individuals influence on stakeholders, ability of the project manager and the ability of the organisation to retain knowledge. Conversely, during failure these support workers will tend to attribute the cause of failure externally at the ability of the organisation to retain knowledge.

Reasons for the pessimistic attributions based on the interviews are presented in Table 53.

Table 53: Reasons for pessimistic attributions for stability by line managers

Reason		Outcome	Measure
Individual	Influence	Success	Inability to influence stakeholders [LM4]
		Failure	Inability to influence stakeholders and management [LM6][LM9][LM10]
Project	Management	Failure	Inability to obtain a capable project manager who has experience in planning and ensuring business requirements are achieved [LM5][LM6]
Organisational	Commitment	Failure	Inability to obtain senior management commitment and sufficient resource allocations [LM6]
	Environment	Failure	Inability of the organisation to successfully complete projects and an unstable organisational environment (e.g. restructuring) [LM5]
	Knowledge	Failure	Inability of the organisation to retain knowledge [LM5][LM7][LM9]

Based on the optimistic attributions for the causal dimension of stability it is evident that during success line managers with a pessimistic attributional style will tend to attribute the cause of success to unstable causes due to the individuals inability to influence stakeholders. Conversely, during failure these line managers will tend to attribute the cause of failure to stable causes due to the individuals inability to influence stakeholders, inability of the project manager, unstable organisational environment characterised by continual project failures and the inability to retain organisational knowledge.

Executive Managers

The percentage of executive managers making optimistic attributions for the causal dimension of stability is presented in Table 54.

Table 54: Percentage of executive managers making optimistic attributions for stability

Attribution		% (Executive Managers)	Evidence and Participant
Success	Stable	70 %	"Learnt some lessons" [EM1] "Yes ... absolutely" [EM4] "Hope lessons learnt would work" [EM6] "More and more required" [EM7] "Definitely, needs teamwork" [EM8] "Yes" [EM9] "Certainly will continue. Bought into other areas" [EM10]

Based on the high percentage of optimistic attributions for success (stable attributions) it is evident that executive managers tend to make optimistic attributions for the causes of success. There were no optimistic attributions for failure.

The percentage of executive managers making pessimistic attributions for the causal dimension of stability is presented in Table 55.

Table 55: Percentage of executive managers making pessimistic attributions for stability

Attribution		% (Executive Managers)	Evidence and Participant
Success	Unstable	30 %	"Life is changing – can't expect it to be their" [EM2] "No ... can't guarantee it" [EM3] "Always a risk that circumstances change" [EM5]
Failure	Stable	100 %	"Absolutely" [EM1] "Any project that goes up will meet the same fate" [EM2] "Yes, Likely to happen now. Writing is on the wall" [EM3] "Yes... absolutely could" [EM4] "Yes... without a doubt" [EM5] "Need flexibility to prevent project failing" [EM6] "Will happen again" [EM7] "Yes" [EM8] "Unfortunately believe so" [EM9] "Yes will happen again" [EM10]

Based on the low percentage of pessimistic attributions for success it is evident that executive managers tend not to make pessimistic attributions

for the causes of success. Conversely, from the high percentage of pessimistic attributions for failure (stable causes) it is evident that executive managers tend to make pessimistic attributions for the causes of failure.

Combining both the optimistic and/or pessimistic attributions for each executive manager an attributional tendency for the causal dimension of stability was determined for each executive manager as presented in Table 56.

Table 56: Attributional tendency for stability by executive managers

Attributional Tendency	Participants									
	EM1	EM2	EM3	EM4	EM5	EM6	EM7	EM8	EM9	EM10
Optimistic										
Divided (Optimistic / Pessimistic)	•			•		•	•	•	•	•
Pessimistic		•	•		•					

The attributional tendencies indicate that executive managers were divided on the causal dimension of stability. However, there is anecdotal evidence based on interviews that executive managers had a tendency to be more pessimistic than optimistic for the causal dimension of stability. Where executive managers are divided in their attributions, the optimistic attributions tend to be based around attributing success to stable causes whilst the pessimistic attributions tend to be based around the attribution of failure to stable causes.

Reasons for the optimistic attributions based on the interviews are presented in Table 57.

Table 57: Reasons for optimistic attributions for stability by executive managers

Reason		Outcome	Measure and Participant
Individual	Influence	Success	Ability to influence stakeholders [EM6][EM7][EM9]
Project	Management	Success	Ability to obtain a capable project manager who has experience in planning and ensuring business requirements and/or success criteria are achieved [EM6][EM9]

Reason		Outcome	Measure and Participant
Organisational	Knowledge	Success	Ability of the organisation to retain knowledge [EM1][EM6][EM10]

Based on the optimistic attributions for the causal dimension of stability it is evident that during success executive managers with an optimistic attributional style will tend to attribute the cause of success to stable causes that include the individuals ability to influence stakeholders, ability of the project manager and organisational knowledge retention.

Reasons for the pessimistic attributions based on the interviews are presented in Table 58.

Table 58: Reasons for pessimistic attributions for stability by executive managers

Reason		Outcome	Measure and Participant
Individual	Influence	Success	Inability to influence stakeholders [EM3]
		Failure	Inability to influence stakeholders and management [EM2][EM10]
Project	Management	Failure	Inability to obtain a capable project manager who has experience in planning and ensuring business requirements are achieved [EM3][EM6]
Organisational	Commitment	Failure	Inability to obtain senior management commitment and sufficient resource allocations [EM6]
	Environment	Success	Unstable organisational environment (e.g. high staff turnover, organisational restructure) [EM2][EM3][EM5]
	Knowledge	Failure	Inability of the organisation to retain knowledge [EM9]

Based on the pessimistic attributions for the causal dimension of stability it is evident that during success executive managers with a pessimistic attributional style will tend to attribute the cause of success to unstable causes due to the individuals inability to influence stakeholders and an unstable organisational environment. Conversely, during failure these

executive managers will tend to attribute the cause of failure to stable causes due to the individual's inability to influence stakeholders and management, inability of the project manager, lack of organisational commitment to the project and the inability to retain organisational knowledge.

Summary

The interviews indicate that all job responsibility levels to be divided between an optimistic and pessimistic attributional style for the causal dimension of stability. The optimistic attributional tendency based around attributing success to stable causes and the pessimistic attributional tendency based around also attributing failure to stable causes. Anecdotal evidence from the interviews suggest that line and executive managers have a slightly more pessimistic attributional style than support workers.

Reasons for the optimistic attributions for the causal dimension of stability evident in the interviews are presented in Table 59.

Table 59: Reasons for optimistic attributions for stability

Reason		Outcome	Measure and Responsibility Level
Individual	Influence	Success	Ability to influence stakeholders [SW][LM][EM]
Project	Management	Success	Ability to obtain a capable project manager who has experience in planning and ensuring business requirements and/or success criteria are achieved [SW][LM][EM]
		Failure	Ability to obtain a capable project manager [SW]
Organisational	Environment	Success	Ability of the organisation to successfully complete projects [SW]
	Knowledge	Success	Ability of the organisation to retain knowledge [SW][LM][EM]
		Failure	Ability of the organisation to retain knowledge [SW][LM]

Based on the optimistic attributions for the causal dimension of stability it is evident that during success individuals with an optimistic attributional style will tend to attribute the cause of success to stable causes due to the

individuals ability to influence stakeholders, ability of the project manager, organisational knowledge retention and to a lesser extent the organisations ability to complete projects successfully. Conversely, during failure these individuals will tend to attribute the cause of failure to unstable causes due to the inability to influence stakeholders and an unstable organisational environment.

Reasons for the pessimistic attributions for the causal dimension of stability evident in the interviews are presented in Table 60.

Table 60: Reasons for pessimistic attributions for stability

Reason		Outcome	Measure and Responsibility Level
Individual	Influence	Success	Inability to influence stakeholders [LM][EM]
		Failure	Inability to influence stakeholders and management [SW][LM][EM]
Project	Management	Failure	Inability to obtain a capable project manager who has experience in planning and ensuring business requirements are achieved [SW][LM][EM]
Organisational	Commitment	Failure	Inability to obtain executive management commitment and sufficient resource allocations [LM][EM]
	Environment	Success	Unstable organisational environment (e.g. high staff turnover, organisational restructure) [SW][EM]
		Failure	Inability of the organisation to successfully complete projects and an unstable organisational environment (e.g. restructuring) [SW][LM]
	Knowledge	Failure	Inability of the organisation to retain knowledge [SW][LM][EM]

Based on the pessimistic attributions for the causal dimension of stability it is evident that during success individuals with a pessimistic attributional style will tend to attribute the cause of success to unstable causes due to the inability to influence stakeholders and an unstable organisational environment. Conversely, during failure these individuals will tend to attribute the cause of failure to stable causes due to the inability to influence stakeholders and management, inability of project management,

lack of organisational commitment, unstable organisational environment and the inability of the organisation to retain knowledge.

Globality

The causality dimension of globality is based on whether the individual perceived the cause may affect a variety of situations (global) or if it was limited to narrow and specific outcomes (specific). To determine the causal dimension of globality each participant was asked the following question for both a successful and failed project:

- Was the [cause] something that just influenced your involvement in this project, or did it influence other areas of your life? Why?

The interview responses were then categorised based on job responsibility level and then categorised as either being optimistic (i.e. global attributions for success and specific attributions for failure) or pessimistic (i.e. specific attributions for success and global attributions for failure). The interview responses were then analysed to understand the attributional tendencies and reasons for the attributions.

The categorised attributions were independently verified by each participant and through an independent reviewer (see Appendix H). The independent reviewer supported the researchers categorisations of the interview transcripts into the two categories of global and specific for both successful and failed projects for all job responsibility levels. However, it was noted that two participants (i.e. EM5 and EM9 for failure) were interpreted differently to the researcher, even though reconciliation of the differences with the independent reviewer did note that it could also be interpreted in the same manner as the researcher.

Support Workers

The percentage of support workers making optimistic attributions for the causal dimension of globality is presented in Table 61.

Table 61: Percentage of support workers making optimistic attributions for globality

Attribution		% (Support Workers)	Evidence and Participant
Success	Global	80 %	"Well I was happy at work ... happy at home" [SW1] "Made me feel happier all round" [SW4] "Yes ... sense of achievement" [SW5] "Yes ... felt accomplishment" [SW6] "Was pleasing – got recognition from management" [SW7] "Yes I think ... felt fair amount of pride in success" [SW8] "Positively flowed through to my daily work life" [SW9] "Felt satisfied that a good job was done" [SW10]
Failure	Specific	70 %	"Didn't really care much. Didn't impact me much" [SW3] "Did what I was told ... Didn't really impact me" [SW4] "Just at work ... didn't take it home with me" [SW5] "Not really affected me... More high level. Hard to deal with the backlash. Can however separate work from home. I was just the plebe in the project" [SW7] "Learnt to switch that off when I go home" [SW8] "Disappointment solely in project ... didn't really bother me. Didn't really reflect on me" [SW9] "No. Didn't bother me ... Didn't really reflect on me" [SW10]

Based on the high percentage of optimistic attributions for success (global attributions) and failure (specific attributions) it is evident that support workers tend to make optimistic attributions for both the causes of success and failure.

The percentage of support workers making pessimistic attributions for the causal dimension of globality is presented in Table 62.

Table 62: Percentage of support workers making pessimistic attributions for globality

Attribution		% (Support Workers)	Evidence and Participant
Success	Specific	20 %	"Just my involvement in the project." [SW2] "Not really ... specific to this project" [SW3]
Failure	Global	30 %	"Personally yes ... I didn't know what I was doing" [SW1] "Yes... it affected other area's of my life" [SW2] "Really annoyed ... the days from hell." [SW6]

Based on the low percentage of pessimistic attributions for success (specific attributions) and failure (global attributions) it is evident that support workers tend not to make pessimistic attributions for both the causes of success and failure.

Combining both the optimistic and/or pessimistic attributions for each support worker an attributional tendency for the causal dimension of globality was determined for each support worker as presented in Table 63.

Table 63: Attributional tendency for globality by support workers

Attributional Tendency	Participants									
	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10
Optimistic				•	•		•	•	•	•
Divided (Optimistic / Pessimistic)	•		•			•				
Pessimistic		•								

The attribution tendencies indicate that support workers tend to be more optimistic than pessimistic for the causal dimension of globality. Where support workers were divided in their attributions, the optimistic attribution tended to be based around attributing success to global causes whilst the pessimistic attribution tended to be based around the attribution of failure to global causes.

Reasons for the optimistic attributions based on the interviews are presented in Table 64.

Table 64: Reasons for optimistic attributions for globality by support workers

Reason		Outcome	Measure and Participant
Individual	Confidence	Success	Improved confidence due to factors such as recognition of contribution from peers [SW1][SW4][SW5][SW6][SW7][SW8] [SW9][SW10]

Reason		Outcome	Measure and Participant
	Influence	Failure	Inability to influence management [SW4][SW7]
	Skills	Success	Ability to develop skills [SW8]
Organisational	Environment	Success	Ability to realise organisational benefits from the project [SW10]

Based on the optimistic attributions for the causal dimension of stability it is evident that during success, support workers with an optimistic attributional style will tend to attribute the cause of success to global causes due to improved individual confidence, ability to develop skills and the organisational benefits realised from the project. Conversely, during failure these support workers will tend to attribute the cause of failure to their inability to influence stakeholders and management.

Reasons for the pessimistic attributions based on the interviews are presented in Table 65.

Table 65: Reasons for pessimistic attributions for globality by support workers

Reason		Outcome	Measure and Participant
Individual	Confidence	Failure	Lose of confidence [SW1][SW6]
	Influence	Failure	Inability to influence management [SW8]
Organisational	Environment	Failure	Negative organisational environment due to unsatisfied stakeholders and/or the realisation of lost organisational benefits [SW2][SW6]

Based on the pessimistic attributions for the causal dimension of globality it is evident that during failure support workers with a pessimistic attributional style will tend to attribute the cause of failure to global causes due to the lose of individual confidence, inability to management and the negative organisational environment created by the projects failure.

Line Managers

The percentage of line managers making optimistic attributions for the causality dimension of globality is presented in Table 66.

Table 66: Percentage of line managers making optimistic attributions for globality

Attribution		% (Line Managers)	Evidence and Participant
Success	Global	60 %	"I think so ...I think when you can successful sign off a project ... I think your rather happy" [LM1] "Yes ... I sometimes find success at work has a potential to create success outside work." [LM2] "More positive at home. Good effect on team – improved services and positively affected day to day projects" [LM4] "Felt happier ... Sense of success ... success is a joyful think ... carry success outside of work." [LM5] "Hugely better. Projects like babies. When small projects are deemed successful its like fathering a baby" [LM6] "Very happy at end." [LM8]
Failure	Specific	30 %	"No not really ... I was a third party" [LM1] "Try not to take work home though" [LM4] "It impacted just the project. Able to separate work from home" [LM10]

Based on the low to high percentage of optimistic attributions for success (global attributions) it is not clear whether line managers tend to make optimistic attributions for the causes of success. Conversely, the low percentage of optimistic attributions for failure (specific attributions) it is evident that line managers do not tend to make optimistic attributions for the causes of failure.

The percentage of line managers making pessimistic attributions for the causal dimension of globality is presented in Table 67.

Table 67: Percentage of line managers making pessimistic attributions for globality

Attribution		% (Line Managers)	Evidence and Participant
Success	Specific	40 %	"No – its all in a days work" [LM3] "Only work" [LM7] "Didn't affect other areas of my life. Don't care about work when I go home" [LM9] "Didn't have a big influence on other areas" [LM10]

Attribution		% (Line Managers)	Evidence and Participant
Failure	Global	70 %	"There was certainly potential for it to impact further than work hours. You have to allow for these things ... Some of the best ideas of work do not occur at work." [LM2] "Impacted pride of workmanship and appreciation of the big picture" [LM3] "Yeah ... Impacted ... Became personal as you couldn't change anything" [LM5] "Did have a impact both personally and business" [LM6] "Do take it personally – doing myself" [LM7] "Yes. Assessment based on project outcome. Pissed off and bitter. Questioned why it failed." [LM8] "Yes ... Always the prospect of dealing with angry clients" [LM9]

Based on the low to high percentage of pessimistic attributions for success (specific attributions) it is not clear whether line managers tend to make optimistic attributions for the causes of success. Conversely, the high percentage of pessimistic attributions for failure (global attributions) indicates that line managers tend to make pessimistic attributions for the causes of failure.

Combining both the optimistic and/or pessimistic attributions for each line manager an attributional tendency for the causal dimension of globality was determined as presented in Table 68.

Table 68: Attributional tendency for globality by line managers

Attributional Tendency	Participants									
	LM1	LM2	LM3	LM4	LM5	LM6	LM7	LM8	LM9	LM10
Optimistic	•			•						
Divided (Optimistic / Pessimistic)		•			•	•		•		•
Pessimistic			•				•		•	

The attributional tendencies indicate that line managers tend to be divided in their attributions with no clear tendency to being optimistic or pessimistic. Where optimistic attributions were made they tended to be based on success being due to global causes whilst the pessimistic attributions tended to be based on failure being due to global causes.

Reasons for the optimistic attributions for the causal dimension of globality based on the interviews are presented in Table 69.

Table 69: Reasons for optimistic attributions for globality by line managers

Reason		Outcome	Measure and Evidence
Individual	Confidence	Success	Improved confidence due to factors such as recognition of contribution from peers [LM1][LM2][LM4][LM5][LM6][LM8]
	Skills	Success	Ability to develop skills [LM8]
Project	Teamwork	Success	Improved team morale [LM4][LM5]
Organisational	Environment	Success	Ability to realise organisational benefits from the project [LM4][LM6]

Based on the optimistic attributions for the causal dimension of globality it is evident that during success line managers with an optimistic attributional style will tend to attribute the cause of success to global causes due to improved confidence, ability to develop skills, improved team morale and the ability to realised organisational benefits.

Reasons for the pessimistic attributions for the causal dimension of globality based on the interviews are presented in Table 70.

Table 70: Reasons for pessimistic attributions for globality by line managers

Reason		Outcome	Measure and Evidence
Individual	Confidence	Failure	Lose of confidence [LM3][LM5][LM6][LM7][LM8][LM9]
	Influence	Failure	Inability to influence management [LM5]
	Skills	Failure	Adverse impact on their perceived professionalism [LM3][LM5][LM6]
Organisational	Environment	Failure	Negative organisational environment due to unsatisfied stakeholders and/or the realisation of lost organisational benefits [LM6][LM9]

Based on the pessimistic attributions for the causal dimension of globality it is evident that during failure line managers with a pessimistic attributional style will tend to attribute the cause of failure to global causes due to the lose of confidence, inability to influence management, adverse impact on

perceived professionalism and the negative organisation environment created by the projects failure.

Executive Managers

The optimistic attributions by executive managers for the causal dimension of globality are presented in Table 71.

Table 71: Percentage of executive managers making optimistic attributions for globality

Attribution		% (Executive Managers)	Evidence and Participant
Success	Global	70 %	"Lots of rewards – financial, travel, peer recognition. Team members say I've learnt from you. Self satisfaction" [EM2] "Ended up working longer hours – a lot of energy and effort but working for a community" [EM3] "At senior level get sense of satisfaction as project you've been involved in has been completed successfully" [EM5] "Success builds reputation " [EM6] "Influences other areas of life" [EM8] "Absolutely. Impossible was achieved - Virtually delivering impossible project" [EM9] "Achieve and meet targets makes me feel better. Good to put good news to board. Team morale improved " [EM10]
Failure	Specific	20 %	"If more junior then I would have put failure on it. As senior I was aware that it was not my failure" [EM5] "Just impacted project involvement" [EM8]

Based on the high percentage of optimistic attributions for success (global attributions) it is evident that executive managers tend to make optimistic attributions for the causes of failure. Conversely, the low percentage of optimistic attributions for failure (specific attributions) indicates that executive managers do not tend to make optimistic attributions for the causes of failure.

The percentage of executive managers making pessimistic attributions for the causal dimension of globality is presented in Table 72.

Table 72: Percentage of executive managers making pessimistic attributions for globality

Attribution		% (Executive Managers)	Evidence and Participant
Success	Specific	30 %	"No – felt the same" [EM1] "Within work ... not rest of my life." [EM4] "Not really ... not as passionate" [EM7]
Failure	Global	80 %	"Put in a lot of effort to support infrastructure – now not used. Felt effort had been wasted" [EM1] "Endlessly... it's a chain of events" [EM2] "Yes... Demoralising all round. Just got further leadership training" [EM3] "I was depressed." [EM4] "Everyone conditions themselves if failure occurred... Will suffer anxiety, stress and sleepless nights" [EM6] "Quite sentimental – could see benefits for well being of citizens" [EM7] "Disillusioned – we did not address the customer requirements. Just learnt from it" [EM9] "Thought about it... worked very long hours... Did learn and mirroring it to other location ... Learnt from challenges and now expect them" [EM10]

Based on the low percentage of pessimistic attributions for success (specific attributions) it is evident that executive managers tend not to make pessimistic attributions for the causes of success. Conversely, the high percentage of pessimistic attributions for failure (global attributions) indicates the executive managers tend to make pessimistic attributions for the causes of failure.

Combining both the optimistic and/or pessimistic attributions for each executive manager an attributional tendency for the causal dimension of globality was determined as presented in Table 73.

Table 73: Attributional tendency for globality by executive managers

Attributional Tendency	Participants									
	EM1	EM2	EM3	EM4	EM5	EM6	EM7	EM8	EM9	EM10
Optimistic					●			●		
Divided (Optimistic / Pessimistic)		●	●			●			●	●
Pessimistic	●			●			●			

The attributional tendencies indicate that executive managers are divided in their attributions with no clear tendency to being optimistic or pessimistic. Where optimistic attributions were made they tended to be based on success being due to global causes whilst the pessimistic attributions tended to be based on failure being due to global causes.

Reasons for the optimistic attributions for the causal dimension of globality based on the interviews are presented in Table 74.

Table 74: Reasons for optimistic attributions for globality by executive managers

Reason		Outcome	Measure and Participant
Individual	Confidence	Success	Improved confidence due to factors such as recognition of contribution from peers [EM2][EM5][EM6][EM9][EM10]
	Skills	Success	Ability to develop skills [EM5]
Project	Teamwork	Success	Improved team morale [EM2][EM10]
Organisational	Environment	Success	Ability to realise organisational benefits from the project [EM6]

Based on the optimistic attributions for the causal dimension of globality it is evident that during success executive managers with an optimistic attributional style will tend to attribute the cause of success to improved confidence, ability to develop skills, improved team morale and the ability to realise organisational benefits from the project.

Reasons for the pessimistic attributions for the causal dimension of globality based on the interviews are presented in Table 75.

Table 75: Reasons for pessimistic attributions for globality by executive managers

Reason		Outcome	Measure and Participant
Individual	Confidence	Failure	Lose of confidence [EM1][EM2][EM3][EM6][EM9]
	Influence	Failure	Inability to influence management [EM2]
	Skills	Failure	Adverse impact on their perceived professionalism [EM3][EM6][EM9][EM10]
Organisational	Environment	Failure	Negative organisational environment due to unsatisfied stakeholders and/or the realisation of lost organisational benefits [EM2][EM7][EM9]

Based on the pessimistic attributions for the causal dimension of globality it is evident during failure executive managers with a pessimistic attributional style will tend to attribute the cause of failure to global causes due to the lose of confidence, inability to influence management, adverse impact on perceived professionalism and the negative organisational environment as a result of the projects failure.

Summary

The interviews indicate that support workers tended to exhibit an optimistic attributional tendency for the causal dimension of globality. The optimistic tendency was based around attributing success to global causes and failure to specific causes. Conversely, line managers and executive managers tend to be divided between an optimistic and pessimistic attributional style. The divided attributional style was based around line managers and executive managers attributing success and failure to global causes.

Reasons for the optimistic attributions for the causal dimension of globality was evident in the interviews are presented in Table 76.

Table 76: Reasons for optimistic attributions for globality

Reason		Outcome	Measure and Responsibility Level
Individual	Confidence	Success	Improved confidence due to factors such as recognition of contribution from peers [SW][LM][EM]
	Influence	Failure	Inability to influence management [SW]
	Skills	Success	Ability to develop skills

Reason		Outcome	Measure and Responsibility Level
			[SW][LM][EM]
Project	Teamwork	Success	Improved team morale [EM]
Organisational	Environment	Success	Ability to realise organisational benefits from the project [SW][LM]

Based on the optimistic attributions for the causal dimension of globality it is evident that during success individuals with an optimistic attributional style will tend to attribute the cause of success to global causes due to improved individual confidence, ability to develop skills, improved team morale and the ability to realise organisational benefits from the project. Conversely, during failure these individuals will tend to attribute the cause of failure to specific causes due to their inability to influence management.

Reasons for the pessimistic attributions for the causal dimension of globality evident in the interviews are presented in Table 77.

Table 77: Reasons for pessimistic attributions for globality

Reason		Outcome	Measure and Responsibility Level
Individual	Confidence	Failure	Lose of confidence [SW][LM][EM]
	Influence	Failure	Inability to influence management [SW][LM][EM]
	Skills	Failure	Adverse impact on their perceived professionalism [LM][EM]
Organisational	Environment	Failure	Negative organisational environment due to unsatisfied stakeholders and/or the realisation of lost organisational benefits [SW][LM][EM]

Based on the pessimistic attributions for the causal dimension of globality it is evident that during failure individuals with a pessimistic attributional style will tend to attribute the cause of success to global causes due to the loss of confidence, inability to influence management, adverse impact on perceived professionalism and the negative organisational environment due to the projects failure.

Controllability

The causal dimension of controllability is based on whether the individual perceived the cause could be influenced (controlled) or not influenced (uncontrolled). To determine the causal dimension of controllability each participant was asked the following question for both a successful and failed project:

- Was this [cause] something over which you had control? Why?

The interview responses were then categorised based on job responsibility level and then categorised as either being optimistic (i.e. controllable attributions for success and uncontrollable attributions for failure) or pessimistic (i.e. uncontrollable attributions for success and controllable attributions for failure). The interview responses were then analysed to understand the attributional tendencies and reasons for the attributions.

The categorised attributions were independently verified by each participant and through an independent reviewer (see Appendix H). The independent reviewer fully supported the researchers categorisations of the interview transcripts into the two categories of controllable and uncontrollable for both successful and failed projects for all job responsibility levels.

Support Workers

The percentage of support workers making optimistic attributions for the causal dimension of controllability is presented in Table 78.

Table 78: Percentage of support workers making optimistic attributions for controllability

Attribution		% (Support Workers)	Evidence and Participant
Success	Controllable	70 %	"Say on this project... felt like I was being listened to" [SW3] "Could positively influence the project" [SW4] "Yes" [SW5] "Yes... able to influence it" [SW7] "As we got on with the project we were able to" [SW8] "Influence... Helped them develop a bigger picture" [SW9] "Yes" [SW10]
Failure	Uncontrollable	100 %	"I had no control over" [SW1] "Not at all... I felt everyone in my position" [SW2] "No ... cause of my contract role. People didn't ask" [SW3] "Didn't have any control" [SW4] "We were excluded out of the planning phase " [SW5] "Did what they wanted" [SW6] "Not me... to high up" [SW7] "Contractor then reliant upon what your told" [SW8] "I had no control... Very rare people ask for input" [SW9] "No... had an opinion but it would not be heard" [SW10]

Based on the high percentage of optimistic attributions for success (controllable attributions) and failure (uncontrollable attributions) it is evident that support workers tend to make optimistic attributions for both the causes of success and failure.

The percentage of support workers making pessimistic attributions for the causal dimension of controllability is presented in Table 79.

Table 79: Percentage of support workers making pessimistic attributions for controllability

Attribution		% (Support Workers)	Evidence and Participant
Success	Uncontrollable	30 %	"Basically we had no input" [SW1] "Not at all" [SW2] "Didn't really have much control. Did what I was told" [SW6]

Based on the low percentage of pessimistic attributions for success (uncontrollable attributions) and no pessimistic attributions for failure it is

evident that support workers tend not to make pessimistic attributions for both the causes of success and failure.

Combining both the optimistic and/or pessimistic attributions for each support worker an attributional tendency for the causal dimension of controllability was determined as presented in Table 80.

Table 80: Attributional tendency for controllability by support workers

Attributional Tendency	Participants									
	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10
Optimistic			•	•	•		•	•	•	•
Divided (Optimistic / Pessimistic)	•	•				•				
Pessimistic										

The attributional tendencies indicate that support workers tend to be more optimistic than pessimistic for the causal dimension of controllability. Where support workers where divided in their attributions, the optimistic attribution tended to be based around attributing failure to uncontrollable causes whilst the pessimistic attribution tended to be based around the attribution of success to uncontrollable causes.

Reasons for the optimistic attributions for controllability based on the interviews are presented in Table 81.

Table 81: Reasons for optimistic attributions for controllability by support workers

Reason		Outcome	Measure and Participant
Individual	Influence	Success	Ability to influence management and stakeholders [SW3][SW4][SW7][SW8][SW9]
		Failure	Inability to influence management and stakeholders [SW1][SW2][SW3][SW4][SW5] [SW7][SW8][SW9][SW10]
	Skills	Success	Ability to provide skills [SW5]
Project	Management	Success	Ability to delegate responsibility and motivate project team [SW5]
Organisational	Commitment	Failure	Insufficient resource allocation [SW7]

Based on optimistic attributions for the causal dimension of controllability, it is evident that during success support workers with an optimistic attributional style will tend to attribute the cause of success to controllable causes due to the ability to influence management and stakeholders, ability to provide skills and the ability to delegate responsibility and motivate the project team. Conversely, during failure these support workers will tend to attribute the cause of failure to uncontrollable causes due to the inability to influence management and stakeholders and the lack of organisational commitment reflected through insufficient resource allocations.

Reasons for the pessimistic attributions for the causal dimension of controllability based on the interviews are presented in Table 82.

Table 82: Reasons for pessimistic attributions for controllability by support workers

Reason		Outcome	Measure and Participant
Individual	Influence	Success	Inability to influence management [SW1][SW2][SW6]

Based on the pessimistic attributions for the causal dimension of controllability, it is evident that during success support workers with a pessimistic attributional style will tend to attribute the cause of success to uncontrollable causes due to the inability to influence management.

Line Managers

The percentage of line managers making optimistic attributions for the causal dimension of controllability is presented in Table 83.

Table 83: Percentage of line managers making optimistic attributions for controllability

Attribution		% (Line Managers)	Evidence and Participant
Success	Controllable	90 %	"We got them involved. Yeah... I think that set of requirements was controllable" [LM1] "In principal I would say so." [LM2] "To the extent, which I choose. If I couldn't influence it actually – I could reiterate it upwards" [LM3] "Can direct for decision everyone agrees on." [LM4] "Being small team I knew I influenced project. Had visibility and responsibility to make it work" [LM5] "Lots of default control mechanisms you could leverage – I did" [LM6] "Yes I did. Had requirement to deliver and free reign. Able to develop the code to meet the requirements" [LM8] "More influence than control." [LM9] "I was responsible for the production. I had a fair bit of control and was responsible" [LM10]
Failure	Uncontrollable	60 %	"I think there's nothing I could have done... not a great deal... its up to the client to organise the regions" [LM1] "Did lack in the control aspects" [LM6] "No" [LM7] "With staff changes we couldn't. Couldn't manage it." [LM8] "I don't think I could have" [LM9] "No" [LM10]

Based on the high percentage of optimistic attributions for success (controllable attributions), it is evident that line managers tend to make optimistic attributions for the causes of success. Due to the low to high percentage of optimistic attributions for failure (uncontrollable attributions), it is not clear whether line managers tend to make optimistic attributions for the causes of failure.

The percentage of line managers making pessimistic attributions for the causal dimension of controllability is presented in Table 84.

Table 84: Percentage of line managers making pessimistic attributions for controllability

Attribution		% (Line Managers)	Evidence and Participant
Success	Uncontrollable	10 %	"Little... Projects rushed" [LM7]
Failure	Controllable	40 %	"In the light of experience I tend to do that now" [LM2] "Could influence it – communicate with customer" [LM3] "Controllable – series of competing priorities" [LM4] "We were able to influence other divisions" [LM5]

Based on the low percentage of pessimistic attributions for success (uncontrollable attributions) it is evident that line managers do not tend to make pessimistic attributions for success. Due to the low to high percentage of pessimistic attributions for failure (controllable attributions) it is not clear whether line managers tend to make pessimistic attributions for the causes of failure.

Combining both the optimistic and/or pessimistic attributions for each line manager an attributional tendency for the causal dimension of controllability was determined as presented in Table 85.

Table 85: Attributional tendency for controllability by line managers

Attributional Tendency	Participants									
	LM1	LM2	LM3	LM4	LM5	LM6	LM7	LM8	LM9	LM10
Optimistic	•					•		•	•	•
Divided (Optimistic / Pessimistic)		•	•	•	•		•			
Pessimistic										

The attributional tendencies indicate that line managers tend to be more optimistic than pessimistic for the causality dimension of controllability. Where line managers where divided in their attributions, the optimistic attribution tended to be based around attributing success to controllable causes whilst the pessimistic attribution tended to be based around the attribution of failure to controllable causes.

Reasons for the optimistic attributions for the causal dimension of controllability based on the interviews are presented in Table 86.

Table 86: Reasons for optimistic attributions for controllability by line managers

Reason		Outcome	Measure and Participant
Individual	Influence	Success	Ability to influence management and stakeholders [LM1][LM2][LM3][LM4][LM5][LM8][LM9]
		Failure	Inability to influence management and stakeholders [LM1][LM6]
	Skills	Success	Ability to provide skills [LM1][LM8]
Project	Management	Success	Ability to delegate responsibility and motivate project team [LM6]
Organisational	Commitment	Failure	Insufficient resource allocations [LM6][LM8]

Based on the optimistic attributions for the causal dimension of controllability, it is evident that during success, line managers with an optimistic attributional style will tend to attribute the cause of success to controllable causes due to the ability to influence management and stakeholders, ability to provide skills and the ability to delegate responsibility and motivate the project team. Conversely, during failure these line managers will tend to attribute the cause of failure to uncontrollable causes due to the inability to influence management and stakeholders and insufficient resource allocations.

Reasons for the pessimistic attributions for the causal dimension of controllability based on the interviews are presented in Table 87.

Table 87: Reasons for pessimistic attributions for controllability by line mangers

Reason		Outcome	Measure and Participant
Individual	Influence	Failure	Ability to influence management and stakeholders [LM2][LM3][LM5]
Project	Management	Failure	Ability to delegate responsibility [LM2]

Based on the pessimistic attributions for the causal dimension of controllability it is evident that during failure line managers with a pessimistic attributional style will tend to attribute the cause of failure to controllable causes due to the ability to influence management and stakeholders and the ability to delegate responsibility.

Executive Managers

The percentage of executive managers making optimistic attributions for the causal dimension of controllability is presented in Table 88.

Table 88: Percentage of executive managers making optimistic attributions for controllability

Attribution		% (Executive Managers)	Evidence and Participant
Success	Controllable	100 %	"Small amount" [EM1] "Felt like I could influence." [EM2] "Yes... would have delayed it for a year though" [EM3] "Yes... we saw it coming when things were due – acted accordingly... Able to control impressions" [EM4] "Would like to think that I make contribution to team" [EM5] "Presenting decisions, options, recommendations" [EM6] "Controllable" [EM7] "51%" [EM8] "Felt I was being listened to a lot... A lot of what I identified was being taken into account" [EM9] "Definitely had influence... Strongly put it to executives that governance framework is working. Long battle but now have agreement" [EM10]
Failure	Uncontrollable	70 %	"Not in this project" [EM1] "I don't believe so" [EM2] "No possibly having influence. Decided by senior personnel. Not even my manager had an influence" [EM3] "It happened very quickly. If I could see it coming I would have controlled it" [EM4] "No control – public opinion" [EM7] "Nil – my opinion had little value" [EM8] "As lead engineer I couldn't have much influence" [EM9]

Based on the high percentage of optimistic attributions for success (controllable attributions) and failure (uncontrollable attributions), it is evident that executive managers tend to make optimistic attributions for the both the causes of success and failure.

The percentage of executive managers making pessimistic attributions for the causal dimension of controllability is presented in Table 89.

Table 89: Percentage of executive managers making pessimistic attributions for controllability

Attribution		% (Executive Managers)	Evidence and Participant
Failure	Controllable	30 %	"Yes we did have control to a certain point." [EM5] "Processes have improved... Showed processes" [EM6] "Like to think I had control. Most of the time was negotiating with them to get control" [EM10]

Based on the low percentage of pessimistic attributions for failure (controllable attributions) and no pessimistic attributions for success (uncontrollable attributions), it is evident that executive managers tend not to make pessimistic attributions for both the causes of success and failure.

Combining both the optimistic and/or pessimistic attributions for each executive manager an attributional tendency for the causality dimension of controllability was determined as presented in Table 90.

Table 90: Attributional tendency for controllability by executive managers

Attributional Tendency	Participants									
	EM1	EM2	EM3	EM4	EM5	EM6	EM7	EM8	EM9	EM10
Optimistic	•	•	•	•			•	•	•	
Divided (Optimistic / Pessimistic)					•	•				•
Pessimistic										

The attributional tendencies indicate that executive managers tend to be more optimistic than pessimistic for the causal dimension of controllability. Where executive managers were divided in their attributions, the optimistic attribution was based around attributing success to controllable causes whilst the pessimistic attributions tended to be based around the attribution of failure to controllable causes.

Reasons for the optimistic attributions based on the interviews are presented in Table 91.

Table 91: Reasons for optimistic attributions for controllability by executive managers

Reason		Outcome	Measure and Participant
Individual	Influence	Success	Ability to influence management and stakeholders [EM2][EM3][EM5][EM6][EM7] [EM8][EM9][EM10]
		Failure	Inability to influence management and stakeholders [EM1][EM2][EM3][EM4][EM7] [EM8][EM9]
Project	Management	Success	Ability to delegate responsibility and motivate project team [EM9]

Based on the optimistic attributions for the causal dimension of controllability, it is evident that during success, executive managers with an optimistic attributional style will tend to attribute the cause of success to controllable causes based on the ability to influence management and stakeholders and the ability to delegate responsibility and motivate the project team. Conversely, during failure these executive managers will tend to attribute the cause of failure to uncontrollable causes due to their inability to influence management and stakeholders.

Reasons for the pessimistic attributions for the causal dimension of controllability based on the interviews are presented in Table 92.

Table 92: Reasons for pessimistic attributions for controllability by executive managers

Reason		Outcome	Measure and Participant
Individual	Influence	Failure	Ability to influence stakeholders and management [EM6][EM10]
Project	Management	Failure	Ability to delegate responsibility [EM8]

Based on the pessimistic attributions for the causal dimension of controllability it is evident that during failure executive managers with a pessimistic attributional style will tend to attribute the cause of failure to controllable causes due to the ability to influence stakeholders and management and the ability to delegate responsibility.

Summary

The interviews indicate that all job responsibility levels tend to exhibit an optimistic attributional tendency for the causal dimension of controllability. The optimistic attributional tendency based around attributing success to controllable causes and failure to uncontrollable causes. Anecdotal evidence from the interviews suggest that line managers have a potential tendency to be more pessimistic than support workers and executive managers for the causal dimension of controllability.

Reasons for the optimistic attributions for the causal dimension of controllability evident in the interviews are presented in Table 93.

Table 93: Reasons for optimistic attributions for controllability

Reason		Outcome	Measure and Responsibility Level
Individual	Influence	Success	Ability to influence management and stakeholders [SW][LM][EM]
		Failure	Inability to influence management and stakeholders [SW][LM][EM]
	Skills	Success	Ability to provide skills [SW][LM]
Project	Management	Success	Ability to delegate responsibility and motivate project team [SW][LM][EM]
Organisational	Commitment	Failure	Insufficient resource allocations [SW][LM]

Based on optimistic attributions for the causal dimension of controllability, it is evident that during success, individuals with an optimistic attributional style will tend to attribute the cause of success to controllable causes, due to the ability to influence management and stakeholders, ability to provide skills and the ability to delegate responsibility and motivate the project team. Conversely, during failure these individuals will tend to attribute the cause of failure to the inability to influence management and stakeholders and the insufficient resource allocations.

Reasons for the pessimistic attributions for the causal dimension of controllability evident in the interviews are presented in Table 94.

Table 94: Reasons for pessimistic attributions for controllability

Reason		Outcome	Measure and Responsibility Level
Individual	Influence	Success	Inability to influence management [SW]
		Failure	Ability to influence stakeholders and management [LM][EM]
Project	Management	Failure	Ability to delegate responsibility [LM][EM]

Based on the pessimistic attributions for the causal dimensions of controllability, it is evident that during success, individuals with a pessimistic attributional style will tend to attribute the cause of success to uncontrollable causes, due to the inability to influence management. Conversely, during failure, these individuals will tend to attribute the cause of failure to controllable causes, due to the ability to influence stakeholders and management and the ability to delegate responsibility.

Attributional Style

The attributional styles for the job responsibility levels based on the attributional tendencies for the causal dimensions of internality, stability, globality and controllability obtained through the interviews are presented in Table 95.

Table 95: Attributional style for all job responsibility levels

Responsibility	Optimistic Attributional Tendency				Pessimistic Attributional Tendency				Attributional Style	
	Internality	Stability	Globality	Controllability	Internality	Stability	Globality	Controllability	Optimistic	Pessimistic
SW	•	•	•	•		•			•	
LM	•	•	•	•		•	•		•	
EM	•	•	•	•		•	•		•	

Based on the interview responses for the causal dimensions of internality, stability, globality and controllability it is evident that all job responsibility levels tend to exhibit an optimistic attributional style (i.e. each job responsibility tended to have a greater proportion of optimistic attributional tendencies than pessimistic). The interview responses also indicate that both line and executive managers due to the causal dimension of globality

tend to be slightly more pessimistic relative to support workers as illustrated Figure 14.

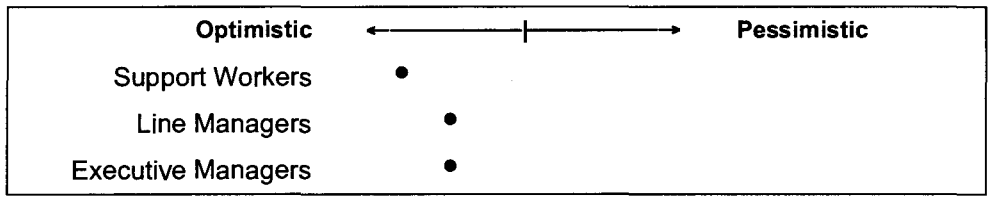

Figure 14: Attributional styles of all job responsibility levels

There is anecdotal evidence from the interviews that line and executive managers are likely to have a slightly more pessimistic attributional style than support workers due to:

- **Internality** - Line and executive managers having a potential tendency to increasingly make pessimistic attributions for the causal dimension of internality relative to support workers;
- **Stability** - Support workers having a potential tendency to be optimistic and executive managers pessimistic for the causal dimension of stability; and
- **Controllability** - Line managers having a potential tendency to be more pessimistic than support workers and executive managers for the causal dimension of controllability.

The variance on the attributional style from this research and the attributional style taking into consideration this anecdotal evidence is illustrated in Figure 15.

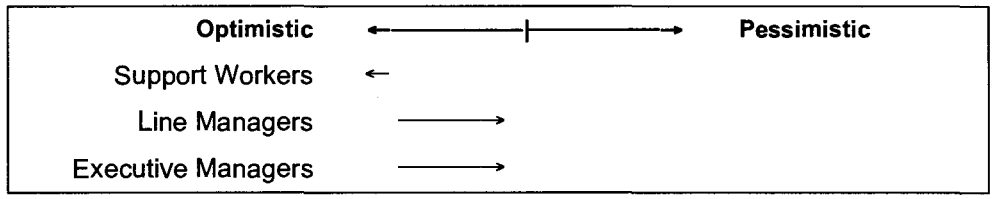

Figure 15: Attributional styles of all job responsibility levels using anecdotal evidence

Based on this anecdotal evidence it is evident that all job responsibility levels are likely to still exhibit an optimistic attributional style. However, support workers are increasingly more likely to exhibit an optimistic attributional style whilst line and executive managers are increasingly more likely to exhibit a pessimistic attributional style.

Collapsed Causal Dimensions

Based on the WASQ, attributional style is determined using the causal dimensions of internality, stability, globality and controllability (Ashforth & Fugate, 2006, p. 24). However, it is postulated that attributional style based

on the WASQ can also be determined by collapsing internality/controllability and stability/globality into two separate collapsed causal dimensions (Ashforth & Fugate, 2006, p. 24).

The two separate collapsed causal dimensions are based on the attributional tendency of internality and controllability / stability and globality both being similar (e.g. both internality and controllability having an optimistic attributional tendency). Based on the interviews the only exception in this research was support workers in which the attributional tendency for stability and globality varied (i.e. stability was divided and globality was optimistic). In this instance, an optimistic attributional tendency for stability/globality was utilised, as the divided attributional tendency for stability was inconclusive.

The attributional styles for the job responsibility levels based on the collapsed causal dimensions of internality/controllability and stability/globality obtained through the interviews responses are presented in Figure 16.

Responsibility	Optimistic Attributional Tendency		Pessimistic Attributional Tendency		Attributional Style	
	Internality / Controllability	Stability / Globality	Internality / Controllability	Stability / Globality	Optimistic	Pessimistic
Support Worker	•	•			•	
Line Manager	•	•		•	•	
Executive Manager	•	•		•	•	

Figure 16: Attributional style with collapsed causal dimensions

Using the collapsed causal dimensions, it is evident that all job responsibility levels exhibited an optimistic attributional tendency, similar to the non-collapsed WASQ (i.e. each job responsibility tended to have a greater proportion of optimistic attributional tendencies than pessimistic). The interview responses indicate that both line and executive managers, due to the collapsed causal dimension of stability/globality, tend to be slightly more pessimistic relative to support workers.

Summary

Definitions of project success provide evidence that personal success is based around emotions (e.g. pride, joy), abilities (e.g. achieve objectives, job done right) and self-worth (e.g. loosing, winning). In addition, the definitions for project success indicate that support workers do not associate project success and failure with meeting cost objectives which is traditionally considered part of the basic criteria for measuring project success, alongside cost and quality (Baccarini, 2007, p. 201).

Based on the interviews all job responsibility levels exhibit an optimistic attributional style using both the WASQ and the collapsed WASQ (i.e. internality/controllability and stability/globality). The optimistic attributional style is based around the following optimistic tendencies:

- **Internality** – all job responsibility levels tend to attribute success to internal causes and failure to external causes;
- **Stability** – all job responsibility levels tend to attribute success to stable causes;
- **Globality** – support workers tend to attribute success to global causes and failure to specific causes whilst line and executive managers attributed success to global causes; and
- **Controllability** – all job responsibility levels tend to attribute success to controllable causes and failure to uncontrollable causes.

However, the following pessimistic tendencies were evident:

- **Stability** – all job responsibility levels tend to attribute failure to stable causes; and
- **Globality** – line and executive managers tend to attribute failure to global causes.

Reasons for these attributions based on the interviews are presented in Table 96. Unfortunately, due to the small sample size it was not possible to compare the reasons between job responsibility levels.

Table 96: Reasons for optimistic attributions

Reason		Outcome	Measure and Participant
Individual	Confidence	Success	**Globality** Improved confidence due to factors such as recognition of contribution from peers [SW][LM][EM]
	Influence	Success	**Internality and Controllability** Ability to influence stakeholders and management [SW][LM][EM] **Stability** Ability to influence stakeholders [LM][EM]
		Failure	**Globality** Inability to influence management [SW] **Controllability** Inability to influence management and stakeholders [SW][LM][EM]
	Skills	Success	**Internality** Ability to provide skills [SW][LM][EM] **Globality** Ability to develop skills [SW][LM][EM] **Controllability** Ability to provide skills [SW][LM]
Project	Management	Success	**Stability** Ability to obtain a capable project manager who has experience in planning and ensuring business requirements and/or success criteria are achieved [SW][LM][EM] **Controllability** Ability to delegate responsibility and motivate project team [SW][LM][EM]
		Failure	**Internality** Inability to obtain a capable project manager who has experience in planning and ensuring business requirements are achieved [SW][LM][EM]

Reason		Outcome	Measure and Participant
			manager [SW]
	Stakeholders	Failure	**Internality** Inability of stakeholders to successfully influence and control project decisions due to a lack of authority and/or communication channels [SW][LM][EM]
	Team	Success	**Globality** Improved team morale [EM]
		Failure	**Internality** Inability of the team to contribute to the project outcome [SW][LM]
Organisational	Commitment	Failure	**Internality** Inability to obtain executive management commitment and sufficient resource allocations [SW][LM][EM] **Controllability** Insufficient resource allocations [SW][LM]
	Environment	Success	**Stability** Ability of the organisation to successfully complete projects [SW] **Globality** Ability to realise organisational benefits from the project [SW][LM]
		Failure	**Internality** Unstable organisational environment (e.g. high staff turnover, organisational restructures) [LM][EM]
	Knowledge	Success	**Stability** Ability of the organisation to retain knowledge [SW][LM][EM]
		Failure	**Stability** Ability of the organisation to retain knowledge [SW][LM]

Based on the optimistic attributions it is evident that during success individuals with an optimistic attributional style will tend to attribute the

cause of success to their improved confidence, ability to influence stakeholders and management, ability to develop and provide skills, ability of the project manager, ability to delegate responsibility and motivate the team, improved team morale, ability of the organisation to complete projects and realise benefits and the ability of the organisation to retain knowledge. Conversely, during failure these individuals will attribute the cause of failure to the inability to influence management and stakeholders, inability of the project manager, inability of the team to contribute, inability to obtain organisational commitment, unstable organisational environment and the ability of the organisation to retain knowledge.

Reasons for the pessimistic attributions based on the interviews are presented in Table 97. Unfortunately, due to the small sample size it was not possible to compare the reasons between job responsibility levels.

Table 97: Reasons for pessimistic attributions

Reason		Outcome	Measure
Individual	Confidence	Failure	**Globality** Lose of confidence [SW][LM][EM]
	Influence	Success	**Stability** Inability to influence stakeholders [LM][EM] **Controllability** Inability to influence management [SW]
		Failure	**Internality** Lack of initiative to influence project [LM][EM] **Stability** Inability to influence stakeholders and management [SW][LM][EM] **Globality** Inability to influence management [SW][LM][EM] **Controllability** Ability to influence stakeholders and management [LM][EM]
	Skills	Failure	**Globality** Adverse impact on their perceived professionalism [LM][EM]
Project	Management	Success	**Internality** Ability to obtain a capable project

Reason		Outcome	Measure
			manager who has experience in managing and/or directing a team and project [SW][LM][EM]
		Failure	**Stability** Inability to obtain a capable project manager who has experience in planning and ensuring business requirements are achieved [SW][LM][EM] **Controllability** Ability to delegate responsibility [LM][EM]
	Stakeholders	Success	**Internality** Ability of stakeholders to successfully influence the project [LM][EM]
	Team	Success	**Internality** Ability of the team to contribute to the project outcome [LM][EM]
Organisational	Commitment	Success	**Internality** Ability to obtain executive management commitment and sufficient resource allocations [SW][LM][EM]
		Failure	**Stability** Inability to obtain executive management commitment and sufficient resource allocations [LM][EM]
	Environment	Success	**Stability** Unstable organisational environment (e.g. high staff turnover, organisational restructure) [SW][EM]
		Failure	**Stability** Inability of the organisation to successfully complete projects and an unstable organisational environment (e.g. restructuring) [SW][LM] **Globality** Negative organisational environment due to unsatisfied stakeholders and/or the realisation of lost organisational benefits [SW][LM][EM]

Reason		Outcome	Measure
	Knowledge	Failure	**Stability** Inability of the organisation to retain knowledge [SW][LM][EM]

Based on pessimistic attributions it is evident that during success individuals with an pessimistic attributional style will tend to attribute the cause of success to their inability to influence stakeholders and management, ability of project manager, ability of stakeholders, ability of the team to contribute, organisational commitment and an unstable organisational environment. Conversely, during failure these individuals will tend to attribute the cause of failure to a lose of individual confidence, lack of initiative, ability or inability to influence management and stakeholders, adverse impact on perceived professionalism, inability of project manager, ability to delegate responsibility, lack of organisational commitment, inability of the organisation to complete projects, unstable organisational environment and the inability to retain knowledge. However, based on the attributions for failure it is evident that the ability to influence management and stakeholders (i.e. stability and globality) and the inability to influence management and stakeholders (i.e. controllability) appears contradictory when aggregated.

Whilst all job responsibility levels exhibited an optimistic attributional style, anecdotal evidence from the interviews suggest that line and executive managers are likely to have a slightly more pessimistic attributional style relative to support workers due to:

- **Internality** - Line and executive managers having a potential tendency to increasingly make pessimistic attributions for the causal dimension of internality;
- **Stability** - Support workers having a potential tendency to be increasingly optimistic and executive managers increasingly pessimistic for the causal dimension of stability; and
- **Controllability** - Line managers having a potential tendency to be increasingly more pessimistic than support workers and executive managers for the causal dimension of controllability.

Reasons for line and executive managers having an increased pessimistic attributional style relative to support workers based on this anecdotal evidence were subsequently explored in the focus groups.

Chapter 5: Research Findings (Focus Groups)

In this chapter:

"Opinion is like a pendulum and obeys the same law. If it goes past the centre of gravity on one side, it must go a like distance on the other; and it is only after a certain time that it finds the true point at which it can remain at rest."

– Arthur Schopenhauer

In this chapter, I will provide the findings for this research based on four focus groups conducted to explore emergent themes from the interviews using participants invited from the interview phase. The chapter predominantly examines the focus group findings for the causal dimensions of internality, stability, globality and controllability and the resultant attributional styles. The chapter concludes with a summary of the major focus groups findings in the context of the research questions.

Demographic Information

The composition of each focus group is presented in Table 98.

Table 98: Number of participants in each focus group

Sample	% (Participants)		
	SW	LM	EM
Focus Group (One)		2	3
Focus Group (Two)	1	2	
Focus Group (Three)	3		
Focus Group (Five)		1	2

The compositions of the focus groups indicate an almost equal participant representation per job responsibility level across the four focus groups. Additionally, it also highlights varying ratios of participants in the three job responsibility levels for each focus group. This difference due to participant availability and the desire to ensure support workers contributed in discussion (i.e. not threatened or uncomfortable due to the participation of executive managers) whilst maintaining small focus group sizes.

Outcome

The interview responses indicated that support workers did not perceive meeting cost objectives as a component of project success or failure.

Meeting Cost Objectives

To understand the reasons why support workers did not associate project success and failure with meeting cost objectives the focus groups were each asked:

- Why would support workers not consider meeting cost objectives for project success and failure whilst line and executive managers did?

The reason that emerged from the focus groups in response to this question is presented in Table 99.

Table 99: Reason for increased focus on financial aspects with increased responsibility

Reasons		Evidence and Focus Group
Responsibility	Increasing degree of responsibility	"Not their responsibility... if support workers answer to users and stakeholders at the base level then success is determined by the user opinion" [FG1] "Specific tasks and planning – not finance... Finance does not come into consideration for support workers – they aren't even advised of the financial allocation for projects" [FG2] "Junior people don't have budget considerations... Their focus is on getting the job done – not finance" [FG3]

Based on the focus groups the primary reason support workers did not consider meeting cost objectives within their definitions of project success and failure was due to their limited responsibility for finances. For instance, support workers typically have no accountabilities for ensuring project cost objects are achieved.

All focus groups indicated that it is plausible for support workers to not associate meeting cost objectives with project success or failure.

Internality

The interview responses indicated that executive managers were more likely to attribute success to external causes than support workers. To understand the reasons why executive managers were more likely to attribute success to external causes than support workers, the focus groups were each asked:

- Why would executive managers be more likely to attribute project success to external causes than support workers?

The key reasons that emerged from the focus groups in response to this question are presented Table 100.

Table 100: Reasons for increased external attributions with increased responsibility

Reason		Evidence and Focus Group
Dependence	Increasing dependence on project team and stakeholders on success	"Distinct corporate trend in the last 3 yrs or so to have an enhanced leadership focus for even senior managers" [FG1] "Junior support personnel more at the centre of the universe" [FG2] "Increased seniority means more supervisory roles – give tasks to less senior individuals" [FG3]

Reason		Evidence and Focus Group
Awareness	Increasing awareness of the impact of external influences on success	"Executives probably realise that a small number of external influences can have disproportionate effect on the project" [FG1]

Based on the focus groups the primary reason that executive managers are more likely to attribute success to external causes relative to support workers is due to their increased dependence on the project team and stakeholders. An additional reason cited by a focus group was the increased awareness of the impact of external influences on success by executive managers. Both these findings indicate that executive managers relative to support workers have a greater dependence and awareness of external influences on project success than support workers.

All focus groups indicated that it is plausible for executive managers to be more likely to attribute success to external causes than support workers.

Stability

The interview responses indicated that line and executive managers were more likely to attribute failure to stable causes than support workers. To understand the reasons why line managers and executive managers were more likely to attribute failure to stable causes than support workers, the focus groups were each asked:

- Why would line managers and executive managers be more likely to attribute project failure to stable causes than support workers?

The reasons that emerged from the focus groups in response to this question are presented in Table 101.

Table 101: Reasons for Increased stable attributions with increased responsibility

Reasons		Evidence and Focus Group
Experience	Increased experience	"Support workers... don't know about all the issues... visibility of failure triggers is limited to executive... senior people see external chaos as "stable" where internal people see it as "exceptional" when it affects their job" [FG1] "Support workers have misguided belief management will change... naivety...senior management bring prior experiences of failure to the project" [FG2] "Support workers are naïve, believe other learn" [FG3] "Increased awareness that no previous project is the same as new projects" [FG4]

Knowledge	Increased awareness that knowledge acquired through previous projects may not be captured for future projects	"A lot of stuff is not written down and therefore hard to repeat" [FG4]

Based on the focus groups the primary reason that line managers and executive managers are more likely to attribute project failure to stable causes than support workers is due to their increased experience which leads to increasing scepticism that change required for improvement will occur. An additional reason cited by a focus group was the increased awareness that knowledge acquired through previous projects may not be captured for future projects. Both these findings indicate that line managers and executive managers are more likely to perceive project failure as stable due to their experience and awareness that knowledge management initiatives are potentially ineffective.

All focus groups indicated that it is plausible for line managers and executive managers to be more likely to attribute failure to stable causes than support workers.

Globality

The interview responses indicated that line managers and executive managers are more likely to attribute failure to global causes than support workers. To understand the reasons why line managers and executive managers are more likely to attribute failure to global causes, the focus groups were each asked:

- Why would line managers and executive managers be more likely to attribute project failure to global causes than support workers?

The reasons that emerged from the focus groups in response to this question are presented in Table 102.

Table 102: Reasons for increased global attributions with increased responsibility

Reasons		Evidence and Focus Group
Influence	Increasing levels of influence	"Support workers are delegated work they can achieve... Senior people often have power to influence situations - they feel responsible" [FG1] "Support workers are more independent in thinking as they have less responsibility" [FG2] "Limited responsibility down the chain... Support workers cant really take the blame as they have no responsibility" [FG3] "Increasingly beyond support workers capabilities and their influence" [FG4]
Outcome	Increased realisation that outcome doesn't impact just a single individual but a organisation	"Increased career orientation means they care more for the organisation junior people more job oriented and themselves" [FG4]

Based on the focus groups the primary reason that line managers and executive managers would be more likely to attribute failure to global causes than support workers is due to the increased levels of influence afforded to managers. In particular, unlike support workers who are given specific tasks to achieve within a project, line managers and executive managers are typically afforded the ability to influence a project outcome through their decisions that have the potential to increasingly impact subsequent projects and other projects within a portfolio. An additional reason cited by a focus group was the increased realisation that the outcome doesn't impact just a single team or individual, but instead an organisation. For instance, the inability to deliver to deliver a critical project can at worse case lead to the organisation being uncompetitive and going bankrupt or a business unit failing to achieve its objectives. Both these findings indicate that line managers and executive managers are more likely to attribute failure to global causes than support workers due to their increased influence and awareness of the broader consequences on the organisation of failure.

All focus groups indicated that it is plausible for line managers and executive managers to be more likely to attribute failure to global causes than support workers.

Controllability

The interview responses indicate that line manager's are more likely to believe the causes of failure were controllable relative to support workers and executive managers. To understand the reasons why line managers potentially believed failed projects were controllable the focus groups were each asked:

- Why would line managers be more likely to attribute failure to controllable causes than executive managers and support workers?

The reason that emerged from the focus groups in response to this question is presented in Table 103.

Table 103: Reasons for increased controllable attributions for failure by line managers

Reasons		Evidence and Focus Group
Role	Support workers focus on operational issues whilst executives provide strategic vision. Line managers must bridge these two levels.	"Sort of like a see saw. They are in the middle between junior people and managers. Need to control this interface" [FG2] "Need to balance two views from either extremes of the organisation" [FG4]

Based on the focus groups the primary reason that line managers would be more likely to attribute failure to controllable causes than executive managers and support workers is due to their role in bridging the strategic vision of executive managers with the operational issues that confront support workers. For instance, line managers must balance unrealistic work hours with the executive manager stakeholders for implementation deadlines.

All focus groups indicated that it is plausible for line managers to be more likely to attribute failure to controllable causes than support workers, but not executive managers.

Attributional Style

The attributional style determined from the interviews indicated that all job responsibility levels exhibited an optimistic attributional style and that the degree of optimism decreased as the job responsibility level increased. The focus groups sought to understand why these two themes were evident.

Optimistic Attributional Style

To understand the reasons why all job responsibility levels exhibited an optimistic attributional style the focus groups were each asked:

- Why would all job responsibility levels exhibit an optimistic instead of a pessimistic attributional style?

The reasons that emerged from the focus groups in response to this question are presented in Table 104.

Table 104: Reasons all job responsibility levels exhibit an optimistic attributional style

Reasons		Evidence and Focus Group
Profession	Individuals overall perception of the world optimistic	"Pessimistic project managers are on a short track to a nervous breakdown...pessimistic staff aren't able to get any reward out of the job... pessimistic executives see no future in there career track and leave" [FG1] "Would never survive in Information Technology if pessimistic" [FG2] "Positive people more likely to be employed" [FG3]
	Constantly changing and challenging profession	"Information Technology... changing and presenting new challenges" [FG2]

Based on the focus groups the primary reason for the job responsibility levels to exhibit an optimistic attributional style is due to the individuals employed in IT projects potentially being more likely to be optimistic relative to other occupations. A subsequent focus group suggesting this optimistic nature is due to IT being a constantly changing and challenging profession that presents new challenges and provides exciting new opportunities to realise business value.

All focus groups indicated that it is plausible, and more likely, for all job responsibility levels to exhibit an optimistic attributional instead of a pessimistic attributional style.

Decreased Optimism with Increased Responsibility

To understand the reasons why the degree of optimism decreased as the job responsibility level increased the focus groups were each asked:

- Why would the degree of optimism decrease as the job responsibility level increased?

The reasons that emerged from the focus groups in response to this question are presented in

Table 105: Reasons for optimism decreasing with increased responsibility

Reasons		Evidence and Focus Group
Commitment	Increased difficultly in meeting expectations	"It becomes more difficult to reach goals as you become more senior" [FG1] "Unmet expectations at senior levels have a significant impact" [FG2] "Executive managers know they have to employ and handover some control to people who don't have much invested in the project" [FG3]
Duration	Increased duration in the profession	"Not many people can stay in projects forever... have to be pretty tough mentally... people spend 4-10 years in projects and then move on" [FG1] "Burnout after 3, 6 or 8 years" [FG2]
Environment	Increased environmental awareness	"Being blindly optimistic is just setting yourself up for a fall... More visibility of the project - you see the whole package." [FG1]

Based on the focus groups the primary reason that the degree of optimism potentially decreases as the as the job responsibility increases is due to the increased difficulty in meeting expectations. For instance, support workers are typically required to achieve defined projects tasks whereas executive managers typically have to manage expectations, which may not be shared by all projects stakeholders and instead maybe driven by organisational politics. Additional reason cited by the focus groups was that extended durations of project involvement, particularly at executive manager level, typically contributed to burnout and resignation after a certain period of time that could be associated with an increased level of pessimism and their increased environmental awareness (i.e. increased recognition of risks that can impact projects and thereby increased reluctance to take risks).

All focus groups indicated that it is plausible for the degree of optimism to decrease as the job responsibility level increased.

Summary

Definitions of project success based on the interviews indicated that support workers do not associate project success and failure with meeting cost objectives. The focus groups suggest this finding is due to the lack of financial responsibility and accountabilities assigned to support workers relative to line and executive managers.

Based on the interviews it is also apparent that anecdotal evidence exists to suggest that line and executive managers are likely to be slightly more pessimistic relative to support workers even though all job responsibility levels exhibit an overall optimistic attributional style. Based on the focus groups, suggested reasons for this increased pessimism are presented in Figure 17.

	Support Workers	Line Managers	Executive Managers
	Optimistic Attributional Style ⟶ Pessimistic Attributional Style		
Success	**Internality** Increasing awareness of the impact of external influences on success Increasing dependence on project team and stakeholders on success		
Success & Failure	**Attributional Style** Increased difficultly in meeting expectations Increased duration in the profession Increased environmental awareness		
Failure	**Stability** Increased experience Increasing awareness that past knowledge acquired may be not be captured **Globality** Increasing levels of influence Increased realisation that outcome doesn't impact just a single individual but a organisation		

Figure 17: Reasons for increasing pessimism with increasing job responsibility

Based on the focus groups, it is evident that possible reasons for the increased pessimism with increased job responsibility is due to an increased awareness of the impact of external influences on success, increased dependence on the project team and stakeholders, increased difficultly in meeting expectations, increased duration in the profession and experience, increased awareness that knowledge retention is ineffective, increased levels of influence and increased realisation that project failure impacts the entire organisation. The focus groups also suggest that anecdotal evidence from the interviews for line managers being more likely to attribute failure to controllable causes other than both support workers and executive managers is due to their stressful role in bridging the operational and strategic environments.

Chapter 6: Discussion, Limitations, Implications, Future Research and Concluding Remarks

In this chapter:

"Attribution theory is a core element of social-psychological thinking"

- Bertram Malle (2003, p. 1)

In this chapter, I will examine the research outcomes. The chapter begins by discussing the research findings and limitations. Next, the chapter examines the implications of these findings for practitioners and researchers. Finally, the chapter provides an insight into potential future research opportunities before presenting the concluding remarks for this research.

Discussion

Attributional style is influenced by an individual's experience (Zubin & Spring, 1977, p. 105) which in Australian society is typically associated to a job responsibility level (i.e. increased experience is typically related to increased job responsibility levels). Indeed, the demographic information from this research supports this premise by indicating that tertiary qualifications tend to increase (i.e. certificate to postgraduate) alongside years of experience in IT (i.e. 1-2 years to 7-10 years) as the job responsibility level increases (i.e. support worker to executive manager).

To determine if attributional style varied with experience, reflected through increasing job responsibility levels, the first research question posed was:

- Does attributional style vary as an individual's level of seniority changes for a successful and failed Information Technology project?

Based on the interview findings it is evident that all job responsibility levels exhibit an optimistic attributional style. The optimistic attributional style being due to the following optimistic tendencies being evident:

- **Internality** – all job responsibility levels tend to attribute success to internal causes and failure to external causes;
- **Stability** – all job responsibility levels tend to attribute success to stable causes;
- **Globality** – support workers tend to attribute success to global causes and failure to specific causes, whilst line and executive managers attributed success to global causes; and
- **Controllability** – all job responsibility levels tend to attribute success to controllable causes and failure to uncontrollable causes.

These optimistic tendencies were partially offset by the following pessimistic tendencies:

- **Globality** – line and executive managers attributed failure to global causes. The tendency to attribute failure to global causes based on the learned theory of helplessness is likely to lead to increased feelings of helplessness across situations (Abramson et al., 1978, p. 68); and
- **Stability** – all job responsibility levels attributed failure to stable causes. The tendency to attribute failure to stable causes based on the

reformulated model of learned helplessness has the potential to lead to any depressive deficits to persist (Abramson et al., 1978, p. 56).

The relationship between these optimistic and pessimistic attributional tendencies is illustrated in Figure 18 in which it is clearly evident that the causal dimensions tended to be optimistic (i.e. top left and right quadrants). Due to the dominance of optimistic attributional tendencies it is clear that an optimistic attributional style was evident in all job responsibility levels.

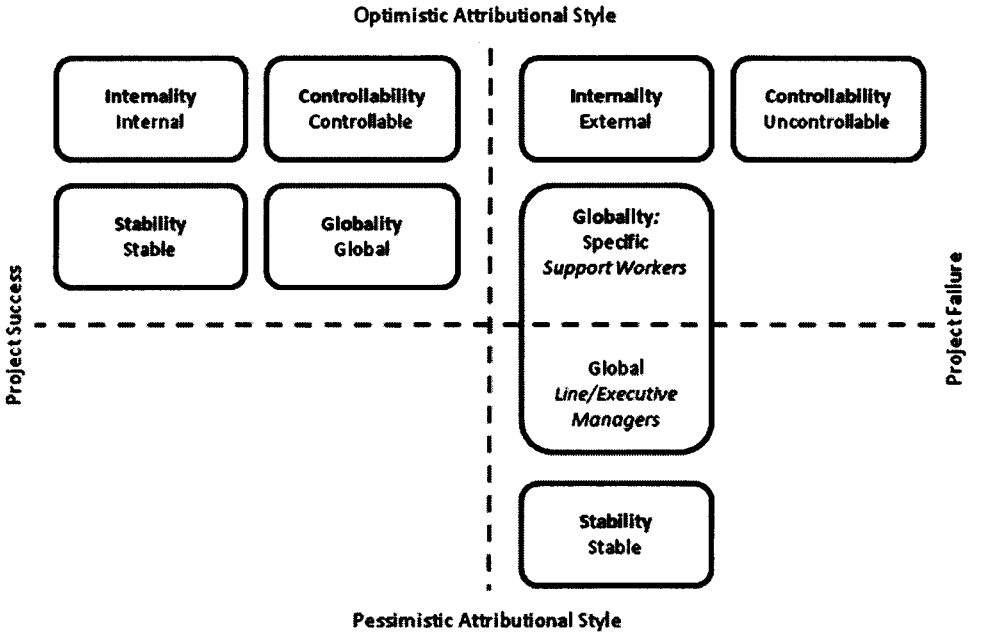

Figure 18: Attributional style and associated causal dimensions

Based on both the optimistic and pessimistic attributional tendencies it is evident that the degree of optimism did marginally vary between the job responsibility levels due to the causal dimension of globality. In particular, line managers and executive managers attributed failure to global causes unlike support workers who attributed failure to specific causes.

To determine the reasons why the increased pessimism was evident for line and executive managers relative to support workers, the following research question was posed:

- Why does attributional style vary as an individual's level of seniority changes for a successful and failed Information Technology project?

Based on an analysis of the interviews and focus groups in relation to the causal dimension of globality (i.e. where the difference existed), several reasons have emerged to provide an answer to this research question. The main reasons identified are:

- **Adverse Impact on Perceived Professionalism by Peers Following Failure** – line and executive managers, in contrast to support workers, indicated through the interviews that failure would impact how they are professionally perceived which in turn would impact subsequent projects (i.e. global consequences). For instance, if individuals perceive a project manager to be incompetent due to a significant project failure, they will be less likely to fully trust that project manager in subsequent projects (DuPont, 1988, p. v). The lack of trust is capable of compromising their ability to influence individuals and garner support for future projects which is critical for effective management;
- **Continued Inability to Influence Stakeholders and/or Management** – based on the focus groups, line and executive managers, in contrast to support workers, are increasingly dependent on their ability to influence stakeholders and/or management to ensure project success (e.g. ensure resource availability, change request management). In the unfortunate event that line and executive managers are unable to influence stakeholders and/or management due to factors such as organisational politics, it is highly probable that this may persist and impact subsequent projects (i.e. global consequences) making it increasingly difficult to meet expectations. The ability of managers to influence projects is pivotal to project success and highly dependent on their experience (Hyvari, 2006, p. 31). The inability to influence stakeholders and/or management due to a lack of empowerment is likely to increase feelings of helplessness and organisational tension (Spreitzeir, 2007, p. 1084);
- **Strategic Impact of the Project Failure** – based on the focus groups, line and executive mangers, in contrast to support workers, are increasingly aware that project failure is not based solely around project management failure, but also around product failure which has wider strategic implications that will continue to persist in subsequent projects (i.e. global consequences); and
- **Complexity of Social and Technical Challenges at the Macro Level** – based on the focus groups, line and executive managers, in contrast to support workers, are increasingly involved at the macro level. This shift from the micro level (e.g. skills and competencies, performance measurement systems) to macro level (e.g. organisational structures, supporting management practices) is accompanied by increasingly

complex social and technical challenges (Kendra & Taplin, 2004, p. 33). The increased complexity of these social and technical challenges typically require significant time frames to change and therefore likely to impact multiple projects (i.e. global consequences). This is in contrast to challenges at the micro level that are typically limited to a specific project.

In addition to these reasons based around globality in which the causal dimensions varied, the following broader reasons also emerged from the research:

- **Ineffective Knowledge Retention Initiatives** – based on the focus groups, line and executive managers, in contrast to support workers, are increasingly likely to recognise that knowledge retention initiatives within the organisation are ineffective. The failure to retain knowledge capable of having an adverse impact on the likelihood of subsequent project successes (Reich & Wee, 2006, pp. 11-12). This issue compounded, particularly with contracted staff leaving the organisation after project termination. Indeed, research suggests the transfer of knowledge is a critical component of project management success (Kezsbom, 1988, p. 1.2.3);
- **Increased Situational Awareness** – based on the focus groups, line and executive managers, in contrast to support workers, have greater situational awareness potentially due to their involvement at the macro level. Whilst increased situational awareness has the potential to avoid issues (e.g. visibility of looming issues), it also has the potential to translate into increased cautiousness in decision-making. This increased cautiousness in decision making is capable of increasing pessimism (Krizan & Windschitl, 2007, p. 332). Whilst increased pessimism is evident, it appears unavoidable as increased job responsibility levels are based around increased awareness (e.g. competitors, strategic planning);
- **Increased Experience** – based on the focus groups, line and executive managers, in contrast to support workers are likely to be more experienced. The increased experience is reflected in their recognition that causes of failed projects are likely to persist in the organisation;
- **Increased Duration of Employment** – based on the focus groups, line and executive managers, in contrast to support works are likely to be

impacted by increased exposure to projects. The increased exposure to projects is likely to lead to increased pessimism prior to burn out and departure from the profession; and

- **Increasing Dependence on Individuals** – based on the focus groups, line and executive managers, in contrast to support workers, are increasingly dependent on individuals to successfully complete projects. Due to the increased dependence on individuals, they are more likely to attribute success to external causes (e.g. project team, stakeholders). As a consequence of these external attributions for success, pessimism is likely to increase.

Based on the overall optimistic attributional style evident in this research, it is likely that IT professionals involved with projects will regain from hopelessness and recover from depression when positive events occur (Needles & Abramson, 1990, p. 156). In particular, achieve subsequent project successes.

Limitations

The research has several limitations that need to be recognised. The main limitations evident in this research are based around the selected research paradigm, limited supplemental data sources, objectivity, transferability, research instrument and individual disclosure.

Research Paradigm

Information systems research through its business focus has been suggested to have resulted in "greater concentration on the outcomes and practical or methodological issues rather than the ontological and philosophical reasoning behind a particular research approach" (Dobson, 2002). As a consequence, practitioner based doctorates seemingly appear to dismiss research paradigms.

In this research we have endeavoured to root the methodology into a critical research paradigm. The selection of the paradigm is guided by the premise that individuals are constrained by deep seated, structural contradictions within social systems which can be critiqued and thereby potentially transformed (Orlikowski & Baroudi, 1991, pp. 5-6). Indeed, it initially appeared when developing the research proposal that this would be logical (e.g. support workers potentially constrained by executive managers due to deep seated structural contradictions emerging through the

attributions). However, as the research unfolded these power differences that were perceived to be evident did not emerge.

Whilst not the perfect paradigm based on the power differences not emerging, critical research provided the ability to explore tendencies (e.g. support workers are likely to be more pessimistic than optimistic) and their meanings. In addition, it provided an invaluable opportunity for practitioners to reflect on their attributional style that offered them the potential to transform the workplace.

In hindsight, the research could have adopted either a positivist or an interpretivist research paradigm to guide the research. However, in the context of this research, both these paradigms may have impacted the research in different ways. For instance, an interpretivist approach may have potentially impacted the ability to draw tendencies from the interviews (e.g. tendency for support workers to be pessimistic) whilst the positivist approach may have impacted the ability to understand the reason for attributions. Ideally, if time were not a critical constraint in this research, the adoption of both positivist and interpretivist research paradigms for separate components of this research would have provided an ideal approach.

Supplemental Data Sources

Interviews are based around the interpretation of informants and should be supplemented with other sources of field data (Walsham, 2006, p. 323). Unfortunately, due to the absence and classification of other supplemental sources of field data (e.g. project closure reports) the only secondary source used was focus groups. Ideally, the inclusion of additional supplemental data sources would have afforded a higher degree of credibility to the research (e.g. additional data sources for triangulation) if available.

Objectivity

Analysing interviews is dependent on the researchers objectively in interpreting the data. Whilst all efforts were made to ensure this occurred within the resource constraints of the research (e.g. triangulation, coding matrices developed, interview transcripts findings independently verified) multiple interpretations of the data are still possible due to biases and distortions (Walsham, 2006, p. 326). Critics perceive the pursuit of

objectivity as one of the primary limitations of qualitative research (Antonakis, Cianciolo, & Sternberg, 2004, p. 82).

Transferability

The transferability of this research is the responsibility of the reader. However, several decisions such as selecting a purposive instead of random sampling technique, selecting only one organisation instead of multiple and relatively small interview and focus groups sizes all have the potential to limit the transferability of the research in the eye of the reader. It must however be noted that the results tend to support prior quantitative research by Standing, Guilfoyle, Lin & Love (2006) using the OASQ which have the potential to enhance transferability.

Research Instrument

The application of the WASQ in a qualitative manner in this research provided an exciting opportunity to test this attributional style instrument. Whilst the research tends to indicate it provides similar results to the OASQ employed by Standing, Guilfoyle, Lin & Love (2006) it has not received the same level of empirical validation. This lack of extensive empirical validation may be perceived as a limitation of the research instrument utilised in this research.

Individual Disclosure

Research focused on individual behaviour, has the real potential to be impacted by interview participants not fully trusting the researcher (Myers & Newman, 2007, p. 4). In particular, social aspects such as "males who disclose very personal information to other men are viewed as less well adjusted" (Prage, 1995, p. 212) may have limited the ability to gather data considered personally sensitive even though the researcher sought to ensure trust was established.

Implications for Practitioners

The research has several implications for practitioners that are summarised in this section. These implications are based around optimism, self-esteem, organisational learning, cost objectives, strategic involvement and pressures on line managers.

Optimism

The optimistic attributional style based on the model recovery from depression indicates that information technology professionals involved with projects are extremely likely to regain from hopelessness and recover from depression when positive events occur such as subsequent project successes (Needles & Abramson, 1990, p. 156). Potential reasons for this in the information technology project domain include individuals identifying positive benefits associated with failure that include (Driscoll, 1989):

- **Strength** – makes individuals tougher, stronger and more resilient to the struggle of subsequent projects;
- **Awareness** – increases awareness of what individuals are actually up against. It provides the opportunity to try something entirely different and innovative;
- **Stepping Stone** – the more individuals fail the more they succeed if they stay out there trying; and
- **Humility** – renews humility and prevents an individual taking life too seriously that shapes objectivity.

Practitioners need to recognise that failure, as suggest by the Chinese philosopher Lao Tzu, "is the foundation of success". In particular, information technology professionals need to recognise that causes of failure should not be perceived as stable, but an opportunity to try something entirely different and innovative to prevent it persisting in future projects, especially at the line and executive manager level.

Self-Esteem

The internal attributions for success and external attributions for failure evident in all job responsibility levels represent a self-serving attributional bias. Benefits of the self-serving attributional bias for information technology professionals include enhanced self-esteem during success and maintenance of self-worth during failure (Anderson & Weiner, 1992, p. 301; Duval & Silvia, 2002, p. 49). Enhanced self-esteem is capable of yielding improved individual initiative and pleasant feelings (Baumeister, Campbell, Krueger, & Vohs, 2003, p. 1) alongside improved health outcomes in individuals (Stinson et al., 2008, p. 413). The implications of the self-serving attributional bias on information technology professions involved in projects is therefore significant, and provides various positive benefits (e.g. boasting

recovery after project failures, favourable external perceptions) (Anderson & Weiner, 1992, p. 301).

In order to further boast self-esteem in individuals involved with projects, practitioners could seek to employ praise as a reward for further self improvement and desirable behaviour in their employees (Baumeister et al., 2003, p. 1). Indeed, the interviews, through the causal dimension of globality suggest that increased self-confidence was frequently linked to praise by peers during success. However, Baumeister, Campbell, Krueger & Vohs (2003) based on their extensive review of self-esteem literature suggest that efforts that seek to boost self esteem through other means such as therapeutic interventions and intervention programmes are typically futile (Baumeister et al., 2003, p. 1).

Organisational Learning

The self-serving attributional bias exhibited by all job responsibility levels suggests that individuals generally seek to attribute failure to external causes to maintain self worth (Anderson & Weiner, 1992, p. 301; Duval & Silvia, 2002, p. 49). However, the self-serving attributional bias through individuals failing to admit and acknowledge faults and errors can adversely impact learning. Over time, this can lead to organisations accepting poor performance due to individuals believing they cannot improve (Duval & Silvia, 2002, p. 49; Lyytinen & Robey, 1999, pp. 85, 97).

In order for organisations to mature, practitioners should seek to encourage, not punish, individuals admitting faults and acknowledging errors to create a climate of learning whilst seeking to preserve their self-worth (Lyytinen & Robey, 1999, p. 97). In addition to encouraging individuals to admit to faults and acknowledge errors, practitioners should also seek to provide mentoring and accurate feedback, even if unpleasant, to ensure learning occurs within a supportive organisational context (Cannon & Edmondson, 2001, p. 166). These antecedent conditions can provide various benefits such as making it easier to discuss mistakes in the future, direct problem resolution and enhanced conflict handling (Cannon & Edmondson, 2001, p. 166) as illustrated in Figure 19.

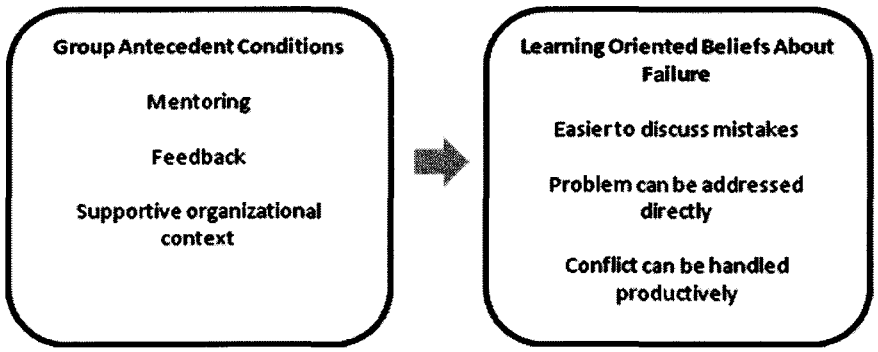

Figure 19: Conditions for learning (Based on Cannon & Edmondson, 2001, p. 169)

It must be noted however, accurate feedback has the potential to adversely impact motivation, persistence in problem solving and performance relative to individuals with an inaccurate positive self-perception due to a lack of feedback (Cannon & Edmondson, 2001, p. 166). As such, practitioners must seek to achieve a delicate balance between motivation and learning.

Knowledge Transfer

The ability to learn as an organisation through knowledge retention was frequently cited by interview participants as a key enabler to ensuring success persists as reflected through the causal dimension of stability. However, based on the interviews and focus groups it is apparent that whilst it is recognised as critical, the transfer of tacit knowledge is not trusted, effective or occurring. This could be due to numerous factors, including the project inputs (i.e. lessons not captured, team selected flawed), project governance processes (i.e. volatility in governance team, lack of role knowledge), operational project processes (i.e. inadequate knowledge integration, incomplete knowledge transfer, exit of team members, lack of knowledge map, loss between phases) and project outputs (i.e. failure to learn) (Reich, 2007, p. 10) as illustrated in Figure 20.

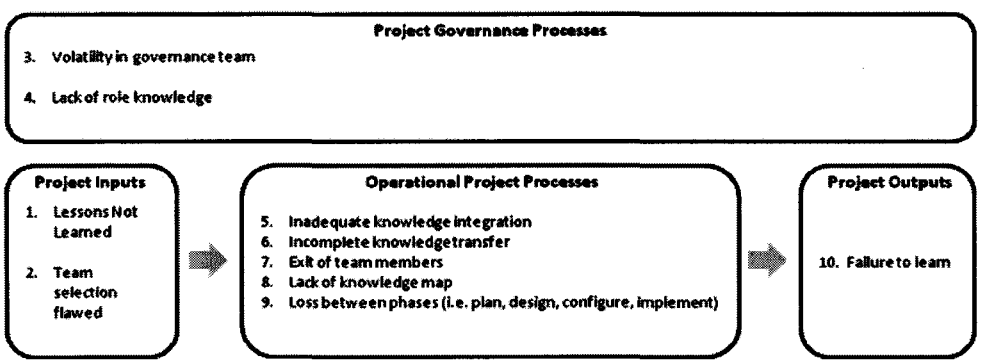

Figure 20: Knowledge based risks in IT projects (Reich, 2007, p. 10)

Based on research by Foos, Schum & Rothenberg (2006) a potential reason for this could be that the subject of tacit knowledge transfer, content

and process is poorly understand at all job responsibility levels (Foos et al., 2006, p. 16). Foos, Schum & Rothenberg (2006) finding that whilst managers saw the value of tacit knowledge, as in this research, executive managers focused on the long term benefits of tacit knowledge integration whilst project managers were more interested in tactical initiatives which deliver immediate results (Foos et al., 2006, p. 16). These tactical initiatives potentially not transferring the knowledge required to satisfy executive managers long term visions or extracting tacit knowledge required to maximise opportunities for future project successes.

Potential initiatives that practitioners can undertake to maximise the potential for tacit knowledge transfer include (Foos et al., 2006, p. 17):

- **Trust** – foster a climate of trust in projects where tacit knowledge is captured;
- **Clarify and Communicate** – clarify and communicate long terms goals of tacit knowledge management;
- **Resources** - dedicate resources to sustain tacit knowledge management initiatives;
- **Systems** – develop and integrate systems for tacit knowledge management in the project management process;
- **Measure** – develop tacit knowledge measures to ensure individuals gauge their progress; and
- **Review** – review performance of tacit knowledge measures.

The ability to realise these initiatives offers the potential to reduce pessimism in project participants who believe that failure is stable due to the inability to retain knowledge.

Cost Objectives

Meeting cost objectives is recognised as an important component of project success, and pivotal to the concept of the "iron triangle" in which the three critical factors of cost, time and quality represent the constraints of the project. Surprisingly, support workers failed to acknowledge cost objectives in their definitions for both project success and failure. This lack of awareness of cost objectives potentially concerning to practitioners as it suggests that support workers do not understand the financial constraints of the project or their requirement to ensure they are attained (Desmond, 2004, p. 41).

Based on the focus groups the primary reason for support workers failing to include cost objectives in their definitions for project success and failure is due support workers having no responsibility to meet cost objectives (e.g. allocated tasks and resources to achieve tasks). In contrast, line managers through activities such as resource planning, cost estimation and cost control (Duncan, 1996, p. 73) and executive managers through activities such as allocating resources to projects and prior project experience (e.g. projects running over budge) are more likely to be aware of their responsibilities to ensure cost objectives are achieved.

Whilst the focus groups suggest support workers have no requirement to meet cost objectives, practitioners may need to consider the implications of support workers not being aware of project cost objectives. Indeed, the world of business suggests that young people such as support workers need to be educated to "ensure that they have the kind of basic knowledge that helps them develop the financial values they need to serve them well in an ever-changing world" (Mead & Bowditch, 2004, p. 18). Based on this suggestion, practitioners may wish to consider educating support workers on the importance of cost objectives.

Potential benefits of educating support workers on cost objectives include:

- **Cost Savings** – potential for support workers to identify cost savings, especially if the project is severely cost constrained (e.g. more efficient practices that can reduce labour requirements and therefore cost). For instance, if they know its struggling to meet cost objectives and savings are required they may suggest some practical options visible at the operational level; and
- **Education** – support workers will have a better understanding of cost objectives that will become increasingly critical as they progress in a potential project management career.

The communication of cost objectives to support workers, whilst not perceived essential by line and executive managers, has the potential to enhance individual understanding and commitment to the project.

Strategic Involvement

Based on the research findings it is evident that strategic involvement appears limited to executive managers, particularly for projects that failed. The focus groups indicate that support workers and line managers, unlike executive managers, tend to focus on the processes and means associated

with the project, without being aware of the impact of project failure on the organisation (e.g. diminished revenue streams). This finding is in contrast to Hicks (2007) who suggests that individuals at all levels of the organisation need to be included in strategic dialogue (Hicks, 2007, p. 32). Inclusion of all job responsibility levels in strategic dialogue enables individuals to "deepen both their understanding of, and their commitment to the company's vision, leading to enhanced performance and success" (Hicks, 2007, p. 32). Indeed, Woodridge & Floyd (1990) found that the involvement of line managers in strategy processes improved organisational performance (Woodridge & Floyd, 1990, p. 231).

Based on this research, executive managers should seek to include all job responsibility levels in strategic dialogue. Failure to include all individuals in strategic dialogue has the potential to limit the scope of how individuals perceive and interpret project failure, whilst also limiting their commitment to the company's vision. For instance, if individuals understand the strategic importance of a project to an organisation, they may better understand the true consequences of project failure.

Pressures on Line Managers

Line managers serve a critical role in balancing tactical objectives with strategic vision (Jugdev & Muller, 2005, p. 20). For instance, trying to resolve shortfalls and find scarce resources (e.g. artificial intelligence experts) for a critical Internet project at the operational level whilst ensuring the project is delivered on schedule with the desired functionality to meet strategic marketing initiatives. This means line managers are typically under increased pressure from two directions – the operational level and strategic level.

Based on the focus groups, this role as the balancing point between support workers (operational focus) and executive managers (strategic focus) explains why line managers are potentially more pessimistic than both support workers and executive managers in attributing failure to causes they could control. This tendency to attribute failure to controllable causes may lead to feelings of guilt (Weiner, 1985, p. 563).

To minimise the feelings of guilt, which could potentially lead to stress in line managers due to the increased pressures felt by them, practitioners may wish to consider initiatives that include:

- **Coaching** – coaching has the potential to assist line managers in balancing operational objectives with strategic vision in a manner that is typically accepted by both employees and employers (Berriman, 2007, p. 29). Benefits of coaching include providing social support mechanisms, cognitive appraisal (helping them choose options which seek to best satisfy both tactical and strategic objectives) and goal orientation (providing positive feedback to help achieve mutually agreed goals) (Berriman, 2007, p. 28);
- **Contemplative Practices** – contemplative practices such as moving between cycles of action/reflection and balancing process with production have been demonstrated to reduce stress (Duerr, 2004, p. 43). Contemplative practices have the potential to enable line managers to reflect on actions instead of hastily making decisions which may later be recognised as poor (i.e. adverse strategic and/or operational consequences); and
- **Participative and Supportive Work Environment** – involvement of support workers where they assume many of the activities of the line manager. This has the potential to benefit both support workers (e.g. how they perceive their abilities) and the line manager (e.g. reduced workload and requirement to control everything) (Teratanavat & Kleiner, 2001, p. 71).

The adoption of initiatives such as these offer the potential to reduce the burden of failure on line managers, potentially when they have no real opportunity to control the project outcome.

Implications for Researchers

The research has several implications for researchers that are summarised in this section. These implications are based around pessimism, self-serving attributional biases and the work attributional style questionnaire.

Pessimism

Based on the research, several anecdotal attributional tendencies were identified which were consistent with Standing, Guilfoyle, Lin & Love (2006). However, due to the small sample size they were not included in the final results as they were tendencies that were not clear or definite. The anecdotal attributional tendencies were:

- **Internality** - Line and executive managers have the tendency to increasingly make more pessimistic attributions than support workers for the causal dimension of internality. The increase in the pessimistic attributional tendency is based increased pessimistic attributions for project failure (i.e. internal attributions) by line managers and increased pessimistic attributions for project success (i.e. external attributions) by executive managers;
- **Stability** - Support workers have the tendency to be more optimistic than line and executive managers whilst executive managers have a tendency to be more pessimistic than both; and
- **Controllability** - Line managers have the tendency to be more pessimistic than both support workers and executive managers due to their increased tendency to attribute failure to controllable causes.

Based on these attributional tendencies it is evident that line and executive managers are potentially more pessimistic relative to support workers than the initial research findings suggest. The variance on attributional style taking into consideration these anecdotal attributional tendencies is illustrated in Figure 21. There is an increased tendency for pessimism by line and executive managers alongside an increased tendency for optimism by support workers.

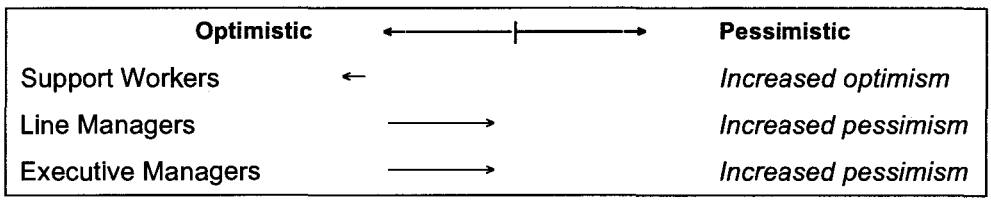

Figure 21: Attributional tendencies based on anecdotal tendencies

The research indicates that even by taking into consideration this evidence, all job responsibility levels still tend to exhibit an optimistic attributional style. However, the increased pessimism was potentially reflective of the fact that information technology projects are complex and likely to fail (Goldfinch, 2007, p. 925).

Self-Serving Attributional Biases

Based on research by Mezulis, Abramson, Hyde & Hankin (2004) the self serving attributional bias should be more evident in children and older adults. However, this research and prior research by Standing, Guilfoyle, Lin & Love (2006) suggest the inverse. For instance, executive managers

were more likely to attribute success to external causes than support workers.

The variation in the self-serving attributional bias between Mezulis, Abramson, Hyde & Hankin (2004) and this research is most likely due to the occupational environment of the research (e.g. information technology project domain). As a consequence, prior research in attributional style in a general domain may not necessarily transfer to specific domains, in particular information technology projects. This may make identification of age groups who may be more vulnerable to experiencing lower self-esteem (e.g. external attributions for success) more difficult for researchers.

Work Attributional Style Questionnaire

The research findings from this study using the WASQ tend to mirror prior research by Standing, Guilfoyle, Lin & Love (2006) using the OASQ. The only notable minor differences being:

- Executive managers tended to exhibit a pessimistic tendency for internality by attributing success marginally more to external causes (i.e. 60.5% internal and 65.9% external) in the research by Standing, Guilfoyle, Lin & Love (2006); and
- Attributional variation between line and executive managers apparent in the research by Standing, Guilfoyle, Lin & Love (2006) was not evident in this research. This variation potentially is due to their repeated application of ANOVA analysis (Standing et al., 2006, p. 1156).

Based on these findings researchers should be relatively confident in the WASQ compared to prior research by Ashforth & Fugate (2006). In addition, the collapsed causal dimensions of internality/controllability and stability/globality, like the standard WASQ, yielded an optimistic attributional style. The optimistic attributional style due to:

- **Internality/Controllability** – both the causal dimensions of internality and controllability exhibited similar attributional tendencies (i.e. optimistic). This finding supports Ashforth & Fugate (2006) who suggest that "people who internalise causes for events may be more likely to feel that they have control over those events" (Ashforth & Fugate, 2006, p. 24); and
- **Stability/Globality** – both the causal dimensions of stability and globality tended to exhibit similar attributional tendencies (i.e. divided,

with the exception of support workers who were optimistic for the globality causal dimension). This finding supports Ashforth & Fugate (2006) who suggest that "people who attribute events to causes that are enduring or recurrent (i.e. stable) may be more likely to perceive with the same causes are pervasive across a variety of situations (i.e. global)" (Ashforth & Fugate, 2006, p. 24).

This finding supports prior research by Ashforth & Fugate (2006) and Kent & Martinko (Kent & Martinko, 1995). The growing body of research is starting to support the results provided by these collapsed constructs and researchers need to start feeling increasingly confident about their application in research, especially when condensed questionnaires or rough attributional style results are required.

Future Research

This research provides various opportunities for future research. Several areas of future research identified are summarised below and revolve around the Work Attributional Style Questionnaire, differences in attributions, attributional style of individual's no longer involved in IT projects and personal success.

Work Attributional Style Questionnaire

The research suggests that the internality/controllability and stability/globality causal dimensions collapse into a single dimension which support Ashforth & Fugate (2006). However, the reasons for the attributions did not have significant overlaps (e.g. the reasons based on the interviews tended to be different).

Whilst the reasons did not have significant overlaps, the reasons appear as if they could be transferable. For instance, uncontrollable causes tended to be external (e.g. stakeholders, project managers, environment) whilst the controllable causes tended to be internal (e.g. delegation, skills provision, ability to influence). Likewise, the stable causes tended to be global (e.g. incapable project manager, inability to retain organisational knowledge) whilst the unstable causes tended to be specific (e.g. realisation of benefits, capable project manager). Based on the reasons identified in this research for these causal attributions (i.e. the themes from the interviews presented in Table 96 and Table 97), further research should be conducted to determine if these reasons are transferable. Understanding whether the

reasons are transferable will provide a deeper insight into why these causal dimensions tend to mirror each other.

Differences in Attributions

The research analysed the interviews to ascertain potential differences in attributions between job responsibility levels (e.g. capable project manager, personal ability to provide skills). Unfortunately, due to the limited sample size these reasons could not be used to accurately identify differences between job responsibility levels. The reasons collected in the research, presented earlier in Table 96 and Table 97 should therefore be further researched with a larger sample population with the aim of identifying differences between job responsibility levels. The differences identified through the research are potentially capable of providing a deeper insight into attributional style differences between job responsibility levels.

Attributional Style of Individuals No Longer in IT Projects

The research analysed individuals currently involved in information technology projects. Based on the focus groups it is evident that significant interest also exists for a comparison of individuals currently involved in information technology projects and those who have resigned (e.g. project managers who have transitioned into new careers such as teaching). The potential outcome of this research would be similar to Seligman & Schulman (1986) in which a pessimistic attributional style was linked to individuals who were more likely to resign (Seligman & Schulman, 1986, pp. 832-833).

Personal Success

The literature review suggests that project success may comprise of project management, product and personal success when aligned to the sequence of inferences made for an event outcome postulated by Abramson, Metalsky & Alloy (1989). Based on the interviews, there is some evidence to support this postulation. For instance, several interview participants felt project success encompassed emotions such as personal pride and joy. However, due to the extremely limited timeframe imposed on this research and the requirement to avoid scope creep, personal success was not explored in significant depth. Future research should therefore explore the concept of personal success in the information technology project domain.

This research could potentially be guided by attribution theory (e.g. internal attributions for success may be a critical element of personal success).

Concluding Remarks

Social psychology in which attribution theory is rooted has had a significant influence on information systems research. For instance, the theory of reasoned action by Ajzen & Fishbein (1980) has significantly influenced information systems research by forming the basis for the widely adopted Technology Acceptance Model (TAM) by Davis, Bagozzi & Warshaw (1989) which can routinely explain over 40 percent of variances in intent to use technology (Venkatesh et al., 2003, p. 425).

Based on this research it is evident that attribution theory also has the potential to make significant contributions to information systems research. For instance, it can be employed in a diversity of areas such as workforce planning to address issues such as identifying which information technology professionals are most likely to resign (e.g. Seligman & Schulman (1986)). This issue is increasingly important as organisations struggle to attract talent in a market characterised by high demand and decreasing supply of personnel (AGIMO, 2007, p. 2).

In the context of this research, the attributional style construct rooted in attribution theory suggests all information technology professionals involved in projects exhibit an optimistic attributional style. However, the research also indicates that line/executive managers are slightly more pessimistic than support workers due to their belief that the cause of failure was likely to persist in future projects. Reasons for this belief based primarily around factors that include the impact on their perceived professionalism in subsequent projects, inability to influence management and/or stakeholders, increased awareness of the strategic impact of failure on subsequent projects and the daunting complexity of increased social and technical challenges at the macro level.

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Appendix A: Ethics Approval

The Edith Cowan University Graduate Research School provided initial ethics clearance for the research on the 22nd May 2007 as presented in Figure 22.

22nd May 2007

Mr Eric Kordt

[redacted]

Dear Mr Kordt,

It is with pleasure that I write on behalf of the Faculty of Business & Public Management, Higher Degrees Committee who have approved your professional doctorate research proposal – ***The Attribution of Success and Failure in Information Technology Projects***.

I also wish to confirm that your proposal complies with the provisions contained in the University's policy for the conduct of ethical research, and your application for ethics clearance has been approved. Your ethics approval number is 07-51 and the period of approval:

1 May 2007 to 1 December 2007.

You may now commence data collection.

Approval is given for your supervisory team to consist of:

Principal Supervisor Prof Craig Standing

Please note: the Research Students and Scholarship Committee has resolved to restrict professional doctoral theses to a maximum of 60,000 words with a provision that under special circumstances a candidate may seek approval from the Faculty Research and Higher Degrees Committee for an extension to the word length.

The examination requirements on completion are laid down in *Part VI of The University (Admissions, Enrolment and Academic progress) Rules for Courses Requiring the Submission of Theses* available at: http://www.ecu.edu.au/GPPS/legislation/rules.php

Additional information and documentation relating to the examination process can be found at the graduate school web site: http://www.ecu.edu.au/GraduateSchool/gsmain.html

Yours sincerely

Karen Leckie

Manager

Graduate Research School

Figure 22: Initial ethics approval

In addition to the initial ethics approval, an extension was granted for data collection on the 5th January 2008 as presented in Figure 23.

5th January 2008

Mr Eric Kordt
Unit 26
17-19 Oxley Street
GRIFFITH ACT 2603

Dear Eric,

Project Code	**07-051 KORDT**
Project Title	**The Attribution of Success and Failure in Information Technology Projects**
Chief Investigator	**Mr Eric Kordt**
Ethics Approval Dates	**FROM: 1 May 2007 TO: 1 July 2008**

Student Number: 10026782

Thank you for the Ethics Report Form and your recent request for an extension on the above application.

I am happy to inform you that an extension for the above project to the 1 July 2008 has been approved and noted by the Human Research Ethics Committee.

Please continue to keep us informed of any changes.

With best wishes for success in your work.

Yours sincerely

Kim Gifkins
Research Ethics Officer
Graduate Research School

Figure 23: Extension to ethics clearance

The data collection for the research was successfully completed by the 1st July 2008 with the final research report submitted on the 10th July 2008 to the Edith Cowan University Graduate Research School.

Appendix A: Ethics Approval

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Graduate Research School

Figure 23: Extension to ethics clearance

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Appendix B: Information Letter to Participants

The nature and objectives of the research were provided to all research participants. An example information letter to participants is presented in Figure 24.

Information Letter to Participants

The Impact of Information Technology Project Success And Failure on Attributional Style

Dear Joe,

Academics and practitioners frequently cite project failure as the primary challenge facing the Information Technology profession. In order to understand the social impact of project failure I am writing to ask for your participation in a research project being undertaken by myself as part of the requirements for a Doctorate of Business Administration (Information Systems) at Edith Cowan University. The research is being conducted under the supervision of Professor Craig Standing, Faculty of Business and Law, Edith Cowan University.

Description of Research

The aim of the research is to ascertain the impact of project success and failure on individuals involved in Information Technology projects at varying levels of responsibility. For instance, project failure may have a more significant adverse impact on support worker job satisfaction and productivity than executive management. As such, participants for this research were selected on their level of responsibility in Information Technology projects and their background in Information Technology.

During the course of the research, there will be several key stages. These stages are:

Interview – will focus on personal experiences in dealing with various factors contributing to project success and failure (i.e. system requirements, project planning, executive management support, client involvement and realistic expectations); and

Focus Group – will focus on a group discussion of research findings from the interviews.

In the course of the research, you will be asked to participate in one interview and focus group. It is expected that the interview will last approximately one hour and the focus group will last approximately one and a half hours. Neither the interview nor the focus group will involve any tasks that will expose you to physical discomfort or inconvenience.

Participation in the research will not only contribute to the body of knowledge on project management, but may also provide you an opportunity to better understand how Information Technology project success and failure impacts you at a personal level.

Audio Recording Equipment

The research will involve data collection using audio recording equipment. During the interview you will be provided the option to participate without audio recording equipment being present (e.g. the conversation will be transcribed during the interview). The focus group will be recorded using audio recording equipment with no option to participate without audio recording equipment.

Confidentiality of Information

The information that you provide during the interview and focus group will be used to determine the impact of project success and failure on individuals at different levels of seniority. During the course of the research information collected will be kept confidential and anonymous and be solely used for the

purpose of this research. This will be achieved by:

Access Controls – access to the original interview and focus group transcripts and audio recordings will be limited to the researcher (Mr. Eric Kordt) and the supervisor (Prof. Craig Standing). Transcription of the audio recordings will be performed by the researcher (Mr. Eric Kordt);

Removal of Details Which May Identify Participants – details which may compromise your confidentially and privacy will be removed from the research findings during the transcription process (e.g. within five days after the interview or focus group has been conducted);

Secure Data Storage – interview and focus group transcripts will be securely stored in a locked and secure physical location. All transcripts will be encrypted with AES128 encryption and protected by physical and logical access control mechanisms on a secure system. The audio recordings will be locked and secured in a physical location until they are transcribed. Transcription will occur within 5 days of the interview being recorded; and

Media Destruction – all audio recordings will be destroyed following transcription (e.g. after details which may identify participants have been removed). The destruction process will involve rewinding the tape and recording 'garbage' for the duration of the tape. Destruction will be verified once this process is complete. Where the participant has elected to have the interview transcribed on paper during the interview it will be re-transcribed to remove details that may identify the participant and the original shredded. Interview and focus group transcripts will be retained for five years to ensure sufficient time is available for claims made in the research to be verified. During this period they will be securely stored at Edith Cowan University in a safe with access limited to Prof. Craig Standing and Mr. Eric Kordt. At the expiration of this period they will be destroyed.

Whilst all efforts will be made, confidentially cannot be assured in the focus group due to other participants being in attendance (e.g. everyone hears what you say). Additionally there are legal limits to confidentially (e.g. I am required under Australian law to report an instance to the relevant authorities where you confess to murdering an employee on a failed Information Technology project).

Results of the Research

The results of this research will be disseminated in a doctoral dissertation and in future papers, journal articles and conferences that will be written by the researcher. The results which may include quotations obtained in the interviews and focus group will not include any information that may compromise your confidentially and privacy. At the completion of the interview phase I will provide you confidential feedback regarding how project success and failure impacts you. Additionally I will provide preliminary research results from the interviews at the focus group.

Voluntary Participation and Withdrawing Consent to Participate

Participation in this research is voluntary. You are free to withdraw at any stage during the research without prejudice. Withdrawal prior to the focus group will enable you to:

Withdraw the audio recording from your interview (if conducted); and

Withdraw the transcript from your interview where possible (e.g. may not be possible due to the identity of participants having being removed in the transcription process).

If you withdraw during or after the focus group the researcher cannot withdraw your interview transcript as it may form the basis of the focus group discussion or research findings.

Independent Contact Person

The research has been reviewed and approved by the Human Research Ethics Committee at Edith Cowan University. If you have any concerns or complaints about the research project and wish to talk to an independent person, you may contact:

Research Ethics Officer
Edith Cowan University
100 Joondalup Drive
JOONDALUP WA 6027

du.au

Researchers

The research is being conducted by:

Mr. Eric Kordt	Prof. Craig Standing
Research Student	Research Supervisor
School of Management	School of Management
Faculty of Business and Law	Faculty of Business and Law
Edith Cowan University	Edith Cowan University

Participation and/or Further Information

If you wish to participate in this research please sign the enclosed Informed Consent Document and return it in the enclosed self-addressed envelope. If you have any questions or require further information about the research, please contact the undersigned.

Kind Regards,

Mr. Eric Kordt
Postgraduate Research Student
School of Management
Faculty of Business and Law
Edith Cowan University

Figure 24: Example information letter to participants

The information letter to participants underwent several revisions prior to being sent to interview participants. The revisions were primarily around legal advice provided by the Edith Cowan University Graduate Research School.

Appendix C: Informed Consent

The informed consent of participants was obtained prior to the commencement of interviews and focus groups. An example informed consent form is presented in Figure 25.

Informed Consent

The Impact of Information Technology Project Success and Failure On Attributional Style

I, (print name in full) *Joe Bloggs* agree to volunteer for the research project entitled The Impact of Information Technology Project Success and Failure on Attributional Style which aims to ascertain the personal impact of project success and failure on individuals involved in Information Technology projects at varying levels of responsibility.

I understand that the research is being conducted by:

Mr. Eric Kordt	Prof. Craig Standing
Research Student	Research Supervisor
Faculty of Business and Law	Faculty of Business and Law
Edith Cowan University	Edith Cowan University

In agreeing to participate in this research I acknowledge that I have been provided a copy of the information letter explaining the research project. I have read and understood the information contained in the information letter and have been provided the opportunity to ask questions. Where I have asked questions I have been provided satisfactory answers. In the event I have any additional questions I understand that I can contact either Mr. Eric Kordt (Research Student) or Prof. Craig Standing (Research Supervisor).

I acknowledge that participation in the project will involve participation in a:

Interview (approximately one hour in duration) where I will be asked questions in relation to my experience dealing with various factors contributing to project success and failure (i.e. system requirements, project planning, executive management support, client involvement and realistic expectations); and

Focus Group (approximately one and a half hours in duration) where I will be asked to contribute to discussions relating to research findings from the interviews.

I understand that the information I provide will be kept confidential, and that my identity will not be disclosed without consent. I understand that my full name and other identifying information will never be disclosed or referenced in any way in any written or verbal context. I understand that the interview and focus group will be recorded with audio recording equipment. In the instance of the interview I understand that I can elect not to have audio recording equipment record our conversation. I understand that transcripts will be secured and that any audio recordings of my conversations with the researcher will be transcribed and erased within five days of being recorded.

I understand that information provided by me will only be used for the purposes of this research project and will be studied by the researcher for use in a doctoral dissertation and in future papers, journal articles and conferences. I understand that my participation is voluntary and that I may withdraw from further participation at any time, without explanation or penalty.

Joe Bloggs	*10 / 11 /2007*
Participant Signature	Date

Figure 25: Example informed consent form for participants

Appendix D: Interview Schedule

Research participants were interviewed based on a semi-structured interview derived from the Work Attributional Style Questionnaire presented in Figure 26.

Interview Schedule

The Impact of Information Technology Project Success and Failure On Attributional Style

The purpose of this research is to understand the social context in which Information Technology projects are situated by examining how individuals explain the success and failure of projects. The ability to understand these individual differences will contribute to our understanding of project management and the most frequently cited challenge facing the Information Technology profession – project failure.

Do you have an objection to your interview being recorded?

Before we commence the interview, do you have any questions?

Demographic Information

Prior to the commencement of the interview the following demographic Information is required:

a. Gender [Male | Female]

b. Age [18 – 20] [20 – 29] [30 – 39] [40 – 49] [50 – 59] [60 – 65] [65+]

c. Occupation

d. Duration of current employment (Years)

e. Duration of total employment in Information Technology (Years)

f. Highest tertiary qualifications (e.g. Degrees, TAFE, OJT, Industry)

Project Success

The purpose of this section is to examine an Information Technology project that you have been involved in and would consider your biggest success.

a. How would you define project success?

Thinking about a completed IT project you have been involved in with the organisation, and would consider your biggest success.

b. What would you consider the main cause for the projects success? [Cause]

c. How would you define [cause]? [Cause]

d. Was the [cause] due to something about you, or due to something about other people or circumstances? Why? [Internality]

e. In the future did you believe [cause] would influence what happened to projects you were involved in? Why? [Stability]

f. Was the [cause] something that just influenced your involvement in this project, or did it influence other areas of your life? Why? [Globality]

g. Was this [cause] something over which you had control? Why? [Controllability]

Project Failure

The purpose of this section is to examine an Information Technology project that you have been involved in and would consider a failure.

a. How would you define project failure?

Thinking about a completed IT project you have been involved in, and would consider your biggest failure.

b. What would you consider the main cause for the projects failure? [Cause]

c. How would you define [cause]? [Cause

d. Is the [cause] due to something about you, or due to something about other people or circumstances? Why? [Internality]

e. In the future did you believe [cause] would influence what happened to projects you were involved in? Why? [Stability]

f. Was the [cause] something that just influenced your involvement in this project, or did it influence other areas of your life? Why? [Globality]

g. Was this [cause] something over which you had control? Why? [Controllability]

Feedback

That concludes the interview. The next stage in my research will be to transcribe your interview and provide you initial feedback on your attributional style. Once all interviews are completed, I will advise you when a focus group will be conducted. At this stage, do you have any questions?

Figure 26: Interview schedule

The "why" part of the questions was asked using a mirroring technique (i.e. words and phrases taken from the initial participant response and constructing a question in their language). Additional questions were posed to examine emergent themes with research participants where warranted.

Appendix E: Analysis Matrices

Interview results were initially analysed based on the researcher's knowledge and literature (e.g. WASQ dimensions, components of project success, process and people related causes). Once the literature had been analysed and significant themes identified, the literature was re-analysed against the evolved matrices to ensure consistency. The matrices for the causal dimensions are categorised based on a primary reason (i.e. internal or external), and then a secondary reason for the attribution identified in the response (e.g. my ability to provide skills, the project managers ability).

Outcome

The definition for project success and failure was initially categorised against the objectives identified in the literature review. In this thesis a subset of the results based on personal success and meeting cost objectives as presented in Table 106 was used.

Table 106: Coding matrix for the project success

Objective		Reasons
Objectives	Meeting cost objectives	Within cost On budget Finance
Personal Success	Individual objectives achieved	Happiness Pride Joy Self-worth Personal ability Potential individual opportunities

The outcome for project failure was based on the inverse of the project success components (e.g. not meeting time, unhappy).

Causes

The causes for project success and failure were assessed against the people and process related causes for project success postulated by Kappelman, McKeeman & Zhang (2006).

Table 107: Causes for project success (Based on Kappelman et al., 2006, p. 34)

Cause	
Process	Documented requirements Schedule planning and/or management Change control processes Governance Communication breakdown among stakeholders
People	Effective project manager Executive management support Stakeholder involvement Teamwork Teams have requisite skills

The causes for project failure were based on the inverse of the causes for project success (e.g. lack of documented requirements).

Internality

The coding matrix for internality is presented in Table 108.

Table 108: Coding matrix for internality

Primary Reason		Secondary Reasons	
Internal	Due to me Yes due to me	Success	Individual Influence Ability to influence others Individual Skills Ability to provide skills
		Failure	Individual Influence Inability to influence others Individual Skills Inability to provide skills
External	Due to other people Due to circumstances No due to others	Success	Project Management Ability of project manager Project Stakeholders Ability to influence project Project Team Ability to contribute Organisational Commitment Ability to provide support/resource
		Failure	Project Management Ability of project manager Project Stakeholders Ability to influence project Project Team Ability to contribute Organisational Commitment Ability to provide support/resource

The interviews indicated that participants tended to associate "yes" with internal causes and "no" with external causes.

Stability

The coding matrix for stability is presented in Table 109.

Table 109: Coding matrix for stability

Primary Reason		Secondary Reasons	
Stable	Will always be present Always happens Never goes away Yes it will happen again	Success	Individual influence Ability to influence stakeholders Ability to influence management Project Management Ability of project manager Organisational Commitment Ability to obtain support/resources Organisational Environment Ability to complete projects Stable environment Organisational Knowledge Ability to retain knowledge
		Failure	Individual influence Inability to influence stakeholders Inability to influence management Project Management Inability of project manager Organisational Commitment Inability obtain support/resources Organisational Environment Inability to complete projects Unstable environment Organisational Knowledge Inability to retain knowledge
Unstable	Never again be present Never happen again One off occurrence No it will not happen again	Success	Individual influence Inability to influence stakeholders Organisational Environment Unstable organisational environment Organisational Knowledge Inability to retain knowledge
		Failure	Individual influence Ability to influence stakeholders Organisational Environment Stable organisational environment Organisational Knowledge Ability to retain knowledge

The interviews indicated that participants tended to associate "yes" with stable causes and "no" with unstable causes.

Globality

The coding matrix for stability is presented in Table 110.

Table 110: Coding matrix for globality

Primary Reason		Secondary Reasons	
Global	Influences all situations of my work life Yes affects other areas	Success	Individual Confidence Improved confidence Individual Skills Ability to develop Project Team Improved morale
		Failure	Individual Confidence Lose of confidence Individual Influence Inability to influence management Individual Skills Adverse impact on professionalism Organisational Environment Negative environment
Specific	Influences just this particular work situation No it only influences this	Failure	Individual Influence Inability to influence management Organisational Environment Realisation of benefits

The interviews indicated that participants tended to associate "yes" with global causes and "no" with specific causes.

Controllability

The coding matrix for stability is presented in Table 111.

Table 111: Coding matrix for controllability

Primary Reason		Secondary Reasons	
Controllable	Totally under my control Controllable	Success	Individual Influence Ability to influence stakeholders Ability to influence management Individual Skills Ability to provide skills Project Management Ability to delegate Ability to motivate
		Failure	Individual Influence Ability to influence management Ability to influence stakeholders Project Management Ability to delegate

Primary Reason		Secondary Reasons	
Uncontrollable	Totally outside my control Uncontrollable	Success	Individual Influence Inability to influence management
		Failure	Individual Influence Inability to influence management Inability to influence stakeholders Organisational Commitment Insufficient resources

The interviews indicated that participants tended to associate "yes" with controllable causes and "no" with uncontrollable causes.

Appendix F: Interview Feedback

Interview feedback was presented to participants alongside their interview transcript. The interview feedback offered the participants an opportunity for self-reflection and insight into what the final research findings may mean to them and also encouraged them to potentially consider change in the workplace. An example interview feedback form is presented in Figure 25.

Interview Feedback

The Impact of Information Technology Project Success and Failure On Attributional Style

Dear *Joe Bloggs*,

I would like this opportunity to express my heartfelt thanks to you for your very active participation in our recent research interview on *The Impact of Information Technology Project Success and Failure on Attributional Style*.

Attributional Style

The aim of the research interview was to ascertain the impact of Information Technology (IT) project success and failure on individuals at varying levels of responsibility (i.e. support worker, line manager and executive management). To achieve this, the attributional style construct rooted in the field of psychology was used to examine how different individuals explain IT project success and failure. The attributional style construct based on the premise that a cause (e.g. Lack of Executive Support) leads to a specific outcome (i.e. Project success or failure) will vary between individuals (Abramson, Seligman et al. 1978; Furnham, Brewin et al. 1994).

Four dimensions seek to characterise attributional style (Higgins and Hay 2003):

Internality – whether the outcome was due to dispositional (internal) or situational (external) causes;

Stability – whether the cause will be present (stable) or is temporary (unstable);

Globality – whether the cause will influence just this particular situation (specific) or whether it transfers to other areas of the individual's life (global); and

Controllability – whether the cause could be influenced (controllable) or not influenced (uncontrollable).

The combination of these four dimensions characterise an individual with a certain attributional style (i.e. optimistic or pessimistic). For instance, individuals who exhibit a pessimistic attributional style are characterised through these dimensions as having a tendency to explain failure with internal, stable, global and controllable causes and to explain successes with external, unstable, specific and uncontrollable causes (Abramson, Seligman et al. 1978; Furnham, Brewin et al. 1994; Standing, Guilfoyle et al. 2006). Conversely, an individual exhibiting an optimistic attributional style is characterised as having a tendency to explain failure with external, unstable, specific and uncontrollable causes and to explain successes with internal, stable, global and controllable causes (Abramson, Seligman et al. 1978; Furnham, Brewin et al. 1994; Standing, Guilfoyle et al. 2006). Individuals are capable of exhibiting both attributional styles in different aspects of life due to varying responses to different negative events (Furnham, Brewin et al. 1994).

Interview Analysis

Based on an analysis of your interview it has been determined you exhibit an

overall attributional style of **Optimistic**, based on a **Optimistic** attributional style for failed projects and an **Optimistic** attributional style for successful projects in your job responsibility level of **Support Worker**. The determination of your attributional style is based on the categorisation of responses provided during the interview into each of the four dimensions (i.e. internality, stability, globality and controllability) as illustrated in Table 1.

Dimension	Project Failure		Project Success	
Internality	External	Internal	Internal	External
Stability	Unstable	Stable	Stable	Unstable
Globality	Specific	Global	Global	Specific
Controllability	Uncontrollable	Controllable	Controllable	Uncontrollable
Attributional Style	Optimistic	Pessimistic	Optimistic	Pessimistic

Table 1: Attributional Style Dimensions for IT Project Success and Failure based on an analysis of your Interview

At this point in time interviews are still progressing. Once these interviews have been completed I will send out a preliminary report outlining the research findings and their significance. The report will outline any themes that may have emerged during the interview process and any significant or interesting points that may have been raised by yourself and other participants.

Further Information

Should you require further information on this research on the findings, please don't hesitate to contact the undersigned.

Kind Regards,

Mr. Eric Kordt Postgraduate Research Student
School of Management
Faculty of Business and Law
Edith Cowan University

References

Abramson, L. Y., M. E. P. Seligman, et al. (1978). "Learned Helplessness in Humans: Critique and Reformulation." Journal of Abnormal Psychology87: pg. 32 - 48.

Furnham, A., C. R. Brewin, et al. (1994). "Cognitive Style and Attitudes to Work." Human Relations 47(12): pg. 1509 - 1521.

Higgins, N. C. and J. L. Hay (2003). "Attributional Style Predicts Causes of Negative Life Events on the Attributional Style Questionnaire." The Journal of Social Psychology 143(2): pg. 253 - 271.

Standing, C., A. Guilfoyle, et al. (2006). "The Attribution of Success and Failure in IT Projects." Industrial Management and Data Systems 106(8): pg. 1148-1165.

Figure 27: Example interview feedback for participants form

Based on discussions and email the interview feedback was well received by participants.

Appendix G: Focus Group Schedule

Focus groups were conducted based on the analysis of the interview findings. Prior to the conduct of the focus groups participants were provided a copy of the interview findings alongside potential questions that could be explored. A sample focus group schedule is presented in Figure 28.

Focus Group Schedule

The Impact of Information Technology Project Success and Failure On Attributional Style

The purpose of this focus group is to examine the results obtained from interviews conducted to examine how individuals explain the success and failure of projects. The ability to understand these individual differences will contribute to our understanding of project management and the most frequently cited challenge facing the Information Technology profession – project failure.

Potential Discussion Questions

a. Why would support workers not consider cost objectives for project success and failure whilst line and executive managers did?

b. Why would the definition of project failure tend to transition from project management failure for support workers to a combination of project management and product failure for line and executive managers?

c. Why was there an increased emphasis on people related causes for project success and failure as the level of responsibility increased?

d. Why would executive managers be more likely to attribute project success to external causes than support workers?

e. Why would line managers and executive managers be more likely to attribute project failure to stable causes than support workers?

f. Why would line managers and executive managers be more likely to attribute project failure to global causes than support workers?

g. Why would line managers be more likely to attribute failure to controllable causes than executive managers and support workers?

h. Why would all job responsibility levels exhibit an optimistic instead of a pessimistic attributional style?

i. Why would the degree of optimism decrease as the job responsibility level increased?

Feedback

That concludes the focus group. The next stage in my research will be to transcribe the findings from the focus group. Once all focus groups are completed I will send you a copy of the completed focus group. At this stage, does anyone have any questions?

Figure 28: Focus group schedule

The focus group schedule evolved during the conduct of the research and enabled new themes to be dynamically explored if they emerged during the conduct of the focus groups.

Appendix H: Independent Review (Interviews)

The interview transcripts were sanitised (e.g. all demographic information removed, personal details, names, organisational units) and provided to an independent and qualified researcher for peer review. The independent reviewer was tasked with independently classifying the causal dimensions for each interview (e.g. internal or external, stable or unstable). Key findings from the independent interview review are presented in Figure 29.

Support Workers
SW6 – Failure – Global - agreed with research but noted link was weak
SW7 – Success - External – agreed with research but noted link was weak
SW8 – Failure - Uncontrollable – agreed with research but noted link was weak
SW8 – Success – Stable - agreed with research but noted link was weak
SW9 – Success – Controllable - agreed with research but noted link was weak
SW10 – Success – Stable – agreed with research but noted link was weak
SW10 – Success – Global – agreed with research but noted link was weak

Line Managers
LM4 – Failure – Specific - agreed with research but noted link was weak
LM5 – Success – Stable - agreed with research but noted link was weak
LM6 – Failure – Unstable – different to researchers interpretation
LM8 – Failure – Global - agreed with research but noted link was weak
LM10 – Failure – Stable - agreed with research but noted link was weak

Executive Managers
EM1 – Failure – Global - agreed with research but noted link was weak
EM5 – Failure – Specific – different to researchers interpretation
EM6 – Failure – Stable - agreed with research but noted link was weak
EM6 – Success – Unstable - different to researchers interpretation
EM9 – Failure – Specific - different to researchers interpretation

Figure 29: Independent interview review key findings

Based on the initial independent review findings it was apparent that both the reviewer and researcher agreed with approximately 98% of the categorisations (i.e. 236 out of 240). The researcher subsequently discussed the four points of difference with the reviewer and it was mutually agreed that the interpretations made by the researcher were equally valid.