Training-Related Motivation and Transfer Outcomes: The Role of Proactive Transfer Behaviour and Positive Psychological States

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“Knowing is not enough; we must apply. Willing is not enough; we must do.”

Johann Wolfgang von Goethe
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For training to be effective it must be applied on the job. However, transfer of training to the workplace is regularly not sufficiently realised. As a result, individuals and organisations may not reach their performance potential, and this also questions the rationale for investing costly resources into professional development activities.

Training transfer is a function of a system of influences, of which research identified only a few as consistent predictors. Most of these act through the person being trained. The present research seeks to understand why some people are more likely to transfer training than others by investigating individual-level factors that can influence whether what gets learned in training is applied at work.

This doctoral thesis is anchored in a goal regulatory framework and examines the influence of three inter-related psychological processes on the transfer of training. Specifically, it is argued that (1) positive cognitive states relating to work determine (2) transfer motivation, which in turn influences (3) proactive transfer behaviour, and training transfer.

To begin, the thesis first proposes a refined multi-stage, multi-dimensional conceptualisation of training-related motivation. It is argued that the training-related motivation takes different forms at different stages in the training process (participation motivation, learning motivation, and transfer motivation) and each of these forms of motivation contain dimensions of can-do, reason-to, and energised-to psychological states which shape goal setting and striving. Study 1 seeks to operationalise these training-related motivational constructs using heterogeneous trainee cohorts (N = 368). An independent sample (N = 353) established support for the internal consistency, multi-dimensionality, and construct validity for the
parsimonious set of measures. Longitudinal findings suggest sequential interrelationships between participation, learning and transfer motivation.

The thesis then proposes a model whereby crucial transfer motivation mediates the effect of positive cognitive states on proactive transfer behaviours and training transfer. The concept of proactive transfer behaviour is introduced to the literature as new competencies trained require a person to self-initiate change in the environment and create opportunities for oneself, as opposed to transfer being explicitly requested or thought to just happen. Also, by understanding training as integral episode of the work experience it is argued that the transfer of training is a function of individuals’ positive psychological states as they relate to work. Namely, hope, optimism, resilience, and self-efficacy collectively represent an individual’s core confidence and transfer motivation is proposed to mediate the effect of core confidence on proactive transfer behaviours and training transfer.

Study 2 (N = 949) finds that positive cognitive states at work (core confidence) relate to transfer motivation, proactive transfer behaviours, and training transfer. Results also support the conclusion that proactive transfer behaviours are relevant for realising the transfer of training, and that they need to be motivated as the influence of a proactive personality is small. Study 3 (N = 365) confirms these findings via a more robust longitudinal research design.

The research is discussed in light of methodological strengths and limitations as well as theoretical and practical implications and directions. Overall, this thesis enriches psychological perspectives on training transfer for further research and practice. It provides new constructs and measures of training-related motivation; and suggests core confidence and proactive transfer behaviour as fruitful factors that may be managed to improve training transfer.
Keywords

confidence; goals; hope; learning; measures; motivation; optimism; positive psychology; proactivity; professional development; resilience; self-efficacy; self-regulation; training transfer
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Statement of Original Authorship

The work contained in this thesis has not been previously submitted to meet requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Signature:

Date: 28 NOV 2013
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INTRODUCTION

It is commonly asserted that training and development activities engaged in by work organisations generate considerable benefits for individuals, teams, organisations, and societies (Aguinis & Kraiger, 2009; Cedefop, 2011). However, evidence on the degree to which such benefits are realised, particularly within organisations, is surprisingly mixed (Alliger, Tannenbaum, Bennett Jr., Traver, & Shotland, 1997; Colquitt, LePine, & Noe, 2000; Tharenou, Saks, & Moore, 2007). Thus, it comes as no surprise that Kozlowski and Salas (2009) – both distinguished scholars in the field of learning and training – have argued that researchers need to determine why, when, and for whom training is effective.

Training effectiveness is more than just a function of learning during a formal training experience. For training to be truly effective it must be applied on the job or ‘transferred’ to the workplace (Baldwin, Ford, & Blume, 2009). However, training transfer “does not just happen” (Subedi, 2004) and
the failure to achieve effective transfer has implications for individuals, organisations, and societies alike.

People today must deal with the demands of constant change arising from rapid rates of scientific, technological, social, and economic development. These demands affect private as well as professional lives, in which continuous adaptation and learning have become key virtues for survival and well-being (e.g. Porath, Spreitzer, Gibson, & Garnett, 2011; Solomon, 1999). In this world of lifelong learning (London, 2012), systematic training helps equip citizens with the knowledge, skills, and attitudes they need to cope with such demands (Eraut & Hirsh, 2007).

Training activities are also important for economic stability and growth. In Europe, 70% of those attending a recent summit of business leaders felt that increased investment in education and skills development was the appropriate response in times of economic crisis (Accenture, 2012). However, with regards to a country’s competitiveness and prosperity, it is also recognised that “the causal link between higher level skills and increased productivity is not simply about the acquisition of skills but more broadly about both skills acquisition and their subsequent deployment” (DTWD, 2010, p. 155).

For organisations, workforce training is increasingly seen as a source of competitive advantage as they “have shifted their views about employee development from a separate, stand-alone affair to a fully integrated, strategic component of the organization” (Salas & Cannon-Bowers, 2001, p. 472; see also Pfeffer, 1998). By the same token, firms are paying more attention to the returns they receive from their investments in human capital, seeking to maximise the value that is added by human resource activities (J. G. Combs, Liu, Hall, & Ketchen, 2006; Huselid & Becker, 1997). This includes costly training and development activities (De Grip & Sauermann, 2012; Mayo, 2000), as investigations have shown that the economic utility of corporate-wide training can vary significantly (Morrow, Jarrett, & Rupinski, 1997).

In the USA it is estimated that employers spent about $171.5 billion on employee learning and development in 2010, with an estimated average
investment per employee of $1,228, or 2.27% direct expenditure of the payroll (ASTD, 2011). In the United Kingdom, total employer expenditure on work-related training is estimated to have been £49bn in 2011 (Vivian, Mark, Jan, & Davies, 2011). Figures from the UK further show that, on average, an employee devoted nine full working days annually to training, most of which (84%) was job-specific.

Given the magnitude of these investments of time and resources, it is clearly important that work-related training results in beneficial outcomes within the workplace. Unfortunately, the available evidence suggests that much of what is learned through structured training fails to have an impact on how people subsequently perform their jobs. Although the claim that trainees use only as little as 10% of their trained skills at work (Georgenson, 1982) should be considered “a cautionary tale” (Ford, Yelon, & Billington, 2011), concerns continue to be expressed about the extent to which training interventions generally fall short of providing the benefits for which they were designed (Cromwell & Kolb, 2004; Grossman & Salas, 2011). This shortfall is commonly attributed to a failure of learned knowledge, skills and abilities to transfer from the training environment back onto the job, and is termed the ‘training transfer’ problem or challenge. In the context of the strategic and economic significance that is placed on training by society, and the large investments of time, money and energy in training activities made by both employers and employees, failures in the transfer of training are an important concern for practitioners and researchers alike.

This concern has led researchers to seek to identify factors that can influence the effective application of knowledge, skills and abilities acquired through training and development activities, thereby improving work performance (Alliger et al., 1997; Burke & Hutchins, 2008; Ford & Weissbein, 1997; Kozlowski & Salas, 2009; Salas & Cannon-Bowers, 2001). Although the literature on training effectiveness has proliferated since Baldwin and Ford’s (1988) seminal paper on the transfer of training, a recent meta-analysis revealed that only a few of those factors that have been identified as potentially influencing training transfer have proved to be consistent predictors (Blume, Ford, Baldwin, & Huang, 2010). This conclusion was
echoed recently by Grossman & Salas (2011, p. 4) who suggested that “conclusions regarding the key components of transfer remain somewhat ambivalent”.

1.1 Purpose and Outline of this Research

This doctoral thesis seeks to examine the influence of three inter-related psychological processes on the transfer of training. Specifically, it will be argued that (1) positive cognitive states relating to work determine (2) facets of transfer motivation, which in turn influence (3) the proactive transfer behaviours, all of which directly or indirectly affect training transfer. The thesis is organised as follows.

Chapter 2 presents an overview of the literature on the transfer of training, including key conceptual models and empirical studies. From this review, motivational processes are identified as a key factor underpinning training effectiveness. Particular emphasis is then given to a number of concerns with existing approaches of motivation as it relates to training.

Chapter 3 reviews the concept of human motivation in relation to goal regulatory theory. Ultimately, a refined conceptualisation of training-related motivation is proposed that comprises the three interrelated stages participation motivation, learning motivation, and transfer motivation; each of which is based on the three psychological processes labelled as can-do motivation, reason-to motivation, and energised-to motivation.

Chapter 4 reviews the literature on proactivity and applies it to the training transfer phenomenon. Although individuals are often required to exercise personal initiative and be proactive in order to bring about changes to their work following training, such self-directed training transfer has not been the subject of prior research. The concept of proactive transfer behaviour is introduced as a means of explaining how transfer motivation might convert into actual training transfer via self-initiation.

Chapter 5 examines one potentially important source for training transfer. It reviews the literature on positive psychology and builds the case for investigating positive cognitive states in order to usefully connect
individual’s episodic training experiences with more general thoughts and beliefs about their work. The constructs hope, optimism, resilience, and self-efficacy are discussed and it is proposed that they complementary serve as cognitive antecedents for transfer motivation.

**Chapter 6** describes study 1, in which new questionnaire-based measures of participation motivation, learning motivation and transfer motivation are developed to validate the conceived training-related motivation construct.

**Chapter 7** describes study 2, a large cross-sectional study designed to test a range of hypotheses linking positive cognitive states, transfer motivation, and proactivity to training transfer.

**Chapter 8** describes study 3, a longitudinal study designed to replicate findings of study 2; the effects of positive cognitive states and transfer motivation on proactive transfer behaviour and training transfer.

**Chapter 9** integrates and summarises the main findings of the three studies. Contributions to theory and practice are considered along with limitations associated with the research, and directions for future research outlined.

### 1.2 A Word about Words

The conceptual terms adopted in this thesis are consistent with the scholarly literature and some boundaries must be placed on this research.

The term *competence* is used as an aggregate label for any combination of interrelated cognitive, affective, and behavioural capacities including factual and procedural knowledge, metacognitions, action routines, and personal qualities such as values, beliefs, attitudes, motivations, and emotions (Boyatzis, 2008; Weinert, 2001). Training seeks to mobilise these components to enable workers to meet the complex demands of a particular professional position or to successfully carry out a complex work activity or task (Arthur Jr., Bennett Jr., Edens, & Bell, 2003; Wickens, Hutchins, Carolan, & Cumming, 2011). This view represents a demand-oriented or functional approach, placing at the forefront the manifold challenges
individuals encounter in the context of work and everyday life (Rychen, 2004). Thus, the term competence (or plural: competencies) is most suitable when discussing training effectiveness. It has an outcome focus, it does not describe the learning process, rather it refers to what an individual shall achieve in results, in an event, or in a way of behaving.

*Training* can be understood as a systematic approach to affecting individuals’ competence in order to improve individual, team, and organisational effectiveness (Baldwin & Ford, 1988; Goldstein & Ford, 2002). This definition (in combination with the competence view described above) spans a large number of potential learning-related activities that may be also commonly categorised under the umbrella term *development*. In theory, training activities seek to build specific competencies for, focus upon, and are evaluated against the job that an individual currently holds. Conversely, development activities seek to cultivate personal growth focusing on future jobs and roles. However, as Aguinis and Kraiger (2009) remark, often it is difficult to determine whether a specific intervention or research study addresses training, development, or both. Therefore, in the remainder of this thesis, all efforts that refer to training and development will be termed training.

On the same note, when speaking about training I refer to learning activities that are *deliberate* and *organised* (Litwinska, 2006). Deliberate signifies the intention to search for competencies (knowledge, skills, attitudes etc.) of lasting value; consciously formulated before starting the activity by the learner or by another entity. Organised implies a planned pattern or sequence with particular aims, involving a providing agency (person, body, or institution) which sets up the learning experience. Together, these inclusion criteria describe a vast range of formal learning activities that may be provided in-house or by an external training provider, set up as an extensive program or a condensed burst, delivered in a classroom or online, resulting in a recognised qualification or not. Of course, a number of activities whose main purpose is not learning may also produce learning. In fact, accidental, random, or informal learning experiences occur frequently and can be
extremely valuable to individuals and organisation (Watkins & Marsick, 1992), but they are not part of this investigation.

For the purposes of this research the terms transfer of training and transfer of learning are differentiated, albeit I acknowledge that views differ in this debate (e.g. Hager & Hodkinson, 2009; Haskell, 2000; Leberman, McDonald, & Doyle, 2006). Transfer of learning has its origin in the educational context and describes when previous learning supports new learning or is rather a hindrance (e.g. Cree & Macaulay 2000; Thorndike, 1932). While this notion is indeed highly relevant to training effectiveness, my research does not cover learning theory. It is assumed that trainees do understand the competencies trained. Rather, the conception of transfer of training is distinct: it is more than a function of the original learning during training, it relates to the utilisation of work-oriented training (e.g. Baldwin & Ford, 1988; Broad, 1992). This thesis focuses on training transfer (transfer of training is used synonymously) and the concept is defined further in this thesis.

From a human capital perspective, training transfer is – though crucial – only one building block for training effectiveness. For work training to be ultimately considered effective, it must develop competencies that are strategically aligned with an organisation’s goals (Noe & Tews, 2012). For instance, ideally a training intervention is determined by a thorough needs analysis and the resulting training design and delivery convert these needs into appropriate learning opportunities. My research acknowledges that training alone may not be able to realise its benefits if it is ill prepared, disconnected from human resource management functions, or if the organisation is dysfunctional in other areas (Aguinis & Kraiger, 2009). Likewise, the science of learning, quality instruction, and program evaluation are also crucial building blocks for training effectiveness (Coultas, Grossman, & Salas, 2012). These necessary operations should ideally be informed by research about training transfer but are likely affected by various organisational contingencies. The present research acknowledges those realities and assumes respective qualities and features to be equally distributed in affecting individual and organisational performance.
Finally, this research does not consider more distal outcomes such as organisational or team performance because they arise as a function of a broad range of factors; training transfer being only one of them. While there is clearly a need for research about those links including the *vertical* transfer of training (Kozlowski & Salas, 1997), the present research deals with variables and processes that lead up to the *horizontal*, individual-level transfer of training.
Training transfer signifies that new competencies gained in a training context are applied in a work environment. This transfer involves retention and application as well as generalisation and maintenance of new knowledge, skills, abilities, attitudes, and behaviours (Baldwin & Ford, 1988; Burke & Hutchins, 2007; Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012). That is to say, training transfer is more than what was learned during training; it is the evidence that competencies trained were used on the job for which they were intended.

The importance of training transfer as a concept is illustrated by a reported meta-analytic correlation between the transfer of training and job performance of .59 (Colquitt et al., 2000). However, this must be set against evidence of how little actually gets transferred.

There have been various attempts to estimate how much, on average, gets transferred from training to the workplace. The figure of 10% as an average
transfer rate, originally a speculation by Georgenson (1982), has become the “sticky idea” (Ford et al., 2011) in the scholarly literature. Cited in a seminal paper by Baldwin and Ford (1988), the figure was not in fact based on scientific data (Saks, 2001). Wexley and Latham (2001) and Saks (2002) respectively estimated that 40 and 62 per cent of content is transferred immediately after a training intervention, while 25 - 44 per cent remains transferred after six months, falling to 15 - 34 per cent after one year. Although these estimates suggest that average transfer rates are not as weak as has been traditionally thought, they nevertheless reinforce the commonly held belief that much training fails to result in full and sustained transfer of new competencies to the workplace.

There has been tremendous growth in training research over the last forty years, and the training field has grown exponentially in the past decade (Blume et al. 2010; for comprehensive and historic reviews see Baldwin, Ford, & Blume, 2009; Cheng & Hampson, 2008; Leberman, McDonald, & Doyle, 2006). The rise in scholarly interest in training and development in work organisations is reflected by new conceptualisations (Segers & Gegenfurtner, 2013) and regular reviews of the training literature (Aguinis & Kraiger, 2009; Baldwin & Ford, 1988; Burke & Hutchins, 2007; J. P. Campbell, 1971; Cheng & Hampson, 2008; Cheng & Ho, 2001; Ford & Weissbein, 1997; Grossman & Salas, 2011; Kozlowski & Salas, 2009; Latham, 1988; Merriam & Leahy, 2005; Salas & Cannon-Bowers, 2001; Salas, Tannenbaum, et al., 2012; Salas, Weaver, & Shuffler, 2012; Tannenbaum & Yukl, 1992; Wexley, 1984). A significant part of this literature is devoted to research and theory relating to training transfer.

2.1 Conceptual Models of Training Transfer

Training transfer has been historically conceptualised in terms of two key learning-related processes (Blume et al., 2010, p.1067-1068):

“(a) generalization—the extent to which the knowledge and skill acquired in a learning setting are applied to different settings, people, and/or situations from those trained, and (b) maintenance—the extent to which changes that result from a learning experience persist over time.”
Baldwin and Ford (1988) were the first to provide an integrated model of the processes leading to training transfer. This heuristic framework (Figure 1) for the training transfer phenomenon focuses on three factors: 1) Training inputs, including trainee characteristics, training design, and work environment; 2) Training outputs, defined as the amount of original learning which occurs during the training program and the retention of that material after the program is completed; and 3) Conditions of transfer, which account for the generalisation of knowledge and skills acquired in training to the job context and the maintenance of that learning over time on the job. The various direct and indirect effects between these factors and elements indicate that the transfer of training is a complex phenomenon. Baldwin and Ford’s conceptual model of training transfer is the most commonly cited (Sitzmann, Brown, Casper, Ely, & Zimmerman, 2008); it has stimulated a number of subsequent theoretical refinements and re-conceptualisations.

Figure 1. A Model of the Transfer Process (Baldwin & Ford, 1988)
Laker (1990) proposed that the temporal dimension (maintenance in Baldwin & Ford’s model) should include transfer *initiation* and transfer *maintenance*. Transfer initiation refers to whether trainees attempt to apply the competencies taught in training, whereas transfer maintenance refers to continued application of trained competencies over time. Laker’s generalisability dimension (generalisation in Baldwin & Ford’s model) includes *near* and *far* transfer, and is closely linked to what Yelon and Ford (1999) later classified as *closed* or *open* competencies which training attempts to instil. Closed competencies are those which are established in the training environment and that can be produced identically in the transfer environment. In this ‘near transfer’, trainees take stepwise actions in one particular way according to a set of rules that was implemented at the training intervention in a precise fashion. Essentially, transfer occurs in work situations that mirror those in training. For instance, a mechanic that was trained to change a car tyre can do so immediately after training on the job by mimicking the behaviours in essentially the same form as they were presented in training. In contrast, open competencies are those that are characterised by guidelines and principles that need to be interpreted within the transfer environment. In this ‘far transfer’, trainees cannot rely on one single correct way to take action but experience freedom to perform highly variable competencies as actual situations at work are different from those in training. For example, leadership development exposes trainees to schemas that conceptually abstract reality with the intent to allow maximal flexibility and utility.

Broad and Newstrom (1992) highlighted the role of key stakeholders and time in affecting training transfer. Three key time periods were identified: pre-training, training, and post-training. Key stakeholders included executives, supervisors, performers, performance consultants, evaluators, performance partners, co-workers, subject matter experts, etc. (Broad, 2005). In a more actionable view, the stakeholders and time periods form a matrix and the authors derive strategies that should be undertaken by each stakeholder at each time point to ensure transfer of training occurs. In addition to the explicit inclusion of time and stakeholders as a factor in training transfer processes, Broad & Newstom’s framework is also more
systems-oriented than those developed earlier, acknowledging that training alone does not ensure behavioural change as it does not take place in a vacuum (see also Goldstein, 1993). A view also echoed by Baldwin and Magjuka (1997) stating that training experiences should not be considered as isolated events but episodes in peoples’ organisational and working lives. For example, the degree of clarity about a training’s purpose before the training has an impact on training transfer and is a function of a supervisors coaching regarding desired objectives. A central premise of the model is that relevant organisational stakeholders need to be involved from beginning to end in order to maximise the likelihood that transfer will occur. However, while transfer strategies are suggested, they largely focus on the environment, and the explanatory psychological mechanisms underpinning these strategies are little discussed.

Addressing the individual in the transfer process, Russ-Eft (2002) suggested a training transfer typology that focuses on situational elements that directly affect the trainee, rather than on a trainee’s dispositional and personality characteristics. The author compiled and organised constructs which can be manipulated by researchers or practitioners as part of a training intervention or its implementation. Elements are categorised along the time-dimension into pre-training elements, training design elements, and post-training. This stage view is flanked by situational elements of the transfer environment (i.e. work environment) which likely affect an individual throughout the entirety of given learning experience. The contribution of this typology is that it draws attention to malleable factors that reside in the individual or the environment and discusses how these factors potentially affect a trainee and the transfer of training.

Building on the systems view of Newstrom and Broad (1992), Kontoghiorghes (2004) proposed the investigation of training effectiveness via organisational factors as they relate to work performance, of which training and its transfer are parts. The author argued that most factors studied under the traditional conceptual transfer frameworks (e.g. Baldwin & Ford, 1988) pertain to trainee characteristics and attributes that are directly related to the training context or training-related outcomes. Under such view,
the work environment is defined in terms of characteristics that mainly
describe the training transfer climate and therefore treat training as a non-
systemic phenomenon, independent of the variables that affect work
that directly or indirectly influence performance, and likely a trainee’s belief
that training can actually result in enhanced performance, had been given
insufficient attention by researchers in the training transfer area.

Holton and colleagues (H.-C. Chen, Holton III, & Bates, 2005; Holton III,
Bates, & Ruona, 2000; Holton III, 1996) developed the Learning Transfer
System Inventory (LTSI) framework, which also stresses the importance of
adopting a systemic approach to training transfer. The LTSI framework
comprises 16 factors grouped into motivational, environmental, and ability
elements as well as secondary influences that jointly affect learning,
individual performance, and organisational results. The LTSI is meant as a
diagnostic tool administered post-training to assess individual trainees’
perceptions and the transfer environment (Holton, et al., 2000). Its strengths
are its extensive validation and the comprehensive set of variables that cover
the three training inputs identified by Baldwin and Ford (1988). As a result it
can provide information to organisations about what factors to target for
enhancing training transfer. Conversely, as the instrument is administered
after the training and the model neglects the time-dimension, it falls short of
covering sufficient details about factors that influence transfer before and
during training.

Over the last decade, two noteworthy attempts have been made to
synthesize extant knowledge and integrate elements of these earlier models.
The first by Holton and Baldwin (Holton III & Baldwin, 2003) sought to
integrate the three models generated by Baldwin and Ford (1988), Broad and
Newstrom (1992), and Holton et al. (2000). Aiming to reshape elements into
a more intervention-oriented framework, the authors reconceptualised
Baldwin and Ford’s original ‘trainee’ category to also include teams of
learners. Adopting a systems perspective, they further recognise “that the
learner or team is both an input to the process [...] and a unit in the model
that may be shaped by interventions” (Holton & Baldwin, 2003, p. 9).
Illustrated as a process (Figure 2), the framework further expands Broad and Newstrom’s time dimension into five time periods. Time 1 represents the point at which the learner enters the learning environment, encapsulating the four input variables identified by Holton et al. (2000): ability, motivation, individual differences, and prior experience. Times 2, 3, and 4 are analogous to the before, during and after stages of training, respectively, and thought to be most susceptible to influence by the organisation, the learning event and process, and the learner(s) themselves. Ultimately, this leads to time point 5 which represents transfer at work or performance outcomes, distinguishing between near transfer (i.e. short term results) and far transfer (i.e. longer-term results and generalisation to new situations). The framework is helpful for understanding training transfer as a process in which the learner(s) are the central feature undergoing the learning experience and being affected by a range of factors. Despite being more comprehensive than its predecessors, the model has not received much attention in empirical studies.

![Figure 2. Conceptual Framework for Managing Learning Transfer Systems (Holton & Baldwin, 2003)](image)

A second approach by Burke and Hutchins (2008) also unified elements categorised as training inputs by Baldwin and Ford (1988) with the time dimension from Broad and Newstrom (1992; Broad, 2003, 2005). Burke and
Hutchins further extended existing transfer factors by drawing on more recent empirical studies and their own findings from a qualitative survey of training professionals. The resultant heuristic model (Figure 3) presents a systems view in which work design and job content, training content, and organisation size and structure all affect training transfer and ultimately job performance. The model depicts five major influences on learning, transfer, and subsequent performance by adding trainer characteristics and training evaluation to the original three training inputs (learner characteristic, design and delivery, and work environment) suggested by Baldwin and Ford (1988). To reflect the notion that transfer strategies can work across all phases, temporal dimensions in the proposed model now include a “not time bound” category alongside the before, during, and after phases introduced by Broad and Newstrom (1992). Thus, Burke and Hutchins argue that support for transfer should be an iterative and pervasive process throughout the entire learning and transfer process. Lastly, the model identifies five key stakeholders, adding a learner’s peers and limiting those listed in Broad (2005) to a more manageable set: peers, trainer, trainee, supervisor, and the organisation. The resulting model may be considered the most comprehensive proposition to date; although the heuristic is impractical to test empirically in its entirety. Nevertheless, it suggests how to thoroughly think about the transfer of training.

Figure 3. A Proposed Model of Transfer (Burke & Hutchins, 2008)
Summarising 25 years of theorising about the phenomenon, no particular approach dominates contemporary research. The transfer of training might be best understood as a function of a system of influences. Those influences comprise stakeholders and processes nested in the work and learning environment as well as the learner him- or herself. Each of these categories is thought to carry a range of characteristics with interactions between them taking place before, on entry, during, on exit, and/or after a training activity. Accordingly, the transfer of training may be considered a complex and challenging phenomenon. At the same time, all models reviewed suggest that training transfer is a function of malleable factors which are susceptible to deliberate interventions. Consequently, improving transfer can be addressed by targeting features of the work organisation, the individual, and the learning experience. Given that these factors are interrelated, a systems perspective of training transfer is sensible. In other words, work training and its transfer are not to be understood in isolation but are episodic and fundamental work experiences for an individual. Ultimately, training effectiveness is more than just learning new knowledge and skills but also applying and converting those to competence and performance at work.

2.2 Empirical Research into Effective Training Transfer

The study of training transfer effectiveness focuses on “variables that affect the impact of training on transfer of training as well as on interventions intended to enhance transfer” (Aguinis & Kraiger, 2009, p. 465). Many studies have examined the individual, situational and contextual influences on multiple dimensions of training transfer (e.g. Chiaburu & Tekleab, 2005). In fact, reviews by Cheng and Hampson (2008) and Grossman and Salas (2011) conclude that empirical research into training transfer has produced a wealth of information about the factors underlying transfer effectiveness. Yet, both these sets of authors contend that there is also significant variability in findings across those studies and counterintuitive results that are reported but not explained.
A recent meta-analysis by Blume et al. (2010) provides the most comprehensive overarching summary of the empirical findings in respect of the variables linked to transfer effectiveness. This meta-analysis integrates the results of 89 studies (total N=12,496) and is the only full-scale quantitative review of its kind in the training transfer domain. A recent qualitative review by Grossman & Salas (2011) serves as a valuable complement to the Blume et al.’s (2010) meta-analysis. An overview of the findings of these two papers is presented in Table 1, categorised in terms of the contributions made by characteristics of the learning experience, the work environment, and of the individual being trained.

The learning experience plays a central role, not merely for developing new competencies, but also in transferring them. Blume et al (2010) found that transfer was promoted to the extent that the training environment and the transfer environment (i.e. the job or work setting) were similar. In other words, a learning experience that is realistic and encompasses characteristics of the work environment increases the probability that trained competencies will transfer (Grossman & Salas 2011). Moreover, transfer is enhanced by employing training design strategies such as behaviour modelling, error management, adaptive training, error prevention, and scaffolding (Wickens et al., 2011).

Concerning the work environment, studies have identified the transfer climate as the most crucial factor influencing transfer (Blume et al., 2010; Colquitt et al., 2000; Grossman & Salas, 2011). Transfer climate has no agreed definition and is rather an umbrella concept (Burke & Hutchins, 2007; Holton III, Bates, Seyler, & Segerstrom, 1997). It includes support for transfer from the supervisor and/or peers via recognition, feedback, encouragement, rewards, and modelling. The transfer climate may also comprise opportunities and adequate resources to apply new competencies, as well as cues that remind of transfer, feedback, and rewards. Additionally, empirical research has shown that the transfer of training is facilitated by employing such organisational features at different time points before, during, and after the training (Saks & Belcourt, 2006), as well as through processes of training evaluation (Saks & Burke, 2012).
### Table 1. Factors affecting Training Transfer

<table>
<thead>
<tr>
<th>Characteristics of the learning experience (i.e. the setting and events that constitute the learning experience)</th>
<th>Factors identified through meta-analysis</th>
<th>Factors identified through qualitative review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimistic preview (.20)</td>
<td></td>
<td>behavioural modelling</td>
</tr>
<tr>
<td>Goal-setting (.08)</td>
<td></td>
<td>error management</td>
</tr>
<tr>
<td>Characteristics of the trainee (i.e. the protagonist expected to learn and apply new competencies)</td>
<td></td>
<td>realistic training environment</td>
</tr>
<tr>
<td>Utility reactions (.46*)</td>
<td>Utility reactions</td>
<td></td>
</tr>
<tr>
<td>Job involvement (.38*)</td>
<td>Cognitive ability</td>
<td></td>
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<tr>
<td>Cognitive ability (.37)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voluntary participation (.34)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation (.29)</td>
<td>Motivation</td>
<td></td>
</tr>
<tr>
<td>Conscientiousness (.28)</td>
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<tr>
<td>Post-training knowledge (.24)</td>
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</tr>
<tr>
<td>Pre-training self-efficacy (.22)</td>
<td>Pre-training self-efficacy</td>
<td></td>
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<tr>
<td>Post-training self-efficacy (.20)</td>
<td>Post-training self-efficacy</td>
<td></td>
</tr>
<tr>
<td>Neuroticism (-.19)</td>
<td></td>
<td></td>
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<tr>
<td>Learning goal orientation (.16),</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (male; .12)</td>
<td></td>
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</tr>
<tr>
<td>Avoid-performance goal orientation (-.12)</td>
<td></td>
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<tr>
<td>Locus of control (-.12)</td>
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</tr>
<tr>
<td>Characteristics of the work environment (i.e. the setting and events in which the trained competencies shall be used)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisor support (.31)</td>
<td>Supervisor support</td>
<td></td>
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<tr>
<td>Transfer climate (.27)</td>
<td>Transfer climate</td>
<td></td>
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<tr>
<td>Peer support (.14)</td>
<td>Peer support</td>
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<tr>
<td>Opportunity to perform</td>
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<tr>
<td>Follow-up</td>
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</tbody>
</table>

Note. Factors with meta-analytic effect sizes of <.1 have not been listed. Figures in brackets represent meta-analytic mean population correlation (corrected for unreliability in predictor and criterion). *denotes values that are substantially inflated through same-source and same-measurement-context (Blume et al., 2010)
For factors that reside with the individual, cognitive ability is the most strongly associated with transfer ($\rho$ for job involvement and utility reactions is much smaller when corrected for bias of same-source and same-measurement-context; Blume et al., 2010). Trained employees with higher cognitive ability have more success in processing, retaining and generalising the competencies learnt. Other stable individual characteristics which have been found to have a consistent relationship with transfer are personality constructs such as conscientiousness and neuroticism. The studies also identified a number of more dynamic individual characteristics which can be managed to influence transfer capacity. This is especially important when considering organisational realities in which the capacity to select trainees on the basis of dispositional characteristics might be constrained by logistic, legal and political reasons (Blume et al., 2010; Yamkovenko & Holton III, 2010). For instance, voluntary participation in training was found to affect subsequent training transfer. Also, self-efficacy and motivation were identified as consistent mechanisms by which individuals are far more likely to transfer training into the workplace (Blume et al., 2010; Colquitt et al., 2000; Gegenfurtner, 2011; Grossman & Salas, 2011).

Lastly, the nature of the competence has been found to act as a moderator, whereby some of the factors discussed predict transfer more strongly when the training develops “open” competencies (e.g. leadership), rather than “closed” competencies (e.g. operating particular computer software packages) (Blume et al., 2010).

### 2.3 The Role of Motivation in Models of Training and Transfer

Table 1 suggests that many factors influence the transfer of training, and that no single factor accounts for the majority of the variance in transfer. A large amount of empirical research into transfer has focused on characteristics of the employee/trainee (Blume et al., 2010). This is perhaps not surprising, since the person trained is ultimately responsible for applying trained competencies at work. Salas and Kozlowski (2009) note that person and psychological processes are the central elements through which all other factors act to deliver training outcomes:
“All training starts (or should start) by considering who the trainee is, that is, by identifying the individual characteristics, motivations, and skills the trainee brings to training. [...] The person—the trainee and his or her characteristics—influences the way that training will be experienced, what will be salient, and how the processes of learning and motivation will unfold.” (p. 463).

The individual is accordingly the basic inflow in a system comprised of the work and training environment (Broad, 2005; Holton III & Baldwin, 2003), and can “elect” (or not) to use new knowledge and skills once returned to ‘life as usual’ (Perkins & Salomon, 2012). The set of psychological processes within this system which determine specific (transfer) intentions and actions may be understood as motivation (Kanfer, Chen, & Pritchard, 2008). Motivation has populated literally all models of the training transfer process since Baldwin and Ford’s (1988) initial framework. It is also among those constructs that show high meta-analytic correlation with training transfer ($\rho = .29$; Blume et al. 2010; see also Table 1), making it a key explanatory variable. Indeed, as one reviewer commented, “theories that assume either the absence of, or a negligible role for, motivation are unlikely to be scientifically productive” (Gegenfurtner, 2011, p. 163).

At the same time, scholars have also raised a number of concerns about properties of motivational constructs, labels and the measures that have evolved in the training domain. For example, in their review of transfer motivation, Gegenfurtner et al. (2009) conclude that “prevailing theories and methods of measuring transfer motivation are limited in scope” (p. 416). Equally, Zaniboni and colleagues claim that: “there is still ambiguity in the definition and measurement of training motivation” (Zaniboni, Fraccaroli, Truxillo, Bertolino, & Bauer, 2011, p. 136).

Therefore it is argued that research needs to focus much more attention on the psychology of motivation as it relates to training effectiveness. Next, motivation as it relates to the training context is briefly introduced and current conceptual and operational limitations summarised. The following chapter 3 then develops a refined conceptualisation of training-related motivation (TRM).
Wexley & Latham (1981) were among the first to highlight the important role of motivation for work training. They argued that, even if trainees possess the ability to comprehend and apply new competencies, training outcomes will be poor if motivation is low. Noe (1986, p. 743) subsequently identified two aspects of motivation as being particularly salient in the training context. *Motivation to learn* was defined as “a specific desire on the part of the trainee to learn the content of the training program” and *motivation to transfer* as “the trainee’s desire to use the knowledge and skills mastered in the training program on the job”. Because what is learned influences what is available to transfer, both aspects of motivation are seen as ultimately influencing behaviours linked to applying new competencies at work (Colquitt et al., 2000; Naquin & Holton III, 2003). Researchers have also pointed to *pre-training* motivational states and processes, for example to understand training participation (Bates, 2001). Although these and other TRM constructs and their measures have been a valuable stimulus for research, five interrelated concerns have been identified about extant research and theorising on TRM.

### 2.3.1 Conceptualisation

There has historically been a lack of precision in the conceptualisation of TRM (Salas & Cannon-Bowers, 2001). Whilst theories of work motivation and performance abound (Kanfer et al., 2008; Latham, 2007; Pinder, 2008), for the most part TRM constructs are not well grounded in established motivation theory (Gegenfurtner, 2011). Few researchers have clearly articulated the underlying motivational theory when empirically testing a TRM construct (e.g. Gegenfurtner, Festner, et al., 2009; Zaniboni et al., 2011). Zaniboni et al. (2010) argue that the ambiguity and lack of sophistication in conceptualisation results in disadvantageous effects on training effectiveness theories, types of measures used to assess TRM, and interpretation of findings.

Thus, research need to begin by providing sufficient theory which clearly states how and why a given TRM construct should relate to other constructs. For instance, the meta-analytic paths analysis by Colquitt et al. (2000) and
the theoretical review by Beier and Kanfer (2009) provide integrated narratives on a range of processes and variables involved for understanding and conceptualising TRM.

2.3.2 Definition

The problems with inadequate conceptualisation carry over to the semantics and labels employed around TRM constructs. For example, there is no agreed definition of pre-training motivation. While it signifies the time before training, it is unclear whether it captures the motivation for attending training (e.g. Bates, 2001), the motivation to learn during training, as measured before the training (e.g. Machin & Treloar, 2004), or the motivation to transfer what may be learned in the training (e.g. Warr, Allan, & Birdi, 1999). Similar issues arise for the label training motivation, which has been employed as the desire for training in general (e.g. Zaniboni et al., 2011), the motivation to attend a particular training course (e.g. Mathieu, Tannenbaum, & Salas, 1992), or the intent to learn during training (e.g. Smith, Jayasuriya, Caputi, & Hammer, 2008).

2.3.3 Dimensionality

No grand theory of human motivation exists; instead it is considered a complex and multi-faceted phenomenon (Ryan, 2012; Shah & Gardner, 2008). Interest in understanding the nature of motivation in relation to work has led to the development of a range of models that better delineate the different pathways by which environmental and individual factors influence motivational processes and their outcomes (Kanfer, 2012; Latham, 2007; Pinder, 2008). However, Gegenfurtner et al. (2009) cite numerous publications that conceived and operationalised TRM uni-dimensionally (e.g. Facteau, Dobbins, Russell, Ladd, & Kudisch, 1995; Major, Turner, & Fletcher, 2006; Noe, 1986). Yet, a model of learning motivation comprising dimensions of self-efficacy, goal setting, and goal commitment showed superior predictive power over Noe and Schmitt’s (1986) uni-dimensional measure which is often employed by researchers (K. Kim, Oh, Chiaburu, &
Brown, 2012); and Beier & Kanfer (2009) have also identified multiple processes underlying motivation at various stages in the training process.

Only a few constructs and measures of TRM have been purposefully crafted as multi-dimensional, and they themselves have limitations. The motivation to improve work through learning (MTIWL; Naquin & Holton III, 2003) is described as a function of motivation to train and motivation to transfer. However, the two dimensions define two different motivational goals (to train and to transfer; see 2.3.2) rather than the multiple psychological processes which would explain respective goal selection and striving. The MTIWL further combines various subscales but only refers to other original work from which measures were taken, not fully revealing the underlying theory for this proprietary instrument (Naquin & Holton III, 2003). Another model of training motivation was based on dimensions of valence, instrumentality, and expectancy, which correlated highly but showed differential effects. Yet, the scale used was only empirically tested in Italian (Zaniboni et al., 2011). Finally, promising attempts to link processes of self-determination to predict autonomous and controlled motivation to transfer resulted in mixed findings, and thus require more research (Gegenfurtner, Festner, et al., 2009).

2.3.4 **Dynamism**

Motivation is a dynamic psychological state (Kane, 1986). Changes in environmental characteristics and conditions can influence, both immediately and over time, the motivational states within an individual. However, Gegenfurtner et al. (2009) identify just one study out of 33 as conceiving of TRM as dynamic. Consequently, measures are not adequately equipped to capture TRM as a variable state: “**Doing well in training programs is important to me**” (Facteau et al., 1995); “**I work hard to do well in training programs, even when I don’t like them.**” (MTIWL Naquin & Holton III, 2003); “While applying training at work, I can learn a lot.” (Gegenfurtner, Festner, et al., 2009); “**I think it is important to learn new things from training activities.**” (Zaniboni et al., 2011). Such operationalisations reflect general views about training, and their latent
constructs would capture little motivational variance regarding a distinct training courses or over time.

2.3.5 Operationalisation

The literature on employing TRM constructs generally provides little, if any, information about how theoretical notions were translated into measures and/or regarding their validation (e.g. Weissbein, Huang, Ford, & Schmidt, 2010; exceptions are Gegenfurtner, Festner, et al., 2009; Zaniboni et al., 2011). Often, items are taken from the original work of Noe (1986), thereby passing on limitations of these measures, such as problems of internal consistency (e.g. Egan, Yang, & Bartlett, 2004). Equally, questions arise whether measures created specifically for one study, sample or context can be equally used for another study sample in a different context (original items relate to principal education in schools; Noe, 1986). Ad hoc adoption or not reporting item selection and adaption criteria is common yet problematic (MacKenzie, 2003).

2.4 Conclusion

The transfer of training poses a complex challenge for practitioners and researchers alike. Various models, theories, and constructs have advanced our understanding about dispositional and situational factors that can enable or inhibit the effective application of trained competencies to the workplace. Meta-analytic findings confirm that a range of those variables consistently affect training effectiveness. Together, this body of literature suggests that focusing research on the individual as central part of a larger system is sensible. The literature review further highlights that much of successful training transfer is a function of training-related motivation.

However, currently a gap exists between knowing that certain trainee actions must be motivated and understanding the underlying psychological processes, antecedents and consequences. Specific motivational constructs in the realm of training are subject to one or more of the following critiques:
vague conceptual grounding, ambiguous definition, uni-dimensional, static orientation, and inexplicit operationalisation. Albeit a few novel approaches have been suggested more recently, one might argue that TRM remains a project ‘under construction’. The literature thus remains somewhat ambiguous about the specific psychological mechanisms and the absence of such foundational understanding likely causes practical interventions in a hit-and-miss fashion. While a great deal has been accomplished, more research is warranted.

First, training-related motivation will be revisited and conceptually refined in the following chapter 3. Second, attention must be given to the consequences of training-related motivation. Chapter 4 thus introduces the concept of proactive transfer behaviour as a means of explaining how transfer motivation in part might convert into actual training transfer via self-initiation. Third, given that training is an episode of individuals’ overall work experience, a better understanding of key psychological processes is needed that links training-related motivation with more distal precursors relating to work. Chapter 5 thus argues for investigating positive psychological states about work as cognitive antecedents for training-related motivation. Figure 4 below describes an overarching heuristic model that parsimoniously displays the relationships investigated within this thesis.

Figure 4. Framework Guiding Research
Motivation derives from the Latin verb *movere*, meaning “to be moved” to a particular action (Ryan, 2012, p. 9). It determines how resources such as time and energy are allocated to an array of tasks. This chapter develops a refined conceptualisation of training-related motivation (TRM).

In relation to work, Pinder (1998) offers an encompassing definition for motivation as “a set of energetic forces that originate both within as well as beyond an individual’s being, to initiate work-related behaviour and to determine its form, direction, and intensity, and duration” (p. 11). Various theories focus on motivation as a precursor to human behaviour (e.g. Deci & Ryan, 2004; Heckhausen & Heckhausen, 2010; Kanfer et al., 2008; Latham, 2007; Pinder, 2008; Porter, Bigley, & Steers, 2003). Motivational theories that involve the setting and regulation of goals have become particularly prevalent in recent times, and are advocated as useful organised system for understanding and influencing thoughts, emotions, decisions, and behaviour (Forgas, Baumeister, & Tice, 2013; Locke & Latham, 2002).
Goals can be understood as “mental representations of outcome states that an individual seeks to realize” (Kanfer, 2012, p. 460). Based on the view that human beings are purposeful by nature, such “desired states range from biological set points for internal processes (e.g. body temperature) to complex cognitive depictions of desired outcomes (e.g. career success). Likewise, goals span from the moment to a life span and from the neurological to the interpersonal” (Austin & Vancouver, 1996, p. 338). In all domains of life, goals are believed to be pursued consciously at times and, at other times, they might be pursued less consciously through impulses, routines or the influence of external cues (Karoly, Boekaerts, & Maes, 2005; Stajkovic, Locke, & Blair, 2006).

The literature further recognises two main processes associated with goals: goal setting and goal striving. Goal setting pertains to processes by which an individual allocates time or energy across behaviours or tasks, such as analysing a scenario, selecting a set of goals, planning a strategy for achievement, and making the choice to actively engage in the pursuit (Locke & Latham, 2002).

Goal striving refers to processes by which individuals seek to accomplish those established goals through reducing the discrepancy between a current state and an envisioned outcome (Carver & Scheier, 1999). Accordingly, much of human action involves continuous regulation of multiple goals by controlling impulses, delaying gratification, prioritising etc. (Baumeister, Vohs, & Tice, 2007). It has been suggested that this capacity to control and self-regulate actions is “the quintessential characteristic of human beings” (Forgas, Baumeister, & Tice, 2009, p. 1) and “their most essential asset” (Porath & Bateman, 2006, p. 185), enabling individuals to function within dynamic and complex human societies.

Self-regulation refers to the change of the self by the self in bringing thinking, feeling, and behaving into accord with desired goals or preferred standards (Forgas et al., 2013). This involves initiating action, putting forth effort, controlling focus, trying different task strategies, seeking feedback, evaluating progress, and persisting in the face of obstacles or setbacks (Kanfer et al., 2008). Gollwitzer and Bayer (1999) propose a perspective on
self-regulatory processes which involves four phases: pre-decisional (choosing among competing desires); pre-actional (forming implementation intentions in the service of the desired goal); actional (bringing goal direct actions to a successful end); and post-actional (evaluating whether and what further action is necessary).

Self-regulatory mechanisms are, or can be made, conscious so as to guide purposeful activities. That is, goals are argued to be mentally accessible by the individual and so they do not represent mere impulses, unconscious motives, or deeply held needs (Pintrich, 2000). As outcome states, goals provide a reference to which the self modifies, alters, or otherwise changes itself or its responses including the direction of attention, intensity, and persistence (Kanfer, 1990). Direction reflects the choice, quality, and level of the goal. Intensity represents the vigour with which an individual pursues the associated goal. Persistence denotes the maintenance of the pursuit of the goal. Taken together, these properties may be considered motivation.

Various incarnations of goal- and self-regulation theories have been used to explain motivation and outcomes in domains such as sport, education, and work (Karoly et al., 2005), including aspects of health, wellbeing, and job performance (Vancouver & Day, 2005), and training (e.g. Brown & Warren, 2002; Johnson, Garrison, Hernez-Broome, Fleenor, & Steed, 2012; K. Kim et al., 2012; Locke & Latham, 2002; Sitzmann & Ely, 2011; Wexley & Baldwin, 1986). For instance, research has shown that employees are motivated to participate in developmental activities as a response to perceived gaps in their competencies, relative to their peers (Zoogah, 2010). In total, these studies support the notion that the setting of and striving for goals varies as a result of various internal and external factors, and as a result those motivational processes mediate the achievement of goals.

Considering that individuals generate and strive for goals over a training episode it is beneficial to conceptually anchor training transfer research – and this thesis – in a goal regulatory paradigm. In other words, the transfer of training involves purposeful and self-regulated acts that must be motivated.
The conceptualisation of training-related motivation proposed in this dissertation is based on Wolters’ (2003) perspective of human motivation. According to this perspective, TRM can be understood as either a product or a process. Viewed as a product, motivation refers to an individual’s state or willingness to set goals, engage in, or stay on a task. This gives rise to the question: ‘Motivation for what?’ The motivational stage model of the training process proposed by Beier and Kanfer (2009) addresses this question. It provides specific targets or ‘umbrella’ goals: that is, trainees experience a motivational level or state that influences their choice, effort, and persistence regarding participating in, learning from, and transferring training.

Viewed as a process, motivation refers to the psychological mechanisms that account for said choice, effort, and persistence (Schunk, Pintrich, & Meece, 2007). This gives rise to the question: ‘What gives rise to this motivation?’ The perspective about the means will be subsequently addressed by referring to Parker, Bindl and Strauss’ (2010) who compiled a range of theories relevant for goal setting and striving, categorised and coined can-do, reason-to, and energised-to.

The stage model of TRM proposed by Beier & Kanfer (2009) is now discussed in greater detail.

### 3.1 Motivational Stages

Beier and Kanfer (2009) proposed a heuristic 3-stage model of TRM which considers the motivation for participating in training, the motivation during the learning process, and the motivation to transfer the training to the work situation. Their model has a number of features. First, each stage of the model describes a distinct motivational domain: participation, learning, transfer. This allows to discern discrete goals for the main resource allocation and self-regulation processes involved in a training episode. Second, the model explicitly incorporates the motivation to participate as key antecedent for training effectiveness; arguably a variable that has been under-investigated. Third, the model depicts a temporal ordering (see Broad & Newstom, 1992) where the outcomes at each stage influence the other stages.
of the process. Specifically, the desire to participate in a training activity is portrayed as having a significant flow-on effect onto the motivation to learn during training, which subsequently affects the motivation to transfer. Given these contributions, it is surprising that the work by Beier and Kanfer (2009) has not received more attention. Interestingly, while scholars have investigated one or two of these motivational domains (e.g. Holton III et al., 2000), no empirical research has examined the relationship between all three: participation motivation, learning motivation, and transfer motivation.

3.1.1 Participation Motivation

No agreed definition exists for participation motivation, it is characterised by how individuals approach a training opportunity (Beier & Kanfer, 2009). Trainees enter training activities with varying aspirations, experiences, and assumptions (Quiñones, 1995; Steele-Johnson, Narayan, Delgado, & Cole, 2010; Yelon, Sheppard, Sleight, & Ford, 2004). For instance, attitudes, subjective norms, and perceived control as well as reactions to past activities and perceptions of supportiveness have been found to determine future training intentions (Bates, 2001; Hurtz & Williams, 2009).

Participation motivation may be viewed as a precondition to training effectiveness. Empirical research suggests that an individual’s motivation to participate in a training activity influences subsequent attendance (Fishbein & Stasson, 1990; Tharenou, 2001), often a prerequisite to learning new competencies. Indeed, some studies have found measures of pre-training motivation to predict post-training test performance (Martocchio, 1992; Webster & Martocchio, 1993) and training transfer (Facteau et al., 1995). However, others have reported a negative relationship between pre-training motivation and post-training test performance (Tannenbaum, Matthieu, Salas, & Cannon-Bowers, 1991).

Understanding the motivational states which precede the actual learning experience is important, not solely because of the potential impact on learning and transfer, but also because of increasing expectations that individuals take ownership for and self-direct their regular competence
development (Carbery & Garavan, 2011). Yet, the motivation to participate in training is arguably the least investigated aspect of training-related motivation. In the present research participation motivation is defined as an individual’s desire to join and attend a training opportunity.

### 3.1.2 Learning Motivation

Learning motivation refers to the desire of the trainee to learn the content of a training program (Noe, 1986), it determines the choices individuals make to attend to and persist in learning activities (Klein, Noe, & Wang, 2006). For instance, trainees motivated to learn have been found to be more likely to seek out practice opportunities for their learning via rehearsal (Ford, Quiñones, Sego, & Sorra, 1992). Motivation to learn also influences knowledge comprehension and competence mastery, independently of ability to learn (Wexley & Latham, 1981). For example, learners who invested more time and effort into completing online materials also learned more (K. G. Brown, 2001).

The motivation to learn construct has been extensively discussed and researched over the years (e.g. Ainley, 2006; Colquitt & Simmering, 1998; Kanfer, 1990; Kinman & Kinman, 2001; Noe, Tews, & McConnell Dachner, 2010; Schunk, Pintrich, & Meece, 2007; Wlodkowski, 2011). Empirical studies support the conclusion that motivation to learn is a robust predictor of a variety of training outcomes, that include both learning and transfer (Kontoghiorghes, 2004; Quiñones, 1995; Tannenbaum & Yukl, 1992; Weissbein et al., 2010).

A meta-analysis of 104 studies (Colquitt et al., 2000) found that motivation to learn explained meaningful amounts of variance in learning outcomes, over and above that accounted for by cognitive ability, for declarative knowledge, skill acquisition, post-training self-efficacy, and affective reactions to training. Particularly relevant for the present study, motivation to learn was also a strong correlate of transfer ($r_c = .58$), with path analyses showing that it mediated between individual and situational antecedents such as pre-training self-efficacy, valence, job involvement, locus
of control, anxiety, and training climate, and a range of learning outcomes that affect transfer. A decade later, Blume et al.’s (2010) meta-analysis of training transfer studies also found that motivation to learn exhibited a moderately strong (.23) correlation with transfer. More recently, Gegenfurtner (2011)’s meta-analysis also reported a moderate sized relationship between motivation to learn and transfer ($\rho = .28$). Both Blume et al. (2010) and Gegenfurtner (2011) concluded that motivation to learn is among a select number of malleable trainee characteristics that are important for subsequent training transfer.

### 3.1.3 Transfer Motivation

Transfer motivation refers to the desire of the trainee to apply the trained competencies at work (Noe, 1986). Distinguishing transfer motivation from learning motivation acknowledges the possibility that individuals might have a strong wish for acquiring knowledge and stimulating learning experiences but experience less of a desire to put these competencies to use at work. This might be due to a lack of compelling reasons to do so, or because the associated challenges or risks are seen as too daunting. Thus, the transfer motivation potentially plays a key role in the training process, affecting whether or not a trainee chooses to apply newly learned competencies at the workplace (Holton III et al., 2000).

In comparison to the research into learning motivation, there have been relatively few studies of the motivation to transfer. Gegenfurtner, Veermans, Festner, and Gruber (2009) identify 31 empirical studies (e.g. Egan, 2008; Egan, Yang, & Bartlett, 2004; Foxon, 1993, 1997; Gegenfurtner, Festner, Gallenberger, Lehtinen, & Gruber, 2009; Machin & Fogarty, 2004), and their review investigates the proposition that motivation to transfer acts as a mediator between individual and situational characteristics and training transfer. Interestingly, the authors report that only a third of the studies they reviewed examined the relationship between transfer motivation and training transfer. Of these, only three found that transfer motivation precedes the subsequent use of new competencies training at work (Axtell, Maitlis, &
Yearta, 1997; Chiaburu & Lindsay, 2008; Machin & Fogarty, 1997). Gegenfurtner et al. (2009) remark that this finding may be a function of variability in criteria, methods, sources, and time points used to measure training transfer across studies. Indeed, valid and reliable measurement of training transfer and effectiveness is considered one of the field’s biggest challenges (Blume et al., 2010; Ford et al., 2011). More recently, Gegenfurtner’s (2011) meta-analysis found that the population correlation estimate between transfer motivation and training transfer indicated a strong relationship ($\rho = .44$), greater than that for learning motivation ($\rho = .28$).

In summary, participation motivation, learning motivation, and transfer motivation are temporally distinct motivational states relating to training; yet research also suggests that they are sequentially interrelated in their impact upon training transfer. The review above describes them as motivational products or goals related to a given training episode. Beier and Kanfer (2009) also discuss a range of recent advances in motivational theory (i.e. process) that might underpin the three motivational stages; yet they declare “our goal is not to provide a unified, comprehensive theory” (p. 66). Moreover, they discuss a broad array of concepts including goal choice, goal striving, goal type, goal orientation, valence-instrumentality-expectancy, self-regulation, self-monitoring, self-evaluation, reaction, person characteristics, and environmental influences; simply too many to conceive a single useful TRM construct from. Yet, on the basis of goal regulation theory, the next section addresses the question “What gives rise to this motivation?’ by conceptualising the underlying psychological processes.

### 3.2 Motivational Mechanisms

Facteau et al. (1995) and Chiaburu and Lindsay (2008) noted that two elements need to be present for transfer to occur: trainees have to believe that they are 1) capable of mastering challenges associated with the training, and 2) the extra efforts associated with the training lead to valued outcomes. Meta-analytic research strongly supports the conclusion that these cognitive processes are strong predictors for training transfer (Gegenfurtner, 2011).
However, literature in other domains would suggest that there is value in researching motivation mechanisms beyond the cognitive realm (Barsade, Brief, & Spataro, 2003; Brief & Weiss, 2002; Mowday & Sutton, 1993).

Izard, Ackerman, Schoff and Fine (2000) argue that affect, in addition to cognition, plays a crucial role in complex human behaviour. Pekrun, Goetz, Titz, and Perry (2003) emphasise the functional structure of the affect system, where emotions are defined as coordinated sets of interrelated psychological processes, including affective, cognitive, physiological, and motivational components. Affect is inherent to the human condition whenever an individual interacts with its context, such as in the work environment (Barsade & Gibson, 2007). Kanfer (2012) explains that for the most part of the last century affect has been viewed as a rather static influence on performance, either in terms of valence or attitudes. However, more recent approaches to motivation portray affect as dynamic, distinct, biologically driven, and occasionally non-conscious processes that influence goal choice, goal pursuit, and that activate action (Beal & Weiss, 2005; Diamond & Aspinwall, 2003; Lyubomirsky, King, & Diener, 2005; Yeo, Frederiks, Kiewitz, & Neal, 2013).

Although interest in the role of affect in organisational behaviour has grown substantially over recent decades (Brief & Weiss, 2002; Hartel, Ashkanasy, & Zerbe, 2005) such affective mechanisms have received little attention in existing TRM approaches (exceptions include Kehr, Bles, & Rosenstiel, 1999; Machin & Fogarty, 2004). The majority of transfer research that has examined affect in a training context has conceptualised and operationalised it as a liking for or satisfaction with the training (e.g. Alliger et al., 1997; Colquitt et al., 2000; Sitzmann, Brown, Casper, Ely, & Zimmerman, 2008). Despite this lack of direct focus on affective aspects of TRM, Noe’s (1986) early work did suggest that motivation related to training is comprised of an energising component, “a force that influences enthusiasm about the program” (p, 737). Noe, Tews and McConnell Dachner (2010) have recently restated the view that affect plays a significant role in TRM and training effectiveness. They refer to the seminal work of Kahn (1990) and
argue for a stronger focus on learner engagement in which “people express themselves physically, cognitively, and emotionally” (p. 282).

Recent work by Parker, Bindl and Strauss’ (2010) addresses both cognitive and affective processes associated with motivation. The authors reviewed a range of theories relevant for goal setting and striving, and characterised these in terms of three fundamental underlying mechanisms or motivational processes. They described these as can-do, reason-to, and energised-to motivation. In the next section, these motivational forms are described, and their relevance for TRM discussed.

### 3.2.1 Can-do Motivation

Can-do motivation arises from one’s efficacious beliefs, perceived costs of action, and control appraisals and attributions (Parker et al., 2010). Individuals need to believe they can be successful when engaging in an activity, such as when attempting to master a new competence. Self-efficacy is based in social cognitive theory and refers to a person’s belief that one is able to organise and execute necessary resources and courses of action in order to perform well in a particular situation (Bandura, 1997). Self-efficacy contributes to better performance by reinforcing an individual’s judgement that better performance is possible and by generating superior commitment to such performance goals (Locke, Frederick, Lee, & Bobko, 1984). Furthermore, efficacy beliefs have been shown to enhance persistence and increase individuals’ willingness to overcome obstacles (Bandura, 1997). The phenomenon has been widely studied with relative consistent findings: the higher one’s certainty about handling something, the better the performance outcomes (Bandura, 2000; Stajkovic & Luthans, 1998). In the training literature efficacy beliefs have been found to be strongly positively related to learning outcomes and training transfer (Blume et al., 2010; Colquitt et al., 2000). In sum, trainees need to feel confident they can set and strive for goals relevant for training.

According to Parker et al. (2010), the perceived cost of behaviour or engaging in a task also characterises can-do motivation (Eccles & Wigfield,
That is, goal striving requires resources that are finite (Kanfer & Ackerman, 1989) and individuals may not engage in actions if they perceive the effort involved as too costly in terms of time, money, energy, or other resources relative to the gain they may provide (Aspinwall, 2005). Costs also involve negative aspects of engaging in a task, such as fear of failure or opportunities lost by focusing on one action rather than another (Parker et al., 2010). Thus, trainees might judge the costs of actions needed for training effectiveness as too high, thereby revising or even failing to set goals vital for learning or transfer. For example, a trainee with high mental or physical energy can fully engage in a process of trialling new competencies on the job. Correspondingly, a trainee with little available time may not sense sufficient resources to engage in such disruptive activities at work. In consequence, trainees must consider required efforts as feasible.

Can-do motivation further involves processes of control appraisal and attribution (Parker et al., 2010). Individuals with high control appraisals maintain a strong sense of responsibility, do not give up easily, and search for opportunities to act (Frese & Fay, 2001). Thus, if trainees perceive low control over processes vital for training effectiveness, then difficulties might be interpreted as signalling that the goal is not attainable and thus lead to goal disengagement. For example, if trainees sense little available time or job autonomy, they may belief that there are no opportunities for use of new competencies at work. As a result, trainees may not be motivated to participate in training in the first place. Therefore, trainees need to sense control over the challenges inherent in acquiring and applying new competencies.

All in all, can-do motivation signifies trainees’ perceptions about: the ability to organise and execute necessary resources, the costs of this resource allocation, and the control over this process. Accordingly, before a training course commences, individuals should believe they have the capacity to partake by controlling the process of organising and executing necessary resources. That is, individuals can invest only finite amounts of time, presence, attention, or money for learning activities, and they will use self-referenced information regarding the availability and cost of such resources.
(Baldwin & Magjuka, 1997; Guthrie & Schwoerer, 1994). Efficacious beliefs about learning have been consistently related to individuals actively engaging in developmental activities (Schunk & Ertmer, 2000), learning outcomes (Schunk, 1990; Zimmerman, 2000) and performance (Burke & Hutchins, 2007). Also, if trainees perceive low control over their learning processes then difficulties can be interpreted as signalling that the goal is not attainable and thus lead to goal disengagement (K. G. Brown, 2001). Initial attempts at using new competencies at work can be difficult, awkward, uncomfortable, and unsuccessful (Rackman, 1979 in Laker, 1990). Thus, when trainees transfer training they must believe they have the resources for change and are in control of associated challenges (Chiaburu & Lindsay, 2008; Ford et al., 1992; Frese & Fay, 2001; Machin & Fogarty, 1997).

3.2.2 Reason-to Motivation

Trainees might feel able to participate, learn, or transfer but have no compelling reason to do so. Reason-to motivation characterises why someone generates and strives for goals. One dominant concept in this area refers to task value beliefs which describe perceptions of the relevance, utility, and importance of the task (Eccles & Wigfield, 2002). Based on Vroom’s (1964) expectancy theory, reason-to motivation is understood as a future-oriented belief in that individuals anticipate the amount of need satisfaction that will occur when outcomes are achieved. This motivational mechanism can be understood as a resource-allocation process where time and energy are distributed between and allocated to arrays of tasks in order to satisfy needs (Kanfer & Ackerman, 1989). In other words, people pursue goals when they recognise that change toward an envisioned future outcome is important.

Beier and Kanfer (2009) state that utility judgments are well recognised in existing motivation theory and are also useful for understanding goal choice and pursuit in the training domain. Yet, so they argue, this theory might have somewhat waned over the years because of “unteatable assumptions about rationality of decision-making processes and the mental calculations that precede goal choices” (p. 69). And research has indeed shown that rational reasoning can be trumped by irrational decision making (e.g. Ariely, 2009;
Manktelow, 2012). Nevertheless, training effectiveness research has brought about constructs originating in expectancy theory that meaningfully explain and show positive relationships with different forms of training effectiveness: perceived utility (Ruona, Leimbach, Holton III, & Bates, 2002), perceived relevance (Axtell et al., 1997), training usefulness (Tai, 2006), and utility reactions (Blume et al., 2010).

In essence, trainees must appraise particular goals as valuable and so there is a strong case for reason-to motivation. To desire training participation, employees must expect and appreciate relevant outcomes (Cannon-Bowers, Rhodenizer, Salas, & Bowers, 1998; Cohen, 1990; Guthrie & Schwoerer, 1994; Tsai & Tai, 2003). During the learning process, individuals must sense they will receive a meaningful return on exerted efforts (Noe et al., 2010; Roszkowski & Soven, 2010; Shechter, Durik, Miyamoto, & Harackiewicz, 2011; Simons, Dewitte, & Lens, 2003). Ultimately there must be sufficient conviction about the need satisfaction resulting from applying and maintaining new competencies at work (Axtell et al., 1997; Kanfer & Ackerman, 1989; Velada & Caetano, 2007).

3.2.3 Energised-to Motivation

A trainee might be confident about and appreciative of activities reflecting training effectiveness but not feel stimulated to do anything. Energised-to motivation refers to activated positive affective states that can influence the setting of and striving for goals (Seo, Barret, & Bartunek, 2004). From a neuropsychological perspective, positive affect is associated with increased brain dopamine levels, which in turn have been found to improves cognitive flexibility, and to favourably influence episodic memories, working memory, and creative problem solving (Ashby, Isen, & Turken, 1999). Such affect may be understood as momentary and elementary feelings that combine both valence and activation (Russell, 2003). They influence the selection and pursuit of goals and are thus thought to play a beneficial, multifaceted, and flexible role in self-regulatory processes that cannot be explained by other current theories (Aspinwall, 1998; Lord, Klimoski, & Kanfer, 2002; Russell, 2003). That is, the experience of energy leads to a high degree of activation
which increases the amount of effort put into behaviour (Brehm, 1999). Hence, activated positive affect is thought to be particularly important for facilitating proficient and adaptive behaviours where the situation may be ambiguous and requires persistence (Bindl & Parker, 2010).

Positive arousal or energy have been found to regulate goal processes (Isen, 2000), including work behaviour (Isen & Reeve, 2005) as well as learning (Ainley, 2006), and learning (Erez & Isen, 2002). Positive mood appears to facilitate careful processing of goal-relevant information, even negative information (Aspinwall, 1998). Very limited research considered positive affect in relation to training transfer but beneficial effects were found in relation to motivation to transfer (Machin & Fogarty, 2003; 2004) and individual’s motivation to improve work through learning (Naquin & Holton, 2003). More generally, it has been found that positive affect fosters the setting of more challenging goals, helps individuals engage with a more problematic future (Oettingen, Mayer, & Thorpe, 2005), promotes taking charge behaviours (Fritz & Sonnentag, 2009), and enhances problem solving and decision making that is thorough and efficient (Ashby, Isen, & Turken, 1999). Positive moods were associated with higher proactive goal-regulation (Bindl & Parker, 2011) and using a greater number of informational cues to make more accurate judgments (Djamasbi, 2007). Positive feelings can facilitate coping processes (Aspinwall, 1998), creativity, cognitive flexibility, innovative responding, and openness to information (Isen, 2001), and prompt change-oriented behaviours (Bindl et al., 2012).

In consequence, energised-to motivation appears a useful dimension for training-related goals. Research supports that mechanisms associated with positive affect influences training participation decisions (Karl & Ungrithong, 1992; Quiñones, 1995). Positive affective experiences linked to learning are associated with higher levels of energy and enthusiasm towards new information (Macey & Schneider, 2008), aroused states of interest that make it more likely to continue with difficult learning tasks (Ainley, 2006), and the total and content knowledge acquired (Konradt, Filip, & Hoffmann, 2003). Transfer goals need active striving on the part of the trainee in order to be realised (Burke, 1997) because good intentions do not automatically
lead to goal accomplishment (Gollwitzer, 1999). Positive affect can fuel such efforts for instigating actions that differ from mental and behavioural routines (Bindl et al., 2012). Research shows that positive affect activates an approach action tendency (Seo et al., 2004), broadens individuals’ momentary action-thought repertoires (Isen, 1999), allows people to see tasks as richer and more varied (Kraiger, Billings, & Isen, 1989), and prompts more responsible behaviours, such as when completing uninteresting tasks that need to be done (Isen & Reeve, 2005).

In summary, three separate, meaningful, and complementary pathways, known to shape individual’s goal setting and striving have been reviewed. These psychological processes, labelled can-do, reason-to, and energised-to motivation, are proposed to underpin training-related motivation. Next, elements from Beier & Kanfer’s (2009) stage theory of training motivation and Parker et al’s (2010) process approach to goal setting and striving are combined in order to develop a comprehensive theory of TRM.

### 3.3 Integration and Conclusion

For training to be effective, trainees must be motivated. This chapter has drawn on two recent complementary perspectives on motivation as a basis for proposing a new conceptualisation of TRM, one that recognises the three key inter-related stages at which motivation arises with respect to a training episode and the psychological processes that underlie motivation at each of those stages.

Theory and empirical research support the premise that trainees will establish sensible goals, initiate action, pursue it, and sustain persistence when they are confident, see value, and feel activated to do what they desire to do or needs to be done. Before training, those motivational processes are concerned with the decision to participate in training. This is followed by motivational processes during the training that influence learning. Finally, motivational processes are involved in the transfer of new competencies to the work environment. These three stages form a sequence: from participation, through learning, to transfer. Consequently, motivation at each
stage is likely to have a downstream effect onto motivation at the other subsequent stages of the process, and ultimately influence training transfer.

Accordingly, I propose a multi-dimensional and multi-stage conceptualisation of training-related motivation to allow for improved theoretical and psychometrical properties. Training-related motivation – the direction of attention, intensity, and persistence to participate in, learn from, and transfer training – is a function of confidence beliefs, appreciation thoughts, and positive activated feelings (Figure 5).

*Proposition 1a: Participation motivation comprises three dimensions: can-do, reason-to and energised-to.*

*Proposition 1b: Learning motivation comprises three dimensions: can-do, reason-to and energised-to.*

*Proposition 1c: Transfer motivation comprises three dimensions: can-do, reason-to and energised-to.*

*Proposition 2a: Participation motivation is positively related to learning motivation.*

*Proposition 2b: Learning motivation is positively related to transfer motivation.*

*Proposition 3: Transfer motivation is positively related to training transfer.*

![Figure 5. A multi-stage, multi-dimensional model of training-related motivation](image-url)
Next, attention must be given to the consequences of training-related motivation. As discussed in Chapter 2, researchers have examined the concept of training transfer in many different ways (e.g. Barnett & Ceci, 2002; Haskell, 2000b; Leberman, McDonald, & Doyle, 2006b; Smith, Ford, & Kozlowski, 1997). Despite the breadth of these perspectives, for the most part these are taxonomies that distinguish different types of transfer (e.g. near and far transfer) and are less concerned with the actual means of transfer. That is, they explain little of what trainees actually do when they are motivated to transfer learned competencies. It has also been discussed that things learned in training are not consequentially used at work, the person trained is ultimately responsible for transferring the training. The following chapter argues that individuals must frequently create the opportunities and initiate the means to apply newly trained competencies. In other words, they must be proactive.
Instead of merely reacting to and being shaped by their work environment, individuals are also able to be proactive: to seek opportunities, show initiative, take action, and thus directly and intentionally influence their dealings and environments (Bateman & Crant, 1993). The notion of proactivity at work is thought to “make things happen” (Frese, Garst, & Fay, 2007; Parker, Bindl, & Strauss, 2010). In this Chapter, I review the literature on proactivity at work, explore its potential application to training transfer, and introduce the concept of proactive transfer behaviour.

In today’s world, job descriptions and task instructions are unlikely to be able to capture or pre-empt all responsibilities and situations at work. In such dynamic and complex environments, organisations need engaged employees who actively perform as part of their role and beyond (Frese & Fay, 2001).
Equally, managers rely heavily on employees “to adapt to and introduce changes in the nature of work and the methods used to carry it out” (Grant & Parker, 2009, p. 341), for example by setting goals for themselves and creating their own rewards (Crant, 2000; Frese & Fay, 2001), or by changing the complexity of and control over their workplaces even when they do not change jobs (Frese, Krauss, et al., 2007).

A proactive approach to individual and organisational challenges not only corrects problematic procedures (Frese & Fay, 2001), but also alters situations in ways that improve performance (Crant, 1995). Proactive employees are described as being agentic and anticipatory in their actions (Grant & Ashford, 2008), and as having a designated intention to change something about the self and/or the environment (Bateman & Crant, 1993; Grant & Parker, 2009). They are also described as being mindful (Weick & Roberts, 1993), and adopting a long-term perspective to develop personal goals that go beyond explicitly assigned tasks (Frese & Fay, 2001).

Conceptually, proactivity is characterised by a) an action orientation, which involves self-initiating activities opposed to passivity or reaction; b) an orientation to influence and change situations or procedures constructively and meaningfully, as opposed to waiting for those changes to occur; and c) an orientation towards the future to anticipate problems and seek opportunities (Parker et al., 2010; Tornau & Frese, 2013).

Being proactive was identified as one of ‘Seven Habits of Highly Effective People’ (Covey, 1990). Meta-analytic studies show sizeable positive relationships between proactivity and commitment, satisfaction, social networking (Thomas, Whitman, & Viswesvaran, 2010), and supervisor-rated overall job performance (Fuller & Marler, 2009; Tornau & Frese, 2013) based on indicators such as sales (Crant, 1995), customer satisfaction (Raub & Liao, 2012), network building (Morrison, 2002), creativity (T. Kim, Hon, & Crant, 2009), entrepreneurial behaviours (Becherer & Maurer, 1999), and information or feedback seeking (Morrison, 1993a, 1993b). Proactivity has further been shown to generate positive outcomes for the individual such as obtaining employment (Kanfer, Wanberg, & Kantrowitz, 2001), career
satisfaction (Seibert, Kraimer, & Crant, 2001), and career success (De Vos, Clippeleer, & Dewilde, 2009).

Proactivity has been studied under a variety of different labels (Belschak, Den Hartog, & Fay, 2010), including proactive personality (Bateman & Crant, 1993), personal initiative (Frese, 2001), taking charge (Morrison & Phelps, 1999), and voice (Dyne & LePine, 1998). Recent meta-analytic findings by Tornau and Frese (2013) show high convergence between the more dispositional constructs of personal initiative/personality and proactive personality as well as between the more dynamic constructs of personal initiative/behaviour, voice and taking charge. A distinction may thus be made between (1) proactivity as personality, and (2) proactivity as behaviour.

Proactive personality signifies an individual difference, a general and enduring tendency to take self-initiated action for changing oneself and/or the environment. It is a broad concept, which encompasses a variety of general behaviours (e.g. “I am always looking for better ways to do things.”; Bateman & Crant, 1993). This more stable orientation may be considered especially important in cases where situational factors exert little positive influence on the willingness and determination to pursue a self-initiated course of meaningful action. The strength of proactive personality is predictive of job performance (Fuller & Marler, 2009; Thomas et al., 2010; Tornau & Frese, 2013). Research also shows that people with a proactive personality are more likely to demonstrate a learning goal orientation and career self-efficacy (Fuller & Marler, 2009).

Proactive behaviours may be understood as self-initiated actions which are more specific to tasks, situations, or contexts. For example, asking for feedback is proactive behaviour, as it is instrumental for gaining information about performance at work that otherwise would not be available (Wu, Parker, & de Jong, 2013). Parker, Williams and Turner (2006) identified two dimensions of proactive work behaviours. The first, proactive idea implementation, involves taking charge of articulating or self-implementing new knowledge or an idea for improving work aspects. The second, proactive problem solving, concerns future-oriented responses which seek to prevent the reoccurrence of a typical work problem by solving it in a new or
nonstandard way. Frese & Faye (2001) argue such a classification is influenced by the context, because what is a new idea or nonstandard in one environment may be a routine approach in another context. Parker and Collins (2010) therefore eventually identified three categories of proactive behaviour at work, that are differentiated by the intended target of the behaviour: the internal organisation environment (work), the organisation's fit with the external environment (strategic), and the individual's fit within the organisational environment (person-environment fit).

In general, the antecedents of proactive behaviour are not well understood (Parker et al., 2006). Factors that have been found to promote proactive behaviour include individuals' curiosity, core self-evaluations, and future orientation (Wu & Parker, 2011), values and affect (Grant, Parker, & Collins, 2009), as well as organisational conditions such as job autonomy and co-worker trust (Parker et al., 2006), and transformational leadership and team and organisational commitment (Strauss, Griffin, & Rafferty, 2009). Proactive behaviour has also been found to be affected by individual differences, including personality, demographics, and cognitive states (Bindl & Parker, 2010; Parker et al., 2006). Ohly and Fritz (2007) examined multiple motivational predictors of proactive behaviour and found that role orientation and role breadth self-efficacy showed significant relationships, whereas intrinsic motivation and job self-efficacy did not. Parker et al. (2006) tested a model in which personality and work environment factors acted as antecedents of proactive work behaviour. They found significant direct and indirect effects for personality, role breadth self-efficacy, flexible role orientation, job autonomy, and co-worker trust on proactive work behaviour.

Finally, the effects of proactive personality on outcome variables such as job performance have been found to occur mainly via (proactive) behaviours (Parker et al., 2006; Tornau & Frese, 2013). Hence, Tornau and Frese (2013) suggest concentrating future research on the behavioural goal-directed side of proactivity.
4.1 Proactive Behaviour as Goal Regulation Process

Scholars have conceptualised proactive behaviours in different, yet similar, ways. Frese and Fay (2001) identified several key stages of behaving proactively, comprising (1) redefinition of tasks, (2) information collection and prognosis, (3) planning and execution, and (4) monitoring and feedback. Grant and Ashford (2008) suggested that proactive action involves the phases of anticipation, planning, and action towards impact. More recently, Bindl et al. (2012) have developed a model of goal-directed proactive behaviour that encompasses four behavioural elements or phases: envisioning (setting goals), planning (preparing implementation), enacting (performing actions), and reflecting (considering adjustments). Two studies reported by Bindl et al. (2012) investigate the effect of motivational variables similar to the can-do, reason-to, energised-to aspects discussed previously on work-related proactivity and career-related proactivity. They found that high-activated positive mood (e.g. being inspired, energised, and enthused) predicted all four elements of proactive goal regulation whereas low-activated negative mood was positively associated with envisioning only. That is, dispirited feelings at work might lead to thoughts about changing a situation but appear not to convert into planning or action.

The conceptualisations of proactive behaviours provided by Frese & Fay (2001), Grant & Ashford (2008), and Bindl et al. (2012) are strikingly similar to the self-regulation phases for goal implementation proposed by Gollwitzer and Bayer (1999), which were discussed in the previous chapter. Given that prior research suggests favourable effects of can-do, reason-to, and energised-to motivational states on proactive behaviours (Bindl et al., 2012), this suggests that proactive behaviour in respect of transferring training may constitute an important link between training-related motivational states and transfer outcomes.

4.2 Proactive Transfer Behaviour

It has been said that training transfer “does not just happen” (Subedi, 2004, p. 592). Although a formal training event may be seen as a natural
prompt for change, awareness of new knowledge and comprehension of new
concepts trained do not automatically convert to different behaviours at
work. Instead, I argue that transferring new competencies frequently requires
a person to behave proactively – for example, to take active steps to adapt
their learned competencies to fit within the organisational environment
(person-environment fit), to change to the internal organisation environment
(work) to suit the application of those new competencies, or even to change
the organisation’s fit with the external environment (strategic) in order to
provide a better opportunity to make use of what has been learned (see
Parker & Collins, 2010). In other words, training transfer would appear to
require the trainee to behave proactively, at least to some extent.

While contemporary perspectives on effective learning in the training
domain tend to portray the individual as being active and self-directed (e.g.
Bell & Kozlowski, 2008), surprisingly this has not tended to be the case for
training transfer. Griffin et al. (2007) state that proactive behaviours are
often important in ‘weak’ situations, in which individuals have high levels of
discretion, where goals are not tightly specified and the means for achieving
them are uncertain, and where goal attainment is not clearly linked to
rewards. These are characteristics that likely apply to many training transfer
scenarios.

Of course, training transfer behaviours are not always self-initiated; it
likely depends on the context. That is, situational and environmental cues at
work can clearly trigger the application of newly trained competencies; their
use may be officially requested or implicit in a rigid formalisation of work
processes. Therefore, training transfer is thought to be both reactive and
proactive.

Research on proactivity in the context of training is scant and limited to
the personality dimension. Major et al. (2006) found that proactive
personality had significant incremental validity in the prediction of
motivation to learn and significant indirect links to subsequent development
activity, measured as the number of training courses registered for and hours
spent in training during a six months period. This is in line with findings of
prior studies suggesting that proactive personality is related to career
management behaviours including development activities (e.g. Bryson, Pajo, Ward, & Mallon, 2006; Chiaburu, Baker, & Pitariu, 2006; Orvis & Leffler, 2011). Similarly, Bertolino, Truxillo and Fraccaroli (2011) showed that higher levels of proactive personality relate positively to the perceived instrumentality of training opportunities, future participation intentions, and perceived career development, and those relationships are moderated by age. In sum, both studies show that proactivity favourably relates to professional development but do not offer any insights about the relationship between proactivity and training transfer.

It is therefore argued that researching proactivity in the context of training transfer is timely. The literature reviewed previously would suggest focusing on proactivity as goal-directed behaviour. While the self-regulation perspective has featured strongly in training research for more than three decades, this has been almost exclusively concerned with the process of learning and mastering new competencies (Sitzmann & Ely, 2011). However, Sitzmann and Ely (2011) conclude their recent review by arguing that: “we must begin to examine how self-regulation after trainees leave the training environment influences training transfer” (p. 435).

Consequently, building on the earlier work of Gollwitzer and Bayer (1999) and Bindl et al. (2012), the present research examines the self-initiated transfer of newly trained competencies at work as a form of self-regulated goal-directed behaviour, subsequently referred to as proactive transfer behaviour. Following Bindl et al. (2012), four components of proactive transfer behaviour are proposed:

4.2.1 Envisioning

When envisioning training transfer, individuals set and decide on goals that are self-initiated, anticipatory, and change-oriented. That is, the learner imagines what it would be like to apply what was learned. Decisions are made among competing desires based on the anticipation how work might be different as a result of employing new knowledge, skills, attitudes, routines, or beliefs. For instance, leadership responsibilities may be realised via principles of inspirational communication that one has recently learned in a
training. The employee/leader may imagine future endeavours in which the deployment of such inspirational communication ultimately results in meaningful outcomes at work.

4.2.2 Planning

In planning training transfer, individuals form implementation intentions by preparing to engage in concrete behaviours that are related to their proactive goal. Independent of environmental cues, a trainee considers different scenarios and steps to best implement new competencies so the envisioned outcomes can be produced. For instance, opportunities to apply inspirational communication are considered with regards to when, where, how, and with whom.

4.2.3 Enacting

Enacting training transfer consists of overt and/or mental proactive behaviours that execute prepared plans to actually bring about the envisioned outcome state. That is, actions are self-initiated and change how the trainee performs work-related tasks based on new knowledge, skills, attitudes, routines, or beliefs. For instance, to align subordinates’ with strategic priorities, inspirational communication is used as trained during group meetings. This may involves mental preparation in a manner consistent with trained principles.

4.2.4 Reflecting

In reflecting on training transfer, individuals engage in efforts that seek to understand the consequences and implications of engaged proactive transfer activities. Such monitoring efforts evaluate whether and what further action is necessary, and lead the trainee to sustain or alter cognitive, affective, or behavioural elements until the initially envisioned outcome state is attained. For instance, deliberately observing subordinates’ reactions and their subsequent behaviours or seeking extra feedback from peers about one’s
inspirational communication attempts provides information about success or failure.

Taken together, proactive transfer behaviour comprises both observable actions and cognitions. The enacting phase is more outward-focused and noticeable, provided trained competencies involve behavioural outcome aspects. The other three phases – envisioning, planning, reflecting – are mostly internalised, although for example the reflection phase may include active observable feedback-seeking behaviour.

An important question arises as to whether proactive transfer behaviour is more appropriately conceptualised as a multifaceted or integrated construct. That is, regulatory processes are by definition cyclical and iterative (Bindl et al., 2012; Gollwitzer, 1999; Karoly et al., 2005). For instance, if outcomes do not appear satisfactory, one might go back and re-think alternative ways to improve transfer and next seek feedback and confirmation on those revised plans before eventually attempting to enact them. The exact engagement with a particular self-regulation element may also play out non-consciously albeit the overall engagement with a goal is consciously intended (Boekaerts & Cascallar, 2006; Fitzsimons & Bargh, 2004; Karoly et al., 2005). In other words, the four phases, while logically articulated, may not always be fully sequential and consciously distinguishable in an applied context. Thus, future research needs to explore how proactive transfer behaviour may be best modelled – as four distinct behavioural elements, or as a cluster of closely related behaviours reflecting a single higher-order proactive transfer behaviour construct.

4.3 Integration and Conclusion

This chapter has proposed that proactive transfer behaviour, via goal self-regulation, will be an important determinant of successful self-initiated training transfer.

On the whole, examining proactivity is timely because in a highly dynamic world organisations increasingly rely on self-directed employees who anticipate and initiate change. In the last two decades a large literature on
Proactivity has emerged, suggesting that it is “a high-leverage concept rather than just another management fad” (Crant, 2000, p. 435), a conclusion that is reinforced by recent meta-analyses on proactivity and its consequences within organisational settings.

Empirical evidence shows that proactivity promotes individual and organisational performance, and that it is particularly pertinent whenever aspects of work and its performance cannot be strictly formalised. In spite of this, no previous studies have examined the role of proactive behaviour in promoting training effectiveness.

The case was made in this chapter that investigating the role of proactivity in training transfer is relevant, as organisations require employees that are not just highly skilled but who can also self-direct in putting trained competencies to use. Proactive training transfer implies seizing opportunities and creating situations to apply newly acquired competencies as opposed to wait and react for transfer to be explicitly requested or just happen.

Research suggests that proactivity is a function of both a more durable and generalised proactive personality and situational factors that can motivate more specific proactive behaviours. Theory and empirical evidence would further suggest that proactive personality exerts its influence through proactive behaviours. In the event that proactive behaviour is found to affect training transfer, organisational and managerial interventions could potentially be employed for enhancing training transfer via this means. Given that proactive behaviours need to be motivated (Bindl et al., 2012), “transfer motivation is [...] likely to provide the proactive component needed for actual transfer” (Chiaburu & Lindsay, 2008, p. 201).

Proactive transfer behaviour is understood as a form of goal self-regulation that is self-initiated, change oriented, and future focused. It is characterised by acts of envisioning, planning, enacting, and reflecting, which themselves need to be motivated. However, training transfer will not be self-initiated each time; it can also be a direct response to situational and environmental cues or demands. Thus, proactive training transfer processes will account only partially for training transfer (Figure 6).
Proposition 4: Proactive transfer behaviour is positively related to training transfer.

Proposition 5: The relationship between transfer motivation and training transfer is partially mediated by proactive transfer behaviour.

Proposition 6: Proactive personality is positively related to training transfer, and this relationship is fully mediated by proactive transfer behaviour.

Figure 6. Proactive transfer behaviour as it relates to transfer motivation and training transfer

To this end it has been argued that the transfer of training is a function of transfer motivation, directly, and indirectly via proactive transfer behaviours. What remains to be investigated are the potential antecedents of such transfer motivational states. In the next chapter, I examine how the environment within someone works can affect transfer motivation, by virtue of its impact on how positively a person appraises their personal situation at work.
Chapter 5

POSITIVE COGNITIVE STATES AS ANTECEDENTS OF TRANSFER MOTIVATION

The transfer of new competencies learned can occur only after a training experience. Yet, training experiences should not be considered as isolated events but episodes in peoples’ organisational and working lives (Baldwin & Magjuka, 1997). Even so, Naquin and Baldwin (2003) argue there is little research about what constitutes “transfer-ready” employees or how they may be managed. How favourably people appraise their overall personal situation at work would appear to be an important consideration in determining how they approach any training experience and, in particular, how motivated they are to transfer the results of training. In this chapter, I first review the literature relating to a set of work-related cognitions and then examine how
these may be related to motivational states relevant for the transfer of training.

In recent times, much attention has been devoted to the study of positively-framed psychological constructs as they impact on people, work, and organisations (Christopher, Richardson, & Slife, 2008; Gable & Haidt, 2005; Linley & Harrington, 2010). The so-called ‘positive psychology’ movement developed as a reaction to what was seen by some as psychology’s preoccupation with deficit phenomena (C. Peterson, 2006), seeking instead to study the conditions and processes contributing to human flourishing and optimal functioning. The positive psychology movement has grown massively with hundreds of empirical studies, new interventions, and theories spanning emotional, cognitive, biological, societal, clinical and more perspectives (Seligman & Steen, 2005; Sheldon, Kashdan, & Stege, 2011).

Over the past decade, there has been considerable interest from organisational scholars in the application of the positive psychology paradigm to the study and management of behaviour in organisations. Based on the premise that factors that bring about a negative state (e.g. stress) are not necessarily the same factors that cause a positive state (e.g. thriving), several schools of thought have evolved that focus on the application of a positive psychology paradigm in organisational settings. One body of research (labelled Positive Organisational Scholarship) has focused primarily on the generative dynamics in institutions and organisational constructs that then lead to the development of human strength (Cameron, Dutton, & Quinn, 2003; Cameron & Spreitzer, 2011; Roberts, 2006; Spreitzer & Cameron, 2012). Another body of work (labelled Positive Organisational Behaviour) has been more concerned with individual level positive psychological concepts that are amenable to management (Bakker & Schaufeli, 2008; Luthans & Avolio, 2009; Luthans & Youssef, 2007; Luthans, 2002). A distinct focus of this latter body of research has been on malleable factors that can act as internal resources to an individual when faced with the demands and responsibilities inherent in work roles and settings. For example, constructs like authenticity, mindfulness, positive emotions, or creativity have been found to meaningfully relate to measures of performance, retention,
sustainability, innovation, or well-being (Linley & Harrington, 2010; Lopez, 2011).

One particular set of positive psychological constructs has been the subject of considerable attention from organisational behaviour researchers. This set comprises the psychological states known as hope, optimism, resilience and self-efficacy.

5.1 Hope, Optimism, Resilience, and Self-Efficacy

Stajkovic (2003, 2006) describes hope, optimism, resilience, and self-efficacy as manifestations of a person’s core confidence, pointing out that “employee’s concerns over their work are typically linked to a perceived lack of confidence to handle work demands rather than to the objective difficulty to executing such demands” (p. 1209). Luthans and colleagues (2004; Luthans & Youssef, 2004) argue that these four constructs collectively amount to psychological capital, explained as a resource that can be drawn on by the individual in response to the opportunities and challenges presented by work, and to the benefit of both themselves and the organisation.

The constructs hope, optimism, resilience, and self-efficacy are now individually described before recent literature on their potential combined functioning is reviewed. The section that follows will propose that these positive cognitive states serve as antecedents for transfer motivation.

5.1.1 Hope

Hope has been defined as “the perceived capability to derive pathways to desired goals, and motivate oneself via agency thinking to use those pathways” (Snyder, 2002, p. 249). Viewed thus, the hope construct is comprised of three elements: goals, pathways, and agency. Goals provide the targets for mental action sequences. Yet, they remain unanswered calls without thoughts that identify usable pathways to those goals. Lastly, agency is the driving component in hope, manifesting in the perceived capacity to
use one’s pathways to reach desired goals (Snyder, 2002). The duality of ‘willpower’ (agency) and ‘waypower’ (pathways) sets the construct apart from the common usage of the word hope, as in ‘hoping for the best’. Therefore, hope can be understood as a cognitive condition necessary to bring about determined goal pursuit (Oettingen & Gollwitzer, 2002). In short, hopeful individuals select specific goals they want to achieve, and figure out how to go about doing that.

Research has shown that hopeful thinking predicts eventual goal attainment (Feldman, Rand, & Kahle-Wrobleski, 2009). Higher hope has been found to be related to better academic performance, athletic performance, psychological adjustment, coping with physical illness, more sense of life meaning, and finding benefit in adversity (Rand & Cheavens, 2009). For example, findings from a 3-year longitudinal study suggest that hope uniquely predicts objective academic achievement above intelligence, personality, and previous academic achievement (Day, Hanson, Maltby, Proctor, & Wood, 2010).

Organisational research has found relationships between hope and valued outcomes such as commitment and job satisfaction (Adams et al., 2002). Through its waypower and willpower components, hope has also been shown to predict different dimensions of creativity (Rego, Machado, Leal, & Cunha, 2009). More hopeful management executives produced more, and better quality solutions to a work-related problem (S. J. Peterson & Byron, 2008), and had more profitable work units along with better employee satisfaction and retention rates (S. J. Peterson, Gerhardt, & Rode, 2006). Overall, hope plays an important role for work performance and employee well-being (Reichard, Avey, Lopez, & Dollwet, 2013). One recent study found that hope was positively associated with the development of vocational competencies at work (Wandeler, Lopez, & Baeriswyla, 2011).

5.1.2 Optimism

Optimism has been conceptualised and operationalised in two principal ways. One is based on expectancy-value theory (Vroom, 1964); describing the
expectations people hold about the future. Regardless of present circumstances, optimists anticipate that future events will be positive in nature and negative events scarce (C. Peterson, 2000). Another way optimism has been conceptualised involves people’s explanatory style; how individuals explain the causes of events that happen to them. This attribution style deems positive events as personal, permanent, and pervasive, and negative events as external, temporary, and situation-specific (Seligman & Schulman, 1986). Both approaches are conceptually distinct (Carver, Scheier, & Segerstrom, 2010), yet they shape the nature and level of goals individuals set and associated striving behaviour (Forgeard & Seligman, 2012).

Being optimistic is described as allowing individuals “to acquire resources to pursue goals, be persistent, and be open to opportunities” (p. 115; Forgeard & Seligman, 2012). Some have argued that high levels of optimism can be too much of a good thing (Armor & Taylor, 1998; Schneider, 2001; Weinstein & Klein, 1996) as for example a strong positive bias would lead to greater persistence which could cause extra goal conflict (Segerstrom & Nes, 2006) or an unwillingness to disengage from impossible tasks (Aspinwall & Richter, 1999). However, people high in optimism were actually found to disengage more quickly from (truly) unsolvable tasks in order to allocate effort to potentially solvable tasks. As a result, optimists had a higher overall performance (Aspinwall & Richter, 1999). Yet, researchers have also identified scenarios in which too much optimism can have drawbacks, such as in gambling behaviour (Gibson & Sanbonmatsu, 2004) or entrepreneurs decision making (Hmieleski & Baron, 2009). This form of optimism is mainly associated with people being unrealistic as a result of their comfortable status quo (Heine & Lehman, 1995). Optimism in the service of higher efforts and standards likely leads to good outcomes (Forgeard & Seligman, 2012; Kirk & Koeske, 1995).

Empirical research links higher optimism to higher emotional well-being, more effective coping strategies, better physical health, greater success in school and on the playing field, as well as likeableness and other advantageous aspects of interpersonal relationships (Carver et al., 2010; Forgeard & Seligman, 2012). Research in optimism’s application to the
workplace has shown desirable effects, relating to higher productivity and lower turnover in insurance sales agents (Schulman, 1999; Seligman & Schulman, 1986), less distress symptoms and burnout, more affective commitment and job satisfaction (Kluemper, 2009), together with increased individual and organisational performance (Green Jr, Medlin, & Whitten, 2004).

5.1.3 Resilience

Resilience can be understood as reduced vulnerability to environmental risk experiences, the overcoming of a stress or adversity, or a relatively good outcome despite risk experiences (Rutter, 2006). Although there are varying conceptions (Luthar, Cicchetti, & Becker, 2000; Rutter, 2012), resilience at the individual level has been mainly characterised as the capability to cope successfully in the face of significant change, adversity, or risk (Masten, 2001). It was also described as “a capacity to rebound or bounce back from adversity, uncertainty, conflict failure or even positive change, progress and increased responsibility” (Luthans, 2002, p. 702). In addition to these conceptualisations describing means of recovery, resilience is equally noted to reflect the quality of sustainability (Reich, Zautra, & Hall, 2010), which portrays the capacity to absorb disturbances before straining experiences transpire and to continue on in this face of adversity (Bonanno, 2004). Therefore, resilience may also be conceived as the capacity to endure stress (Staal, Bolton, Yaroush, & Bourne, 2008).

While it is known that the capacity of resilience often develops through exposure to adversity (i.e. “people rise stronger from the ashes”, Luthar et al., 2000; Rutter, 2006), the mechanisms of action that actually serve to account for this ability are not well understood (Staal et al., 2008). Concepts associated with resilience include processes of forgiveness, resourcefulness, locus of control, adaptive distancing, mindfulness, humour (Benard, 2004), temperament, meaning of life, parenting quality, or effective schooling (Masten, Cutuli, Herbers, & Reed, 2009). Whether these concepts promote resilience, describe resilient behaviour, are resilience, or are outcomes of resilience, depends on the theoretical lens applied (Luthar et al., 2000;
Rutter, 2006). All included, after disruptive and demanding events, people with high resilience display a greater capacity to quickly regain psychological, physiological, and social equilibrium (Zautra, Hall, & Murray, 2010).

In general, although resilient people face no less of a challenge than others when they confront difficult change, research has found they tend to regain their balance faster, maintain a higher level of productivity, are physically and emotionally healthier, and generally rebound from the demands of change even stronger than before (Diehl & Hay, 2010; Friborg, Barlaug, Martinussen, Rosenvinge, & Hjemdal, 2005; Metzl, 2009). The bulk of empirical knowledge about resilience comes from developmental psychology and research on vulnerable children. For instance, resilient adaptation among at-risk children during infancy and toddlerhood was found to predict competent functioning during the elementary school years (Egelanda, Carlson, & Sroufe, 1993). Similarly, children found to have greater resilience maintained high functioning in everyday life across a period of over 30 years (Werner, 1995, 2013). Albeit less researched, resilience beyond childhood is also found to lead to positive adaptation by helping adults sustain access to daily positive emotions that lead to recovery from stress (Ong, Bergeman, & Boker, 2009). Individual resilience is little explored in the context of organisations and work, and so far has been found to relate favourably to job dissatisfaction, turnover intention, burnout, coping skills, and performance (Beckett, 2011; Everly, Smith, & Lating, 2009; Luthans & Avolio, 2005). Only one study was identified that links resilience to aspects of learning, correlating it positively with persistence towards goal achievement (Kemp, 2001).

5.1.4 Self-Efficacy

Self-efficacy refers to a person’s belief that one can generate necessary means in order to perform well in a particular situation (Bandura, 1998). More specifically, self-efficacious thoughts appraise the ability to accomplish goals via existing resources such as knowledge, skills, or energy to successfully execute required actions (Bandura, 2011). Individuals with low self-efficacy conceive challenges more arduous than they really are and
subsequently reside in the status quo. Alternatively, people who perceive themselves as highly efficacious activate attention and energy to set and pursue goals (Bandura, 2001). Moreover, according to Bandura (1997) high self-efficacy leads to heightened goal striving when attainment of the goal is challenged. Essentially, those believing in their own abilities do better.

Self-efficacy is arguably the most prominent construct derived from social-cognitive theory and has been widely studied. Cumulative empirical evidence suggests positive causal relationship between efficacy expectations and goal attainment in arrays such as sport performance (Klassen & Chiu, 2010), computer usage (Compeau, Gravill, Nicole Haggerty, & Kelley, 2006), exercise behaviour (McAuley, 1993), and academic attainment (Zimmerman, Bandura, & Martinez-Pons, 1992). Efficacy beliefs were also found to have extensive favourable impact on various work-related aspects including leadership (G. Chen & Bliese, 2002), team or group performances (Gully & Incalceterra, 2002; Stajkovic, Lee, & Nyberg, 2009), job satisfaction (Klassen & Chiu, 2010), career satisfaction and salary (Abele & Spurk, 2009), and stress and burnout (Schwarzer & Hallum, 2008). Finally, two meta-analytic studies concur that the higher the self-efficacy, the better the work and performance outcomes (Sadri & Robertson, 1993; Stajkovic & Luthans, 1998). However, the most recent meta-analysis notes that this effect is substantially reduced when more distal variables such as general mental ability, personality, or prior experience are entered (Judge, Jackson, Shaw, Scott, & Rich, 2007).

As identified in chapter 2, out of the four constructs reviewed above, self-efficacy is the only one that has received considerable attention in learning and training research. Whether acquired before or during training, higher self-efficacy leads to greater participation, more motivation to learn, and better learning outcomes (Baldwin & Magjuka, 1997; G. Chen, Gully, Whiteman, & Kilcullen, 2000; Colquitt et al., 2000; Matthieu et al., 1992; Quiñones, 1995). In line with theory, individuals reporting higher self-efficacy work harder and persist longer during learning activities (Phan, 2011), are more likely to perform the tasks they were trained for, including more complex and difficult tasks (Ford et al., 1992). Self-efficacy has been
linked to different posttraining behaviours (Gaudine & Saks, 2004; Matthieu et al., 1992), including skill maintenance (Stevens & Gist, 1997), and has also been found to be important for the transfer of training (Gegenfurtner, 2011; Tai, 2006).

5.1.5 Combined Hope, Optimism, Resilience & Self-Efficacy

The review to date has treated hope, optimism, resilience, and self-efficacy as conceptually representing discrete constructs, and many scholars concur with this view (Aspinwall & Leaf, 2002; Luthans, 2006; Shorey, Snyder, Rand, Hockemeyer, & Feldman, 2009; Snyder, 2002). In fact, in the literature, the constructs originated independently from each other, describing different psychological mechanisms. For instance, individuals can believe that a certain behaviour will produce a particular outcome (i.e. optimism; Scheier & Carver, 1985), but may not believe they can perform that behaviour (i.e. self-efficacy; Bandura, 1977).

Research has also demonstrated empirically that the constructs have discriminant validity with studies differentiating hope from optimism (Bailey, Eng, Frisch, & Snyder, 2007; Bruininks & Malle, 2006; Bryant & Cvengros, 2004; Carvajal, Clair, Nash, & Evans, 1998; Huprich & Frisch, 2004; Rand, Martin, & Shea, 2011; Rand, 2009; Shorey, Little, Snyder, Kluck, & Robitschek, 2007), the above from self-efficacy (Carifio & Rhodes, 2002; Davidson, Feldman, & Margalit, 2012; Magaletta & Oliver, 1999), and the above from resilience (Luthans, Avolio, & Norman, 2007).

In spite of this, scholars have also argued that all four constructs share an underlying agentic capacity and therefore have sought to either combine them into aggregate constructs or treat them as first-order manifestations of a higher-order construct. For example, Stajkovic (2003, 2006) used the term core confidence to describe a latent or second-order construct with hope, optimism, resilience, and self-efficacy as its first-order manifestations. About the same time, Luthans et al. (2004; Luthans & Youssef, 2004) assembled the same constructs into a composite variable they termed psychological capital (later PsyCap). While core confidence has received very little attention as a
construct, PsyCap has amassed a growing body of literature which is now discussed.

After about one decade of accumulated PsyCap research, the authors of the only meta-analysis in this area note “significant positive relationships between PsyCap and desirable employee attitudes (job satisfaction, organisational commitment, psychological well-being), desirable employee behaviors (citizenship), and multiple measures of performance (self, supervisor evaluations, and objective). There was also a significant negative relationship reported between PsyCap and undesirable employee attitudes (cynicism, turnover intentions, job stress, and anxiety) and undesirable employee behaviors (deviance)” (Avey, Reichard, Luthans, & Mhatre, 2011, p. 127).

On the one hand, these findings encourage continued research about the combined influence of hope, optimism, resilience, and self-efficacy in relation to work-related phenomena, such as the transfer of training. On the other hand, the PsyCap literature offers little analysis of the function of the individual component constructs (hope, optimism, self-efficacy, resilience) for variables of interest. Rather, it is assumed that each of the component states influence outcomes in the same manner and to a similar degree.

This may be the result of how the designated standard measure of PsyCap, derived from the PsyCap Questionnaire (PCQ), was constructed and introduced into the literature. Published procedures for analysis and scoring involve calculating PsyCap as an average score (Luthans et al., 2007). A rationale for why PsyCap should be analysed as an aggregated average of items tapping the four psychological states instead of as a factor score weighted composite (as suggested by Stajkovic, 2006) has not been articulated. Yet, the benefits of higher-order latent constructs have been demonstrated elsewhere, for example when researching emotional intelligence as multi-factorial phenomena (Brackett & Mayer, 2003; Ciarrochi, Chan, & Caputi, 2000; Law, Wong, & Song, 2004; Petrides & Furnham, 2000). Such an approach would also benefit research about combined hope, optimism, resilience, and self-efficacy; for instance, when using the imbalanced PCQ-12 scale (Luthans et al., 2007; Luthans, Youssef, &
Avolio, 2006a) in which optimism is represented by only two items whereas resilience and self-efficacy are reflected by three items each, and hope by four items.

One review found that only 13 of 24 studies employed PsyCap as a latent variable, with just one that had attempted to confirm the construct validity of the four PsyCap dimensions (Dawkins, Martin, Scott, & Sanderson, 2013). Indeed, this study (Rego, Marques, Leal, Sousa, & Cunha, 2010) showed that individual job performance was better predicted when the PsyCap components were considered separately, than when aggregated into an overall PsyCap factor. Moreover, the authors also found that the hope construct with its facets of agency and pathways loaded on two factors and a five factor model (with hope’s two dimensions considered separately) produced higher validity than a uni-dimensional PsyCap variable or the presumed four factor model.

Adding to the confusion, Stajkovic, Lee, Greenwald, and Raffiee (2013) have recently argued that the constructs hope, optimism, resilience, and self-efficacy “may all be influenced by the same, common core belief that simply manifests itself in life in linguistically different ways” (p. 3). In three steps the authors examined convergent, discriminant, and incremental validities among the four variables. First, by meta-analysing bivariate correlations from 133 studies they found that the average correlation between hope, optimism, resilience, and self-efficacy was $r = .60$ (ranging from $r = .55$ to .67). Second, using confirmatory factor analysis for data collected from three independent samples they found convergent validity among the four indicator measures of $r= .51$, .62, and .60. Third, by employing multi-trait-multi-method approaches they found discriminant validity among the four manifest variables was low, as was their incremental validity. Individually, hope, optimism, resilience, and self-efficacy accounted for an average incremental variance of 11% when the common core factor was controlled for, ranging from .00 to a maximum of .05 on any of the outcome variables for any of the four positive-framed constructs. Accordingly, Stajkovic et al. (2013) reason that hope, optimism, resilience, and self-efficacy appear to be manifest variables of a higher order latent construct.
In summary, it appears that scholars have not yet fully understood how to best model and measure positive thoughts and beliefs that let humans set goals, be certain, cope, and strive for achievement. The different approaches as summarised above can certainly be helpful in advancing scientific inquiry. However, it is not the purpose of the present research to find definitive answers to these controversies. What is important is to be aware that currently there is no agreed conceptualisation and operationalisation for the combined investigation of hope, optimism, resilience, and self-efficacy. Based on reviewed theory, the present research consequently argues that these four constructs are distinct, and at the same time acknowledges that this must be empirically supported in subsequent studies. It is now important to understand how the positive cognitive states relate to the transfer of training.

5.2 Positive Cognitive States as Source of Transfer Motivation

Research on the role played by positive psychological constructs in determining training effectiveness is very limited, yet promising. Kim and colleagues (2012) investigated whether a learner’s positive perception of self could boost learning motivation and performance. They found that fundamental evaluations of one’s self-worth, competence, and capabilities – or simply core self-evaluations – affect learning motivation and performance beyond general mental ability and conscientiousness. The authors argued that their findings implied that training effectiveness could be improved by boosting learners’ core self-evaluations. Yet, they also suggested that this could only happen over the very long term because core self-evaluations are considered fairly stable.

In contrast, hope, optimism, resilience, and self-efficacy are considered open to development (Luthans & Youssef, 2004; S. J. Peterson, Luthans, Avolio, Walumbwa, & Zhang, 2011; Stajkovic, 2006). The literature shows that described cognitions are characterised by both more general or trait-like orientations and more specific or state-like thoughts and beliefs that affect how people appraise and shape their experiences. Dynamic properties are attributed to hope (S. J. Peterson et al., 2006; Snyder et al., 1991; Snyder, Sympson, & Ybasco, 1996), optimism (Carver et al., 2010; Green Jr et al.,
2004; Kluemper, 2009), resilience (Jacelon, 1997; Kim-Cohen, Moffitt, Caspi, & Taylor, 2004; Ong et al., 2009), and self-efficacy (Bandura, 1997, 2006; G. Chen et al., 2000; Scholz, Doña, Sud, & Schwarzer, 2002).

Scholars have recently suggested that hope, optimism, resilience, and self-efficacy could help facilitate human resource development (Ardichvili, 2011; G. M. Combs, Luthans, & Griffith, 2009) via their influence on learning and transfer. Two recent unpublished doctoral dissertations represent the only empirical accounts in this domain. They examine relationships between PsyCap and training effectiveness and are reviewed next. Following this, the potential for work-related hope, optimism, resilience, and self-efficacy to act as antecedents of transfer motivation will be discussed.

5.2.1 PsyCap and Training Effectiveness

Griffith (2010) conducted two studies and found significant positive correlations between PsyCap and both pre-training motivation (r=.42 to .54) and training transfer motivation (r=.28 to .44). Pre-training motivation was found to partially mediate the relationship between PsyCap and training transfer motivation, with the latter predicting overall job performance (.55), job engagement (.33), and job satisfaction (.42). One of the studies also employed an intervention aiming to increase levels of PsyCap in a treatment group via a standardised computer-based activity of 37 minutes length. This intervention drew on previous PsyCap development activities (Luthans, Avolio, Norman, & Combs, 2006) and intended to make training goals more salient by introducing PsyCap concepts to demonstrate how each could be utilised to reach those goals. The study claims that this intervention provided participants with the opportunity to focus on work-related goals in the company, which simultaneously requires their cognitive integration of the key concepts presented in the training. However, this PsyCap development did not noticeably influence motivational levels relating to training when compared with a control group. According to Griffith, contextual and motivational factors alongside extra-role demands may have interacted with experimental conditions so that the intervention was rendered ineffective.
West (2012) found a positive significant correlation between PsyCap and training transfer motivation for individuals trained in skills relating to computer applications, administration, management, and communication. What is of most interest however, is that optimism (r = .53) had a stronger association with training transfer motivation than did the composite PsyCap (r = .49). That is, the composite construct was not found to explain more training transfer motivation than its component constructs. This suggests the value of examining the four positive constructs individually, and not simply as an aggregate.

Both scholars have to be commended for commencing empirical research on the relationship between the positive cognitive states and training effectiveness. However, despite their usefulness in highlighting the potential role of positive psychological states in a training context, both these studies have significant limitations. First, neither study provides sufficient clarity about the psychological mechanisms by which PsyCap has its effects on outcome variables. This leaves the need for clearer specification about the function of hope, optimism, resilience, and self-efficacy for training transfer. Second, the cross-sectional studies in both Griffith (2010) and West (2012) rely on small samples (N = 54; N = 74) and both authors argue that relationships are thus assessed via basic correlation analysis only instead of potentially more meaningful regression analysis involving variables of interest, and albeit hypotheses and figures provided suggest directionality. Third, in his longitudinal study Griffith (2010) tested his hypotheses via a path model, which did not appear to provide an acceptable fit to the data (e.g. CFI = .775; RMSEA = .207). Fourth, both authors made no attempt to examine the construct validity of PsyCap.

Taken together, those studies provide some initial empirical evidence to suggest that positive cognitive states may serve as determinants of transfer motivation and subsequent transfer behaviours. Next the case is made for positive cognitive states representing antecedents for transfer motivation.
5.2.2 Hope, Optimism, Resilience & Self-Efficacy and Transfer Motivation

Cognition is inherent in motivation (Locke, 1991) and so the basic premise is that state-like hope, optimism, resilience, and self-efficacy embody thoughts and beliefs regarding one’s work experience that reciprocally influence effort expenditures on goals related to work. In other words, individuals do not have a direct read on reality, but their information about the world of work is appraised through their cognitive system, which may be more or less accurate (Ellis & Grieger, 1977 in Shatte & Seligman, 2005). Therefore, individuals can be considered self-regulating agents who are not only products but also producers of their environment and experiences.

Given that the transfer of training represents an integral work experience, the accurate appraisal of opportunities and challenges at work has considerable functional value for training transfer. Accordingly, low levels of hope, optimism, resilience, and self-efficacy in relation to work may offset the existing potential to transfer and perform on the job the competencies that were learned via training. Conversely, high levels of these positive psychological states may lead to favourable outcomes such as the successful initiation and use of new competencies at work.

The consequences of hope, optimism, resilience, and self-efficacy have cognitive as well as affective qualities, giving rise to renewed thoughts and affect (Benetti & Kambouropoulos, 2006; Isen, 2000; Lackaye et al., 2006; Marshall, Wortman, Kusulas, Hervig, & Vickers, 1992; Ong et al., 2006; S. C. Segerstrom, Taylor, Kemeny, & Fahey, 1998). In other words, people think and feel about work-related matters. Accordingly, it is argued that the more distal positive psychological states hope, optimism, resilience, and self-efficacy have the potential to affect the more proximal cognitive and affective qualities of transfer motivation, which, as prior theorised, determines transfer goal setting and striving.

Hope would appear to have considerable potential to affect transfer motivation. The interplay of pathway and agency explains why employees with high levels of hope have been found to persist in their particular goal strivings and finding alternative routes to attain work-related goals when
usual routes were blocked (Adams et al., 2002). Accordingly, people with high levels of hope engage in increased pathway thinking at work, thereby generating multiple avenues for realising transfer goals which increases transfer motivation. People with higher levels of hope have also been shown to be more creative at work, conceiving more novel and more useful ideas as well as championing their ideas (Rego et al., 2009; Rego, Sousa, Marques, & Cunha, 2012). Such increased idea generation may lead to improved schemes about when and where to apply new knowledge and skills, essentially more specific transfer goals from which to choose from, thereby increasing the motivation to transfer. Hope has also been related to emotional reactivity, whereby low levels of hope lead to apathy, a state in which people give up all goal pursuits (Rodriguez-Hanley & Snyder, 2000). Conversely, those people with high levels of hope experience less negative emotions when their goals are blocked (Snyder, LaPointe, Crowson, & Early, 1998). A high-hope person should thus have a sense of positive zest and thus feel more energised to transfer training.

Optimism is defined in terms of favourable expectancies for the future (Carver et al., 2010), whereby those with higher levels of optimism think and also feel positively about their prospects at work (Erez & Isen, 2002; C. Peterson, 2000). Optimism is thus a goal-directed construct with motivational qualities. Accordingly, if individuals believe that achieving goals at work is feasible then specific goals that may be valued are indeed pursued. Empirical research has also shown that more optimistic people experience less stress and burnout as well as greater emotional well-being and affective commitment (Carver et al., 2010; Forgeard & Seligman, 2012; Kluemper, 2009). This is particularly relevant when the achievement of work goals is uncertain, such as when attempting to apply a new competence until it becomes a routine. If optimistic expectancy is low, people at work are less likely to feel positive about or committed to transfer goals. As a result, particular transfer goals may never be set and efforts towards achieving those goals may be reduced. In contrast, people high in optimism at work believe good things are bound to happen, setting free the transfer motivation needed to pursue transfer goals, which is more likely to lead to the realisation of those goals.
In the present research, resilience is understood as the capacity to endure stress and overcome setbacks (Masten, 2001; Reich et al., 2010). This is important because perceived failures often result in negative affect which hinders goal striving (Schwarz, 2000; Subramaniam, Kounios, Parrish, & Jung-Beeman, 2009). Resilience at work thus provides the mechanisms by which individuals sustain their focus on established goals in the face of ongoing or potential adversity and refocus on meaningful goals if that focus was lost. For instance, initiating and maintaining newly trained competencies at work generates mental and physical demands in addition to the usual work load. Moreover, failure and setbacks are likely when attempting something new at work, such as in the transfer process when executing a new competence. Resilient people think but also feel positively through adverse situations at work (Forgeard & Seligman, 2012) and thereby can sustain transfer motivation until transfer goals are achieved.

Finally, the effect of self-efficacy on transfer motivation is based on the judgements about the ability and controllability to execute courses of action for achieving goals at work (Bandura, 1991). This involves more general appraisal of personal resources as they relate to the work experience as well as anticipatory estimates of efforts involved in attaining transfer goals. The degree of consistency then affects goal setting and subsequent effects on persistence in goal striving for goal achievement (Gist, Mitchell, & Mitchell, 2010). Accordingly, transfer motivation is a result of the broader conviction that one is generally able to attain work goals. Therefore, people with low levels of self-efficacy at work likely exert little effort when given the opportunity for applying new skills and knowledge. Conversely, when people view their work experience as controllable, then this will mobilise transfer motivation for applying new skills and knowledge.

5.3 Integration and Conclusion

This chapter proposed that four positive-framed cognitive constructs (hope, optimism, resilience, and self-efficacy) act as antecedents for transfer motivation and subsequent training transfer (Figure 7).
To begin, the positive psychology paradigm was reviewed as this body of research seeks to identify factors that constitute human flourishing and optimal functioning. Although interest is increasing for exploring the role of positive psychology for work outcomes, such research in relation to training effectiveness has been quite limited. Yet, theory and evidence suggest that investigating positive-laden constructs in this context is warranted.

Four cognitive mechanisms were identified that affect how people appraise their overall personal experience at work and that determine goal setting, striving, and attainment. Empirical studies show that hope, optimism, resilience, and self-efficacy each can play a favourable role for work-related outcomes. Given the integral nature of training as work episodes, this would suggest these four constructs may also represent important antecedents of training transfer, describing an individual’s ‘transfer readiness’. Hope, optimism, resilience, and self-efficacy relating to work help generate the motivation to transfer learned competencies, which in turn determines subsequent training transfer.

Furthermore, the schemes of thought and beliefs these constructs represent are considered malleable and therefore hope, optimism, resilience, and self-efficacy would allow “managing transfer before learning begins” (Naquin & Baldwin, 2003). Moreover, given the evidence on the positive effects these positive cognitive states have on work-related variables, practically it appears more efficient to act upon and manage those personal capacities that impact several positive outcomes at work than upon another one that potentially impacts training transfer only.

As the collective role of hope, optimism, resilience, and self-efficacy has gained considerable attention, the promising and conflicting developments of the unifying constructs PsyCap and Core Confidence were also discussed. However, evidence on how to treat the four cognitive states remains inconclusive. Consequently, the present research understands the four positive cognitive states as conceptually distinct; yet, for good scientific and pragmatic reasons, hope, optimism, resilience, and self-efficacy are modelled as first-order manifestations of an individual’s overall core confidence.
In view of the above, a person must know what to do at work, how to do it, and have the will to do it (hope). A person must also believe that efforts sooner or later lead to desired outcomes at work (optimism). A person must sustain focus to persist at work if obstacles arise, and refocus to bounce back from setbacks (resilience). A person must further have sufficient conviction that one can draw on sufficient resources to actually handle demands at work (self-efficacy). This core confidence will affect transfer motivation and ultimate training transfer. Thus it is proposed that:

**Proposition 6:** Core confidence, a higher order construct comprising hope, optimism, resilience and self-efficacy, is positively related to transfer motivation.

**Proposition 7:** The relationship between core confidence and training transfer is fully mediated by transfer motivation.

![Figure 7. Positive cognitive states (core confidence) as antecedents of transfer motivation and subsequent training transfer](image)
CHAPTER 6

STUDY 1: MEASURE DEVELOPMENT AND CONSTRUCT VALIDATION FOR TRAINING-RELATED MOTIVATION

6.1 Aim & Hypotheses

Chapter 3 conceptualised training-related motivation (TRM) as a multi-dimensional and multi-stage construct. This chapter presents the findings of a study designed to test a series of hypotheses derived from this conceptualisation. In doing so, new measures are developed that capture these motivational elements at different stages in the training process.
It was earlier argued that three interrelated motivational stages are relevant in the training process: participation motivation, learning motivation, and transfer motivation. Each represents, in turn, a motivational product of three motivational processes that shape individual's goal setting and striving: can-do, reason-to, and energised-to motivation.

**H1:** Can-do, reason-to, and energised-to emerge as distinct elements of a) participation motivation, b) learning motivation, c) transfer motivation.

It was also proposed that outcomes at each motivational stage influence subsequent stages of the process: that is to say, participation motivation (PM) before training begins affects learning motivation (LM) during training, which in turn shapes transfer motivation (TM) after training. Therefore, PM represents the independent variable, LM the mediator, and TM the dependent variable. No empirical research has examined these interrelationships. Moreover, the discreteness of can-do, reason-to, and energised-to dimensions within each stage would suggest that the motivational trajectories over time are distinct as well.

**H2:** Can-do learning motivation mediates the relationship between can-do participation motivation and can-do transfer motivation.

**H3:** Reason-to learning motivation mediates the relationship between reason-to participation motivation and reason-to transfer motivation.

**H4:** Energised-to learning motivation mediates the relationship between energised-to participation motivation and energised-to transfer motivation.

Next, Figure 8 summarises and illustrates all these hypotheses.
Figure 8. Hypothesised path model for exploring trajectories of training-related motivation
6.2 Sample & Procedure

In order to develop measures of PM, LM, and TM, I followed procedures outlined by Netemeyer, Bearden and Sharma (2003), Hinkin (2005), and DeVellis (2011). Briefly, initial item generation was followed by face, expert, and content validation procedures. The resultant item sets underwent a pilot test and were ultimately subjected to testing on development samples. Subsequent exploratory factor analysis identified the best items and reduced scale length. An independent sample was used to establish the psychometric properties of the new measures and test the hypotheses via confirmatory factor analysis and structural modelling.

6.2.1 Item Generation

Sampling the theoretical domain was based on a 3x3 latent construct grid (Figure 9). Each item generated had to be associated with one of the motivational stages of participating, learning, or transferring as well as with one of the motivational dimensions of can-do, reason-to, energised-to.

![Figure 9. The training-related motivation grid]
I generated the initial item pool as follows. I first systematically reviewed the literature to identify existing measures as they pertain to training and development motivation (Carlson & Bozeman, 2000; Chiaburu & Lindsay, 2008; Chiu & Wang, 2008; Elliott & Church, 1997; Facteau et al., 1995; Gegenfurtner, Festner, et al., 2009; Kossek & Roberts, 1998; Machin & Fogarty, 1997; Matthieu et al., 1992; Naquin & Holton III, 2003, 2002; Noe & Schmitt, 1986; Noe & Wilk, 1993; Ruona et al., 2002; R. Smith et al., 2008; Warr & Bunce, 1995; Weinstein & Klein, 1996; Wigfield, Cambria, & Eccles, 2012; Zaniboni et al., 2011). Items were included if they were judged to be consistent with any of the latent constructs defined above. To reduce conceptual redundancies, similar items were grouped and merged into a single item. Following this, I developed additional items consistent with the conceptual definitions to ensure that the initial item pool fully covered the content domain theorised.

With the majority of all items positively worded, each content domain also included a few negatively worded items to “keep the respondent honest” (Netemeyer et al., 2003), and to enable possible response bias, in the form of acquiescence or affirmation during data collection, to be identified (Price & Mueller, 1986).

All items were designed as general measures to maximise their relevance for a wide variety of learners and training experiences. To illustrate, the scales would need to be applicable to assessing training-related motivation for a one-year leadership development program, for a brief eLearning training about software functions, as well as for cohorts with varying degrees of cognitive ability and education level.

In accordance with that reality I crafted consistent item stems, discarded context- or domain-limiting terminology, and applied uniform and simple vocabulary (e.g. training program, course, development session, intervention etc. became training). The quality of item wording and framing was enhanced by making use of the TACT framework (Fishbein & Ajzen, 1975). It suggests writing items that are composed of a Target, an Action, a Context, and a Time. Conceptual and semantic ambiguity was further refined as a result of discussions with two senior scholars and two professional training
experts. A readability test (Flesch-Kincaid Grade Level; Kincaid, 1975) available via Microsoft Word 2010 approximated the comprehension difficulty across all items with a score of 7.6, which suggests that 8th grade students can fully understand the items.

All of the above occurred under the premise of retaining as many theoretical facets of the content domain as possible. Care was taken to ensure that each content area had an adequate sampling of items. The resulting initial pool consisted of 180 items in three sets of 60 items aligned for PM, LM, and TM.

6.2.2 Content Validation

To maximise content validity in the initial item pool, I adapted an item-definition matching process employed by MacKenzie, Podsakoff and Fetter (1991). 10 naive respondents (i.e. English-speaking graduate students with varying nationalities, mother languages, and discipline associations) were asked to match each item with one of the provided corresponding construct definitions. Items that respondents determined not to fit any of the definition were labelled unclassified.

Specifically, respondents physically sorted one item at a time into one of ten possible baskets made up of the 3x3 definition grid plus an unclassified basket. The first step involved sorting items along the psychological states (vertical axis), containing can-do, reason-to, and energised-to motivation. The second step included sorting items along the motivational training stages (horizontal axis), comprising stages of participation motivation, learning motivation, and transfer motivation. Each participant processed the full item set in random order, further increasing the efficacy of the sorting process technique. Individual item allocations for both dimensions were captured and the agreement between respondents calculated.

Hinkin (2005) suggests an agreement index (i.e. the percentage of respondents who correctly classify an item) of 75% or more for further inclusion of an item. Given that items had to be sorted twice within a two dimensional framework, I adopted a decision rule to retain only those items
that had a total agreement index of 56% (= .75 x .75) or higher. This cut-off is in line with methodological suggestions by Netermeyer et al. (2003) to “err on the high side” in the early stage of scale development so as to have a larger rather than a smaller item pool to be carried over for subsequent developmental samples. As a result of the above procedures, 43 items were deemed conceptually inconsistent and consequently discarded, leaving 137 items.

6.2.3 Pilot Test

A pilot administration of the remaining 137 items to a purposeful target audience (adult trainees, N=25, 2 days of teaching-related software training) gave further indication about the adequacy and clarity of the items and the feasibility of the self-report survey format (Iarossi, 2006). In other words, how able and comfortable do people feel responding to these items on a Likert scale: (1) Strongly disagree, (2) Disagree, (3) Neither disagree or agree, (4) Agree, (5) Strongly agree.

I chose a Likert-type scale as it is the most frequently used in survey questionnaire research (Cook et al., 1981) and was found the most useful in behavioural research (Kerlinger, 1986). I decided to use a 5-point Likert-type scale as Coefficient alpha reliability with Likert scales has been shown to increase up to the use of five points before levelling off (Lissitz & Green, 1975).

The generic lead-in phrase is: “How you may think about yourself right now in regards to this training: Please indicate your level of agreement or disagreement with each statement to most accurately represent your view.” The trainees in a classroom setting were asked to respond to three printed questionnaires before (PM), during (LM), and after (TM) the training and invited to flag problematic items or highlight response difficulties. Additional written comments and brief follow-up interviews resulted in 3 items being reworded and 8 items being rejected.
6.2.4 Development Sample

The remaining 129 items were now tested on a development sample for subsequent exploratory factor analysis and to refine the scales. Given the large number of 43 items each for PM, LM, and TM, three independent but similar samples were used to pre-empt survey fatigue. The samples were deliberately constructed to comprise heterogeneous trainee cohorts. Participants were trainees attending one of a number of work training courses offered by a large Australian training provider. The training courses lasted between 1 and 5 days and covered a wide range of competencies, including leadership, human resources, project management, sales, marketing, creativity, communication, accounting, legal matters, occupational health and safety, office software, and specialist IT competencies. The courses offered training in both open and closed competencies (see Yelon & Ford, 1999) at varying levels of sophistication to working age individuals employed in a range of occupations, organisations and industries.

To minimise response set bias, items were randomly arranged on a printed questionnaire which was administered to trainees in a classroom setting either at the beginning (PM), mid-point (LM), or end (TM) of a training course. In each case, the trainer read a description of the research project with instructions for participation; questionnaires were then presented as part of the training program. Responses were completely anonymous, and participants were allowed to withdraw if they wished.

This resulted in response sets of N = 393 for PM, N = 338 for LM, and N = 374 for TM. These large sample sizes produce good item-to-response ratios of 1:9.1, 1:7.9, and 1:8.7 respectively (Hinkin, 1998). The three samples showed comparable demographic characteristics (Table 2). An exploratory factor analysis and item reduction resulted in 9 items each for PM, LM, and TM (described next in 6.3.1).
6.2.5 Validation Sample

An independent sample was subsequently used to confirm factor structure and test the hypotheses. Thus, a longitudinal study was designed whereby learners were asked to complete a printed questionnaire and respond to the remaining PM items before course beginning at arrival (T1), to the LM items at the mid-point of the course (T2), and to the TM items at the very end of the course (T3).

The 17 courses selected were offered by a major Australian training provider and had to have an instruction period of two full days or more to ensure data efficacy through sensible distribution of survey load. Competencies trained related to leadership, finance, negotiation, communication, people and performance management, and human resources.

At the beginning of each course the trainer read a description of the research project with instructions including the option to withdraw at any time if anyone had objections to the study. While complete confidentiality was assured, responses had to be matched over time, and so participants

Table 2. Study 1: Characteristics of Independent Development Samples

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Sample 1 (PM)</th>
<th>Sample 2 (LM)</th>
<th>Sample 3 (TM)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>393</td>
<td>338</td>
<td>374</td>
<td>368.3</td>
</tr>
<tr>
<td>Distinct training courses</td>
<td>32</td>
<td>22</td>
<td>34</td>
<td>29</td>
</tr>
<tr>
<td>Gender (male)</td>
<td>50.6 %</td>
<td>52.9 %</td>
<td>54.8 %</td>
<td>52.8 %</td>
</tr>
<tr>
<td>Age (in years)</td>
<td>37.0 (11.1)</td>
<td>36.2 (10.4)</td>
<td>35.1 (9.3)</td>
<td>36.1</td>
</tr>
<tr>
<td>Total work experience (in years)</td>
<td>17.4 (10.8)</td>
<td>17.2 (10.3)</td>
<td>16.2 (10.5)</td>
<td>16.9</td>
</tr>
<tr>
<td>Organisational tenure (in years)</td>
<td>3.0 (5.1)</td>
<td>4.5 (5.8)</td>
<td>5.1 (6.1)</td>
<td>4.2</td>
</tr>
<tr>
<td>Job tenure (in years)</td>
<td>2.7 (3.6)</td>
<td>2.3 (3.1)</td>
<td>2.9 (4.2)</td>
<td>2.7</td>
</tr>
<tr>
<td>Full-time employment</td>
<td>93.0 %</td>
<td>96.1 %</td>
<td>93.1 %</td>
<td>94.1 %</td>
</tr>
</tbody>
</table>

Education level

<table>
<thead>
<tr>
<th></th>
<th>Sample 1 (PM)</th>
<th>Sample 2 (LM)</th>
<th>Sample 3 (TM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No High School Graduation</td>
<td>11.1 %</td>
<td>9.5 %</td>
<td>9.4 %</td>
</tr>
<tr>
<td>High School Graduation</td>
<td>28.0 %</td>
<td>24.5 %</td>
<td>40.6 %</td>
</tr>
<tr>
<td>University Diploma/TAFE</td>
<td>23.8 %</td>
<td>31.2 %</td>
<td>12.8 %</td>
</tr>
<tr>
<td>Bachelor Degree</td>
<td>20.6 %</td>
<td>20.5 %</td>
<td>25.3 %</td>
</tr>
<tr>
<td>Honours Degree</td>
<td>7.4 %</td>
<td>6.7 %</td>
<td>5.7 %</td>
</tr>
<tr>
<td>Master Degree</td>
<td>8.5 %</td>
<td>7.3 %</td>
<td>6.0 %</td>
</tr>
<tr>
<td>Doctoral Degree</td>
<td>0.5 %</td>
<td>0.3 %</td>
<td>0.3 %</td>
</tr>
</tbody>
</table>

Note. Standard deviations are given in brackets.
were asked to provide their first and last name on each printed questionnaire. Trainers and administrators who assisted the data collection confirmed very few objections to survey participation, suggesting an overall response rate of more than 90% at the onset of each course.

Participants’ age ranged from 21 to 68 with a mean of 38.1 years, 62.1% respondents were male, and 95.0% worked full-time. Complete cases collected were: N1 = 343, N2 = 341, N3 = 335, with total N = 353. Trainers explained the slight fluctuation in response numbers with trainees not attending all sessions, being late, or having to exit the class-room early.

6.3 Analysis & Findings

Factor analysis to investigate latent variables has become common for such areas as development, refinement, and evaluation of tests, scales, and measures (T. A. Brown, 2006). Consequently, an exploratory factor analysis is used to select items that best reflect the theory. This is followed by a confirmatory factor analysis to verify the theoretical structure of the constructs PM, LM, and TM, therefore testing hypothesis H1. A structural model then tests the remaining hypotheses H2-H4 via path analysis.

6.3.1 Exploratory Factor Analysis

The software SPSS 19 (SPSS Inc., 2010) was used to conduct exploratory factor analysis (EFA) on the development samples. The overarching goal of the EFA was identifying the underlying relationships between measured variables, including the actual magnitudes of each item’s cross loadings. The analytical steps involved were identical for each item set and findings are reported in the usual sequence: PM, LM, TM.

Respondents used the entire response range (1 to 5) for every item and thus generated sufficient variance for subsequent statistical analyses (Hinkin, 2005). A total of 8 respondents did not correctly follow procedures (e.g. multiple or invalid item responses); 2, 2, and 4 cases were thus removed from the sample sets. Data were screened to test for normality and
multicollinearity (Field, 2013). Mahalanobis’ distance revealed 4, 3, and 3 multivariate outliers and these were subsequently removed. Kaiser-Meyer-Olkin tests of sampling adequacy (all above .93) and Bartlett tests of sphericity (all .000) further indicated that the data were appropriate for factor analysis.

EFA using Maximum Likelihood (ML) estimation extracted 7 factors for PM, 8 factors for LM, and 6 factors for TM with eigenvalues greater than 1. In all cases the scree plots showed a noticeable break after the first four factors, which accounted for the majority of the variance.

As often has often been found to be the case (e.g. Harrison & McLaughlin, 1993; Hazlett-Stevens, Ullman, & Craske, 2004), the negatively worded items loaded highly onto the fourth “methods factor” (Herche & Engelland, 1996). Given that domain content sampling would not be affected, I concluded that all negatively worded items should be omitted in the further scale construction.

As the number of retained items at this stage was still impractically large, I next eliminated items that would substantially improve the reliability of the measures and not diminish the sampling domain. This analysis was conducted independently for items conceptually associated with can-do, reason-to, or energised-to (i.e. 3 x 3 = 9 subscales). Items with inter-item correlations of less than .4 were omitted from further analysis (J.-O. Kim & Mueller, 1978). Items with corrected item-to-total correlations below .50 (Obermiller & Spangenberg, 1998) were also omitted at this stage.

Given the intention to develop multidimensional scales based on discrete yet conceptually related dimensions, EFA using ML estimation with oblique rotation (PROMAX) forcing three factors was then used. Oblique rotation allows factors to correlate, produces estimates of correlations among factors, and makes the solution more interpretable, assisting to decide what items to delete or retain. Items that substantially cross-loaded (> .30) were subsequently excluded (Ford, MacMCallum, & Tait, 1986). The EFA was rerun each time after an item was deleted until the criteria were satisfied for a three factor matrix. To this point an identical item configuration resulted for
PM, LM, and TM across the three independent samples, adding support to the process of item development and selection.

At this stage, each scale’s ‘energised-to’ dimension comprised 3 items, whereas the ‘can-do’ dimension contained 5 items, and ‘reason-to’ dimension contained 6 items. In the interest of parsimony and practicality, further trimming to 3 items per factor appeared sensible.

The first ‘can-do’ item was omitted across all three scales based on the fact that it had the smallest factor loading but highest cross-loading when compared to its conceptually related items. The second ‘can-do’ item was omitted as it overlapped conceptually with another can-do item that showed comparable factor loadings. A similar approach was used to reduce the numbers of items tapping the ‘reason to’ dimension in each of the three measures from 6 items to 3 items. The EFA was rerun each time after an item was deleted, and the factors can-do, reason-to, and energised-to now comprised three items each. The total of 9 items explains a cumulative variance of 61% for PM, 53% for LM, and 56% for TM.

Internal consistency values (Coefficient Alpha; \( \alpha \)) for the sub-scales exceeded the conventional level of acceptance of .70 (Nunnally & Bernstein, 1994). They range from .71 to .84 and are shown alongside factor loadings in Table 3, Table 4, and Table 5. The final selection of questionnaire items for PM, LM, and TM is presented in Table 6.
### Table 3. Study 1: Pattern Matrix for Participation Motivation

<table>
<thead>
<tr>
<th>Item ID</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMCan05</td>
<td>.091</td>
<td>.484</td>
<td>.014</td>
</tr>
<tr>
<td>PMCan10</td>
<td>-.008</td>
<td>.655</td>
<td>-.115</td>
</tr>
<tr>
<td>PMCan11</td>
<td>-.053</td>
<td>.934</td>
<td>.056</td>
</tr>
<tr>
<td>PMRea03</td>
<td>.848</td>
<td>-.007</td>
<td>.020</td>
</tr>
<tr>
<td>PMRea05</td>
<td>.704</td>
<td>.068</td>
<td>-.008</td>
</tr>
<tr>
<td>PMRea10</td>
<td>.750</td>
<td>-.032</td>
<td>-.046</td>
</tr>
<tr>
<td>PMEnr01</td>
<td>.000</td>
<td>.003</td>
<td>-.828</td>
</tr>
<tr>
<td>PMEnr04</td>
<td>-.005</td>
<td>-.002</td>
<td>-.837</td>
</tr>
<tr>
<td>PMEnr05</td>
<td>.133</td>
<td>.115</td>
<td>-.598</td>
</tr>
</tbody>
</table>

Note: α for factor 1 (reason-to) = .78, α for factor 2 (can-do) = .76, α for factor 3 (energised-to) = .84

Boldface values that the item was developed to assess this factor.

### Table 4. Study 1: Pattern Matrix for Learning Motivation

<table>
<thead>
<tr>
<th>Item ID</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMCan05</td>
<td>.120</td>
<td>.494</td>
<td>-.093</td>
</tr>
<tr>
<td>LMCan10</td>
<td>-.036</td>
<td>.848</td>
<td>.022</td>
</tr>
<tr>
<td>LMCan11</td>
<td>.141</td>
<td>.572</td>
<td>-.086</td>
</tr>
<tr>
<td>LMRea03</td>
<td>.727</td>
<td>-.039</td>
<td>.008</td>
</tr>
<tr>
<td>LMRea05</td>
<td>.515</td>
<td>.182</td>
<td>-.075</td>
</tr>
<tr>
<td>LMRea10</td>
<td>.617</td>
<td>.098</td>
<td>-.011</td>
</tr>
<tr>
<td>LMEnr01</td>
<td>-.097</td>
<td>.024</td>
<td>-.820</td>
</tr>
<tr>
<td>LMEnr04</td>
<td>.090</td>
<td>.022</td>
<td>-.674</td>
</tr>
<tr>
<td>LMEnr05</td>
<td>.265</td>
<td>-.035</td>
<td>-.569</td>
</tr>
</tbody>
</table>

Note: α for factor 1 (reason-to) = .73, α for factor 2 (can-do) = .72, α for factor 3 (energised-to) = .78

Boldface values that the item was developed to assess this factor.
### Table 5. Study 1: Pattern Matrix for Transfer Motivation

<table>
<thead>
<tr>
<th>Item ID</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMCan05</td>
<td>.023</td>
<td>.605</td>
<td>-.050</td>
</tr>
<tr>
<td>TMCan10</td>
<td>.011</td>
<td>.777</td>
<td>.032</td>
</tr>
<tr>
<td>TMCan11</td>
<td>-.069</td>
<td>.648</td>
<td>.010</td>
</tr>
<tr>
<td>TMRea03</td>
<td>-.835</td>
<td>-.048</td>
<td>.044</td>
</tr>
<tr>
<td>TMRea05</td>
<td>-.518</td>
<td>.171</td>
<td>-.098</td>
</tr>
<tr>
<td>TMRea10</td>
<td>-.685</td>
<td>.025</td>
<td>-.061</td>
</tr>
<tr>
<td>TMEnr01</td>
<td>-.057</td>
<td>.030</td>
<td>-.851</td>
</tr>
<tr>
<td>TMEnr04</td>
<td>.020</td>
<td>-.035</td>
<td>-.891</td>
</tr>
<tr>
<td>TMEnr05</td>
<td>-.106</td>
<td>.161</td>
<td>-.522</td>
</tr>
</tbody>
</table>

**Note:** α for factor 1 (reason-to) = .71, α for factor 2 (can-do) = .73, α for factor 3 (energised-to) = .83

Boldface values that the item was developed to assess this factor.
Table 6. Study 1: Training-related Motivation Questionnaire Items

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Item ID</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participation Motivation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can-do</td>
<td>PMCAN05</td>
<td>I can overcome challenges related to participating in this training.</td>
</tr>
<tr>
<td></td>
<td>PMCAN10</td>
<td>I am able to invest the necessary time into this training.</td>
</tr>
<tr>
<td></td>
<td>PMCAN11</td>
<td>I can put forth the energy required for being part of this training.</td>
</tr>
<tr>
<td>Reason-to</td>
<td>PMREA03</td>
<td>Participating in this training is important for my professional development.</td>
</tr>
<tr>
<td></td>
<td>PMREA05</td>
<td>Going through this training will improve my work performance.</td>
</tr>
<tr>
<td></td>
<td>PMREA11</td>
<td>Taking part in this training is of great practical value to me for my job.</td>
</tr>
<tr>
<td>Energised-to</td>
<td>PMENR01</td>
<td>I feel enthusiastic about this training.</td>
</tr>
<tr>
<td></td>
<td>PMENR04</td>
<td>I feel excited about participating in this training.</td>
</tr>
<tr>
<td></td>
<td>PMENR05</td>
<td>I feel inspired by the opportunity this training offers.</td>
</tr>
<tr>
<td><strong>Learning Motivation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can-do</td>
<td>LMCAN05</td>
<td>I can overcome challenges related to attaining new knowledge and skills from this training.</td>
</tr>
<tr>
<td></td>
<td>LMCAN10</td>
<td>I am able to invest the necessary time to learn new skills and knowledge from this training.</td>
</tr>
<tr>
<td></td>
<td>LMCAN11</td>
<td>I can put forth the energy required to master the new skills and knowledge from this training.</td>
</tr>
<tr>
<td>Reason-to</td>
<td>LMREA03</td>
<td>Mastering this training is important for my professional development.</td>
</tr>
<tr>
<td></td>
<td>LMREA05</td>
<td>Learning new knowledge and skills from this training will improve my work performance.</td>
</tr>
<tr>
<td></td>
<td>LMREA11</td>
<td>Acquiring new knowledge and skills from this training is of great practical value to me for my job.</td>
</tr>
<tr>
<td>Energised-to</td>
<td>LMENR01</td>
<td>I feel enthusiastic about learning from this training.</td>
</tr>
<tr>
<td></td>
<td>LMENR04</td>
<td>I feel excited about acquiring new knowledge and skills from this training.</td>
</tr>
<tr>
<td></td>
<td>LMENR05</td>
<td>I feel inspired by the learning opportunity this training offers.</td>
</tr>
<tr>
<td><strong>Transfer Motivation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can-do</td>
<td>TMCAN05</td>
<td>I can overcome challenges related to applying the new knowledge and skills to my work.</td>
</tr>
<tr>
<td></td>
<td>TMCAN10</td>
<td>I am able to invest the necessary time to apply new knowledge and skills from this training at work.</td>
</tr>
<tr>
<td></td>
<td>TMCAN11</td>
<td>I can put forth the energy required to apply new knowledge and skills from this training at work.</td>
</tr>
<tr>
<td>Reason-to</td>
<td>TMREA03</td>
<td>Using this training at work is important for my professional development.</td>
</tr>
<tr>
<td></td>
<td>TMREA05</td>
<td>Applying the new knowledge and skills will improve my work performance.</td>
</tr>
<tr>
<td></td>
<td>TMREA11</td>
<td>Using the new knowledge and skills will be of great practical value to me for my job.</td>
</tr>
<tr>
<td>Energised-to</td>
<td>TMENR01</td>
<td>I feel enthusiastic about using this training on the job.</td>
</tr>
<tr>
<td></td>
<td>TMENR04</td>
<td>I feel excited about using new knowledge and skills from this training at work.</td>
</tr>
<tr>
<td></td>
<td>TMENR05</td>
<td>I feel inspired by the opportunity to apply new skills and knowledge from this training at work.</td>
</tr>
</tbody>
</table>
6.3.2 Confirmatory Factor Analysis

Using data from the independent sample I then carried out a confirmatory factor analysis (CFA) to estimate the degree of correspondence between the theorised dimensional structure of PM, LM, and TM, and the observed covariances among measured items selected.

A CFA is realised within the structural equation modelling (SEM) framework, specifically via the software Mplus 6.1 (Muthén & Muthén, 2011), and using maximum likelihood (ML) estimation. Multiple fit indices were used to assess model fit. The Chi-square ($\chi^2$) statistic was evaluated via a Chi-square difference test ($\Delta \chi^2$) across each of the nested models for significance. As preliminary tests indicated the multivariate normality of the data, the chi-square differences in these procedures were based on the usual chi-square values under the ML estimation. In addition, a chi-square divided by degrees of freedom ($\chi^2/df$) is a more informal test of model fit and a ratio of $< 3$ may be interpreted as a good fit (Kline, 2011). The root mean square error of approximation (RMSEA) is a measure of average standardised residuals per degree of freedom. Values just below $< 0.10$ may be considered admissible yet mediocre, a value of $< 0.08$ indicates an acceptable fit, values of $< 0.05$ are good, and $< 0.01$ is considered excellent (Browne & Cudeck, 1993; MacCallum, Browne, & Sugawara, 1996). The standardised root mean square residual (SRMR) provides information about the total average deviation in the variance/covariance matrix. While values $< .08$ are considered fair, a value of $< .05$ is considered a good fit (Hu & Bentler, 1999). The comparative fit index (CFI) and Tucker–Lewis Index (TLI; the same as the Non-Normed Fit Index or NNFI) are comparative indices that contrast a hypothesized model against an absolute null model that proposes that all indicators are uncorrelated. If other indices suggest acceptable fit, values for the CFI and TLI $> .90$ may be considered admissible, albeit more recent recommendations consider $> .95$ as representing good fit (Kline, 2011).

The process of testing Hypothesis 1 involved comparing a range of alternative models and was the same for each of the scales. To begin with, five models were examined. Model 1 represents the hypothesised three-factor model, specified so that the can-do, reason-to, and energised-to items load on
separate latent factors. Model 2, model 3, and model 4 were two-factor solutions in which the 6 items thought to be associated with two of the three dimensions were merged as if representing one factor, the second factor contained the remaining 3 items. Model 5 was a one-factor model, containing all 9 items. The measurement models contained no double-loading indicators and all latent factors were allowed to correlate, but the items’ error terms were not. The fit statistics for all models described are shown in Table 7 for PM, Table 8 for LM, and Table 9 for TM.

The results illustrate that the best-fitting solution is the hypothesised three-factor model (M1) for PM, LM, and TM. The goodness-of-fit indices show a considerable improvement in the $\chi^2$, $\chi^2/df$, RMSEA, CFI, TLI, and SRMR over the competing one- and two-factor models (M2-M5). All factor loadings were also statistically significant ($p < .001$), item loadings ranged from .62 to .89 (median = .79). Inspection of modification indices suggested that no item sought to strongly associate with any factor other than the one for which it was intended. The measurement models are shown for PM in Figure 10, for LM in Figure 11, and for TM in Figure 12.

Construct validity was further assessed via a range of means. All following descriptive statistics are summarised in Table 10. To begin, internal consistency was examined via Coefficient Alpha ($\alpha$) and Composite reliability (CR). CR assesses the internal consistency of a latent measure, analogous to that of $\alpha$, yet with more accurate estimates based on loadings and residuals. A CR value of >.7 suggests good reliability (Bagozzi & Yi, 1988). CR was calculated individually for can-do, reason-to, and energised-to factors as they relate to PM, LM, and TM. In regards to $\alpha$ all scales but can-do participation motivation ($\alpha = .63$) exceeded the >.70 threshold (Nunnally & Bernstein, 1994). However, the value for CR was .81, and so this was considered permissible given that $\alpha$ is a lower bound on true reliability (e.g. Novick & Lewis, 1967; Sijtsma, 2009), it “underestimates the true reliability of a measure that may not be fully tau equivalent” (Osburn, 2000, p. 344), and CR as “better’ estimate of true reliability” (R. A. Peterson & Kim, 2013, p. 194) clearly exceeded the suggested reliability estimates.
Convergent validity was assessed by calculating the average variance extracted (AVE). The AVE reflects the average amount of variance in observed variables that a latent construct is able to explain due to random measurement error. It is suggested that a latent construct has an AVE > .5, indicating that the majority of the variances is shared through this factor (Fornell & Larcker, 1981). The latent factors can-do, reason-to, and energised-to met this criterion for PM, LM, and TM.

Although the three-factor solutions were found to fit the data well for the PM, LM and TM measures, a more rigorous tests for divergent validity was conducted. Fornell and Larcker (1981) argue that a latent construct is sufficiently discriminant when its AVE is larger than the shared variance of given construct with another construct. Accordingly, the square root of a constructs' AVE should be greater than that factor’s correlation with other factor’s to support sufficient discriminant validity between them. Most of the latent factors can-do, reason-to, and energised-to met these criteria in their respective configurations for PM, LM, and TM. However, in several configurations the differences between the correlation and the square root of the AVE are marginal and the relationship between PM’s reason-to and energised-to dimension is even characterised by a correlation that is .014 higher than the respective AVE square root of the energised-to factor.

Closer examination further revealed high correlations between the factors can-do, reason-to, and energised-to for PM, LM, and TM (up to .76), giving rise to the question whether treating can-do, reason-to, and energised-to as distinct constructs in studies and for practical application is indeed sensible (see T. A. Brown, 2006).

Based on the above, the following was concluded: First, findings relating to convergent validity and internal consistency support the psychometric adequacy of the developed latent constructs and their measures. Second, tests of divergent validity support that can-do, reason-to, and energised-to can be understood as distinct, albeit highly correlated dimensions of PM, LM, and
TM, thereby supporting H1a,b,c. Third, these findings permit the testing of H2-H4 to proceed.

**Table 7. Study 1: Model Comparison for Participation Motivation**

<table>
<thead>
<tr>
<th>Model</th>
<th>χ²</th>
<th>df</th>
<th>χ²/df</th>
<th>∆χ²</th>
<th>RMSEA</th>
<th>CFI</th>
<th>TLI</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM1 3-Factor Model</td>
<td>38.99</td>
<td>24</td>
<td>1.62</td>
<td>0.00</td>
<td>1.00</td>
<td>1.01</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>Can&lt;&gt;Reason&lt;&gt;Energised</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM2 2-Factor Model</td>
<td>112.65</td>
<td>26</td>
<td>4.33</td>
<td>73.66*</td>
<td>0.10</td>
<td>0.91</td>
<td>0.88</td>
<td>0.06</td>
</tr>
<tr>
<td>CanReason&lt;&gt;Energised</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM3 2-Factor Model</td>
<td>96.77</td>
<td>26</td>
<td>3.72</td>
<td>57.78*</td>
<td>0.09</td>
<td>0.93</td>
<td>0.90</td>
<td>0.05</td>
</tr>
<tr>
<td>CanEnergised&lt;&gt;Reason</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM4 2-Factor Model</td>
<td>97.91</td>
<td>26</td>
<td>3.77</td>
<td>58.92*</td>
<td>0.09</td>
<td>0.93</td>
<td>0.90</td>
<td>0.05</td>
</tr>
<tr>
<td>Can&lt;&gt;ReasonEnergised</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM5 1-Factor Model</td>
<td>154.94</td>
<td>27</td>
<td>5.74</td>
<td>115.95*</td>
<td>0.12</td>
<td>0.87</td>
<td>0.83</td>
<td>0.06</td>
</tr>
<tr>
<td>CanReasonEnergised</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. ∆χ² relates to comparison with the hypothesised PM1. * denotes ∆χ² is significant at p<.001 (two-tailed). <> denotes correlation. No space between factor labels (e.g. CanReason) denotes associated items represent single latent factor.*
### Table 8. Study 1: Model Comparison for Learning Motivation

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2$/df</th>
<th>$\Delta\chi^2$</th>
<th>RMSEA</th>
<th>CFI</th>
<th>TLI</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>LM1 3-Factor Model Can&lt;&gt;Reason&lt;&gt;Energised</td>
<td>65.26</td>
<td>24</td>
<td>2.72</td>
<td>0.07</td>
<td>0.97</td>
<td>0.96</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>LM2 2-Factor Model CanReason&lt;&gt;Energised</td>
<td>110.89</td>
<td>26</td>
<td>4.27</td>
<td>45.63*</td>
<td>0.10</td>
<td>0.95</td>
<td>0.92</td>
<td>0.04</td>
</tr>
<tr>
<td>LM3 2-Factor Model CanEnergised&lt;&gt;Reason</td>
<td>200.12</td>
<td>26</td>
<td>7.70</td>
<td>134.86*</td>
<td>0.14</td>
<td>0.89</td>
<td>0.84</td>
<td>0.07</td>
</tr>
<tr>
<td>LM4 2-Factor Model Can&lt;&gt;ReasonEnergised</td>
<td>214.86</td>
<td>26</td>
<td>8.26</td>
<td>149.60*</td>
<td>0.15</td>
<td>0.88</td>
<td>0.83</td>
<td>0.06</td>
</tr>
<tr>
<td>LM5 1-Factor Model CanReasonEnergised</td>
<td>273.44</td>
<td>27</td>
<td>10.13</td>
<td>208.18*</td>
<td>0.16</td>
<td>0.84</td>
<td>0.79</td>
<td>0.07</td>
</tr>
</tbody>
</table>

*Note. $\Delta\chi^2$ relates to comparison with the hypothesised LM1. * denotes $\Delta\chi^2$ is significant at $p<.001$ (two-tailed). <> denotes correlation. No space between factor labels (e.g. CanReason) denotes associated items represent single latent factor.

### Table 9. Study 1: Model Comparison for Transfer Motivation

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2$/df</th>
<th>$\Delta\chi^2$</th>
<th>RMSEA</th>
<th>CFI</th>
<th>TLI</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>TM1 3-Factor Model (hypothesised) Can&lt;&gt;Reason&lt;&gt;Energised</td>
<td>64.78</td>
<td>24</td>
<td>2.70</td>
<td>0.07</td>
<td>0.98</td>
<td>0.97</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>TM2 2-Factor Model CanReason&lt;&gt;Energised</td>
<td>141.46</td>
<td>26</td>
<td>5.44</td>
<td>76.68*</td>
<td>0.12</td>
<td>0.94</td>
<td>0.91</td>
<td>0.05</td>
</tr>
<tr>
<td>TM3 2-Factor Model CanEnergised&lt;&gt;Reason</td>
<td>195.34</td>
<td>26</td>
<td>7.51</td>
<td>130.56*</td>
<td>0.14</td>
<td>0.91</td>
<td>0.87</td>
<td>0.06</td>
</tr>
<tr>
<td>TM4 2-Factor Model Can&lt;&gt;ReasonEnergised</td>
<td>128.04</td>
<td>26</td>
<td>4.92</td>
<td>63.26*</td>
<td>0.11</td>
<td>0.94</td>
<td>0.92</td>
<td>0.05</td>
</tr>
<tr>
<td>TM5 1-Factor Model CanReasonEnergised</td>
<td>227.97</td>
<td>27</td>
<td>8.44</td>
<td>163.19*</td>
<td>0.15</td>
<td>0.89</td>
<td>0.85</td>
<td>0.06</td>
</tr>
</tbody>
</table>

*Note. $\Delta\chi^2$ relates to comparison with the hypothesised TM1. * denotes $\Delta\chi^2$ is significant at $p<.001$ (two-tailed). <> denotes correlation. No space between factor labels (e.g. CanReason) denotes associated items represent single latent factor.
Figure 10. Measurement model and standardised loadings for Participation Motivation

Figure 11. Measurement model and standardised loadings for Learning Motivation
Figure 12. Measurement model and standardised loadings for Transfer Motivation
### Table 10. Study 1: Descriptive Statistics, Scale Reliabilities, Correlations for Validation Sample

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>α</th>
<th>CR</th>
<th>Participation Motivation</th>
<th>Learning Motivation</th>
<th>Transfer Motivation</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Can-do</td>
<td>Reason-to</td>
<td>Energised-to</td>
</tr>
<tr>
<td>PM Can-do</td>
<td>4.01</td>
<td>0.39</td>
<td>0.63</td>
<td>0.81</td>
<td>.774</td>
<td>.606**</td>
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<td>PM Reason-to</td>
<td>4.25</td>
<td>0.49</td>
<td>0.79</td>
<td>0.81</td>
<td>.643**</td>
<td>.763**</td>
<td>.749</td>
</tr>
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<td>PM Energised-to</td>
<td>4.05</td>
<td>0.52</td>
<td>0.76</td>
<td>0.79</td>
<td>.570**</td>
<td>.445**</td>
<td>.519**</td>
</tr>
<tr>
<td>LM Can-do</td>
<td>4.06</td>
<td>0.38</td>
<td>0.76</td>
<td>0.81</td>
<td>.406**</td>
<td>.669**</td>
<td>.549**</td>
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<td>LM Reason-to</td>
<td>4.14</td>
<td>0.48</td>
<td>0.83</td>
<td>0.83</td>
<td>.402**</td>
<td>.479**</td>
<td>.688**</td>
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<td>LM Energised-to</td>
<td>4.10</td>
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<td>0.87</td>
<td>0.87</td>
<td>.550**</td>
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<td>TM Can-do</td>
<td>4.12</td>
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<td>0.81</td>
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<td>.568**</td>
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<td>TM Reason-to</td>
<td>4.16</td>
<td>0.46</td>
<td>0.79</td>
<td>0.82</td>
<td>.357**</td>
<td>.513**</td>
<td>.679**</td>
</tr>
<tr>
<td>TM Energised-to</td>
<td>4.13</td>
<td>0.55</td>
<td>0.89</td>
<td>0.89</td>
<td>.357**</td>
<td>.513**</td>
<td>.679**</td>
</tr>
</tbody>
</table>

Note. N = 335-343. Standard Deviation (SD); Cronbach Alpha (α); Composite Reliability (CR). Figures underlined present square root of Average Variance Extracted (AVE). Figures underlined present the square root of the Average Variance Extracted (AVE) whereby a value >.707 equals an AVE above the suggested threshold of .5. Correlation is significant at * p<.05, ** p<.01 (two-tailed).
6.3.3 Path Analysis

Further structural equation modelling via Mplus 6.11 and ML estimation was used to test H2-H4. An initial CFA for the measurement model comprising 9 latent variables – can-do, reason-to, and energised-to states for PM, LM, and TM – showed good fit ($\chi^2 = 519.276(288)$; RMSEA = 0.048; CFI = 0.96; TLI = 0.95; SRMR = 0.036).

Next, the structural model based on H2-H4 as shown in Figure 8 was estimated and showed good fit ($\chi^2 = 569.999(309)$; RMSEA = 0.049; CFI = 0.95; TLI = 0.94; SRMR = 0.056). The model and standardised path coefficients are described graphically in Figure 13.

All three dimensions significantly (p = < .001) related to their respective equivalent in the subsequent stage. That is, can-do PM related to can-do LM (.66), and the latter to can-do TM (.75). Likewise, reason-to PM related to reason-to LM (.67), and the latter to reason-to TM (.83). At last, energised-to PM related to energised-to LM (.67), and the latter to energised-to TM (.81).

In addition, there was ample support for LM mediating the relationship between PM and TM with significant indirect effects (p = < .001) for the respective dimensions: can-do (.49), reason-to (.55), and energised-to (.55).

Taken together this fully supports H2, H3 and H4.
Figure 13. Estimated Structural Model: Trajectories of Can-do, Reason-to, and Energised-to Participation Motivation, Learning Motivation, and Transfer Motivation. Solid lines represent paths that were significant (*** p < .001). All factor loadings significant at p < .001.
6.4 Discussion

The results of this study support the central proposition, namely that can-do, reason-to, and energised-to may be viewed as distinct dimensions for the constructs LM, PM, and TM. The study also provides support for the proposed sequential interrelationships between motivational processes of different stages of training.

Levels of can-do, reason-to, and energised-to PM were correlated with their respective LM dimensions, which in turn were associated with the corresponding TM dimensions. This suggests that some degree of motivation for each of these facets is brought into the training and carries through until the end of training, albeit to varying degrees.

This would suggest that the degree to which individuals believe at the start of a course they have the resources to partake affects their appraisals about their capacity to learn and subsequently transfer. At the same time, heightening the crucial can-do TM prior to returning to work may be best achieved by bolstering can-do beliefs during class (LM) about mastering new competencies as this appears to have a more sizeable flow-on effect.

A comparable pattern emerged for the relationships associated with the reason-to dimension: PM to LM was moderate, and LM to TM was high. Thus, individuals carry a reason-to PM into the training which affects utility judgements for LM and TM. Strikingly, the effect size of the reason-to LM to TM path would suggest trainees’ judgements about why they might consider making use of trained competencies at work, is little different to the perceived relevance and utility of the learning efforts. This is in line with expectancy value appraisals which are future oriented; those trainees understanding the potential of new competencies in class keep this view until course end. In other words, unless the training course itself provides sufficient reason-to master new competencies, little transfer may be realised.

The findings relating to the energised-to dimension are similar. Levels of energised-to PM on entry shape activation on exit for transfer. An explanation may be that the learning experience during training was largely
cognitive and individuals were not really exposed to affect-changing stimuli. Consequently, many would have remained with their initial level of affect during these short courses. An alternative explanation may be the effect of dispositional affect (Diener, Nickerson, Lucas, & Sandvik, 2002; Judge & Larsen, 2001), a more general degree of cheerfulness. Future research on training transfer may investigate both of these avenues. Finally, positive affective states during learning (energised-to LM) directly shape energised-to transfer motivational states on exit, suggesting to facilitate positive affect during training.

Taken as a whole, the detailed examination of training-related motivation leads to two arguments. First, levels of PM by which people enter a training episode affect the levels of TM with which those people return to work. While further antecedents have not been investigated here, this finding has implications for training providers and work organisations alike. It suggests that motivating individuals for training effectiveness should begin before training because initial motivational states have the potential for downstream effects on goal setting and striving for learning and transfer. Future research should seek to identify which factors of the work environment affect PM.

Second, the study suggests that PM, LM, and TM each encompass three distinct motivational processes. However, the high factor correlations indicate that can-do, reason-to, and energised-to share considerable amounts of variance. On the one hand, this is not necessarily a problematic finding. As has been discussed, these processes may be seen as complementary mechanisms that in reality likely arise together and jointly operate (Freeman, 2000; Seo et al., 2004). On the other hand, considerable amounts of shared variance between dimensions can be impractical in applied research (T. A. Brown, 2006).

Accordingly, on pragmatic grounds, future studies may need to consider respecifying PM, LM, and TM in terms of superordinate or higher-order models. The advantage of a superordinate model is that it allows for covariation among first-order factors through the second-order factor. Substantive theoretical reasons exist to arrive at such a model: can-do, reason-to, and energised-to are conceptually distinct but nevertheless linked
by a broader motivational goal (i.e. participation, learning, transfer). In the psychological literature high correlations are regularly reported between conceptually discrete factors (e.g. Fernet, 2010; Gagne et al., 2010), leading researchers to treat them as manifestations of a higher-order construct (e.g. Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2007).

6.5 Limitations

One obvious limitation of this study is the absence of measures of other training-related constructs in the data that could be used to provide further evidence of convergent and discriminant validity. DeVellis (2011) stresses that at an early stage it is paramount to collect clean data for scale development and validation which is not affected by survey fatigue or other construct bias. Future research thus needs to incrementally position the new conceptualisation of training-related motivation within a nomological net.

Another limitation may relate to the timing of the three stages of data collection. If the measurement waves were spread further apart, or more evenly distributed, for example, it is possible that the observed effect sizes would change.

Finally, all data used to develop and validate the measures originated from a single training provider. While this institution offers a diversified course range and trainers have diverse backgrounds and profiles, a bias due to organisational specifics (e.g. marketing approach, venue quality, cost structure) may represent a limitation, albeit a small one.

6.6 Conclusion

The purpose of this chapter was to comprehensively operationalise training-related motivation as it was conceptualised in chapter 3. To this end, I developed a total of 180 items representing can-do, reason-to, and energised-to aspects of participation, learning, and transfer motivation. They were tested for face and content validity, piloted, and refined.
Three comparable development samples responded to a 43 item questionnaire either before, during, or after a professional training activity. These samples were heterogeneous with respect to respondents’ work organisations as well as the training courses attended. The resulting data were then subjected to factor analyses. Through EFAs and a range of selection criteria the measures were narrowed down to sets of three items each for the can-do, reason-to, and energised-to dimensions of motivation at each training stage. In addition to the integrated conceptualisation of training-related motivation, the present research thus contributes to the literature through these three 9-item scales for PM, LM, and TM.

The scales are conceptually grounded, defined upon a training-related goal, equally balanced in dimensional composition, and comprise a parsimonious set of psychometrically adequate items that may be used to capture dynamic motivational states. The universal measures provide a platform for extending training research at the inter- and intra-individual level.

CFA on an independent sample was used to confirm that can-do, reason-to, and energised-to may be viewed as distinct dimensions for the constructs LM, PM, and TM. Nevertheless it was suggested that conceptualising LM, PM, and TM as higher-order constructs may be warranted in future, given the high intercorrelation between the component factors at all stages in the training process and the fact that the elements are linked at each stage by a common focal goal (i.e. participation, learning, transfer).

The present research also provided an initial test of what Beier and Kanfer (2009) proposed as stage model, suggesting that substantial variance in transfer motivation is explained by preceding levels of learning motivation and participation motivation. In other words, people already enter a course with certain amounts of confidence beliefs, appreciation thoughts, and positive feelings, which ultimately affect the direction, intensity, and persistence of transfer goals. More research is needed that examines the potentially relevant organisational conditions and individual factors contributing to these motivational states, as well as their impact on training transfer. Accordingly, and given the crucial role of transfer motivation, the
present research continues by examining positive cognitive states as potential antecedents of transfer motivation, and proactive transfer behaviour and training transfer as potential consequences.
CHAPTER 7

STUDY 2: POSITIVE COGNITIVE STATES, TRANSFER MOTIVATION, AND PROACTIVE TRANSFER BEHAVIOUR

7.1 Aim & Hypotheses

In this chapter I describe a study conducted as an initial test of propositions developed in Chapters 3, 4 and 5. As the theory connecting the focal constructs has already been greatly discussed in these chapters, the central premises are summarised briefly before specifying the hypotheses and integrating those relationships in an illustrative model (Figure 14).

The transfer of training must be motivated. The direction, intensity, and persistence to apply new competencies at work is argued to be a function of
confidence beliefs, appreciation thoughts, and positive activating feelings with regards to the training received.

This transfer motivation is further argued to fuel proactive transfer behaviours, whereby individuals self-initiate the envisioning, planning, enacting, and reflecting of training transfer. Given that training transfer may also be directly solicited, proactive transfer behaviours will only partially account for the effect of transfer motivation on training transfer. Dispositional proactivity is also thought to affect training transfer, although this effect is argued to be fully mediated by more proximal proactive transfer behaviours.

Hope, optimism, resilience, and self-efficacy represent thoughts and beliefs about ability, controllability, and probability of achieving work goals. As a result this core confidence is likely to influence a transfer motivational state that determines the setting, pursuit, and achievement of transfer goals.

\[H1:\] Transfer motivation is positively related to training transfer.

\[H2:\] Transfer motivation is positively related to proactive transfer behaviour.

\[H3a:\] Proactive transfer behaviour is positively related to training transfer.

\[H3b:\] Proactive transfer behaviour partially mediates the relationship between transfer motivation and training transfer.

\[H4a:\] Proactive personality is positively related to proactive transfer behaviour.

\[H4b:\] Proactive transfer behaviour fully mediates the relationship between proactive personality and training transfer.
H5a: Core confidence, a higher-order construct comprised of hope, optimism, resilience, and self-efficacy, is positively related to transfer motivation.

H5b: The relationship between core confidence and training transfer is mediated by transfer motivation.
Figure 14. Hypothesised relationships between predictors and mediators on training transfer
7.2 Sample & Procedure

4668 individuals who had participated in one of 181 different formal work training courses offered by a major Australian training provider in the last 12 months, were invited by email to participate in the study by completing a questionnaire online. To incentivise participants, they were offered the opportunity to enter a draw for winning a tablet (e.g. iPad) when completing the survey.

The first page of the online survey reminded each respondent about the specific training course s/he participated in, the start date, and the training location. For example: “You participated in the training program ‘Applied Project Management’ in June 2011 at XYZ training institute. Please think about this training now when responding to the survey.” This was done in order to prime the respondent about their personal learning experience and the particular competencies associated with it.

Given the cross-sectional design of the study, I employed procedural remedies suggested by Podsakoff, MacKenzie, Lee, and Podsakoff (2003) to minimise question order effects and common source measurement biases through separating measures and wording of the criterion variable, so that items of the criterion variable were mixed with other items, as opposed to items representing predictors, which were clearly separated. Questionnaire items of multi-dimensional constructs were randomly scrambled within their block so that related items did not appear near each other. In addition, to generate some psychological separation, respondents were asked to complete some demographic and organisational data mid-survey before completing the remaining foci constructs’ measures. Research indicates that even small division in time or context can reduce consistency motifs and demand characteristics (Bethlehem & Biffignandi, 2012).

949 (20.3%) valid responses were collected. The respondents were associated with 148 training courses covering a broad range of job levels, closed and open competencies, and again domains (e.g. administration assistance, software proficiency, strategic thinking, people skills).
Participants’ age ranged from 18 to 69 with a mean of 38.9 years, 47.6% respondents were male, and 93.3% worked full-time.

7.3 Measures

In order to test the hypotheses of interest, measures of 8 latent constructs were included in the questionnaire. They are described next and listed in Appendix 11.1. Unless otherwise stated, respondents were asked how much they agree or disagree with certain statements on a 5-point response scale: (1) Strongly disagree, (2) Disagree, (3) Neither, (4) Agree, (5) Strongly agree.

Training transfer was measured using 4 items focusing on generic implications of training transfer. This was necessary due to the highly heterogeneous sample covering various training programs, competencies, and work contexts. Three items were based on Xiao (1996), a sample item reads “I have changed parts of my behaviour/activities at work in order to be consistent with material taught in the training.”. The fourth item asked “How much of the new knowledge/skills covered by the training do you estimate you actually use at work?”, and required a response on a 0-100% range via a 5-point scale (i.e. 20% increments).

Transfer motivation was measured by the 9-item TM scale, specifically developed in the present research and described in chapter 7.

Proactive training transfer was assessed by adapting the 12-item instrument developed by Bindl et al. (2012) for work- and career-related proactive goal self-regulation that showed good psychometric properties (α > .90). The items were adapted to capture the training transfer context. The resultant 12-item scale is comprised of three items each capturing the proactive transfer-goal self-regulation elements envisioning, planning, enacting, and reflecting. For each item, respondents were asked to indicate how much time and effort they have expended since the training program, e.g.: “envisioning how my job might be different if I began to use what I have learned.” (envisioning); “getting myself prepared to use new skills or knowledge acquired through this training.” (planning); “self-initiating ways to use trained skills at work?” (enacting); “seeking extra feedback from
someone about any training-related actions I engaged in?” (reflecting). Responses were captured on a 5-point scale ranging from (1) not at all to (5) a great deal.

Proactive personality was measured by the six highest-loading items from the measure developed by Bateman and Crant (1993). The same items were used in Parker (1998; α = .85) and validated as one of the shortest best working scales to assess personal disposition toward being proactive (Claes, Beheydt, & Lemmens, 2005; α = .86). A sample item reads: “I am always looking for better ways to do things.”

For the four positive cognitive states, items were taken from the original scales and adapted to fit the work context, if necessary. Hope was measured using 6 items adapted from the State Hope Scale (SHS) developed by Snyder et al. (1996). A sample item reads: “There are lots of ways around the sorts of problems I encounter right now at work.” Optimism was measured with 6 items from the Life Orientation Test-Revised (LOT-R) developed by Scheier, Carver, and Bridges (1994) and three items are reversed. A sample item reads: “When things are uncertain for me at work, I usually expect the best.” Resilience was measured using 6 items from the Resilience Scale (RS-14) developed by Wagnild (2009), with one item being reversed. A sample item reads: “At work, I can get through difficult times because I’ve experienced difficulty before.” Self-efficacy was measured with 6 items from the New General Self-Efficacy Scale (NGSE) developed by Chen, Gully, and Eden (2001). A sample item of the NGSE reads: “I am confident that I can perform effectively on many different job tasks.” Taken together, 15 out of the 24 items chosen match those comprising the Psychological Capital Questionnaire (PCQ; Luthans, Youssef, & Avolio, 2006). The full set of measures associated with the PCQ was considered inappropriate as some items target a managerial work context/tasks (e.g. “I feel confident contributing to discussions about the company's strategy.”) which relates only to a sub-population of the sample in this study.

Control Measures. Training transfer can be affected by a number of individual and contextual factors (Blume et al., 2010; Chiaburu, Sawyer, & Thoroughgood, 2010), and so respondents were asked to indicate their age
(in years), \textit{gender} (male = 1, female = 2), \textit{organisational tenure} (in years), \textit{job tenure} (in years), and \textit{total work experience} (in years). Respondents were also asked to indicate their \textit{educational level} (i.e. highest degree attained: no High School Graduation = 1, High School Graduation = 2, University Diploma/TAFE = 3, Bachelor Degree = 4, Honours Degree = 5, Master Degree = 6, Doctoral Degree/PhD = 7). The date of the actual survey completion was additionally captured to calculate the \textit{elapsed transfer opportunity}, it simply describes the time in days between the last training day and the actual survey response.

7.4 \textbf{Analyses}

7.4.1 \textit{Data Screening}

Data were screened for multicollinearity and normality with items showing skewness between -1.59 and 0.53 and kurtosis between -0.89 and 2.82, indicating no severe violation of the principal normality assumption (Kline, 2011).

Missing data analysis revealed two noticeable patterns by which items were not completed for the four positive cognitive states (7.6%; hope, optimism, self-efficacy, resilience) as well as proactive personality (13.3%). The most likely explanation is survey fatigue as these measures were captured in the last two sections of the questionnaire; some people simply did not fully complete the online survey. Another reason may be that to some people these constructs’ measures felt more personal than items about e.g. training transfer; they decided to not respond. Most importantly, results of an ANOVA between those cases with complete records and those cases with missing observations on one or both of the associated question blocks showed no significant differences on any other variables measured. Further examination of missing patterns revealed no particular dependencies or clusters other than the ones discussed. The remaining items show no systematic patterns at all as they have no or very few (max. 0.02%) missing observations. Thus, there was no association between the propensity for
missing data and the values of the foci variables or demographics in the data set. It can be concluded that the data can be treated as missing completely at random (MCAR; Roderick & Rubin, 2002).

To conduct SEM by using Mplus 6.11 (Muthén & Muthén, 2011), and given established support for assuming data normality and MCAR, no particular data handling was required for the following analysis. Specifically, using Maximum Likelihood (ML) estimation handles the missing data and parameter estimation in a single step. In brief, ML in Mplus uses all data that is available to estimate the model using full information maximum likelihood (FIML); each parameter is estimated directly without first filling in missing data values for each individual. Simulation studies suggest that this provides accurate estimates of model parameters and standard errors (Allison, 2009; Buhi, Goodson, & Neilands, 2008; Enders & Bandalos, 2001; Enders, 2001), even when data loss is much larger than in the present study.

Data were also screened for any response bias effects; i.e. whether any particular characteristic inherent in the data collection affected the data. First, there was no recognisable response pattern based on training course association. In fact, the initial distribution within the data set used to send the survey invitations was well reflected in the actual response data: the ratios associated with a given course correlated .82 (p = .000). Second, the elapsed time between the last training day and the survey invitation (mean = 214 days, SD = 104 days) did have a decreasing effect on the response rate, albeit a very small one (skew = .014).

Third, to test for the presence of common method effect underlying the data I first conducted a Harman’s one-factor test (Podsakoff, MacKenzie & Lee, 2003). All latent construct items were entered into an EFA using principal axis factoring, unrotated and with promax rotation. In both cases the EFA revealed 6 distinct factors (eigenvalue > 1.0) and not a single factor that would account for the majority of the covariance among the variables. Those results would suggest no substantial amount of common method variance is present. This was followed by a more rigorous test for the presence and equality of method effects by employing a latent marker variable (Lindell & Whitney, 2001). It involves identifying an item that is
theoretically most unrelated to the focal variables of the model. The conceptually most unrelated item available was “My supervisor makes difficult decisions based on high standards of ethical conduct”. Given its post-hoc selection, the item may be considered a ‘nonideal’ marker (Richardson, Simmering, & Sturman, 2009). Nonetheless, using CFA procedures (Williams, Hartman, & Cavazotte, 2010) two models were compared. In the baseline model the marker latent factor loaded only onto the marker item while all latent first-order constructs correlated with each other but not with the marker latent factor ($\chi^2 = 2051.38(1170); \text{CFI} = 0.96$). The constrained model adds method factor loadings, which are constrained to be equal, onto all reflective indicators ($\chi^2 = 2046.89(1168); \text{CFI} = 0.96$). The chi-square difference test between the constrained model and the baseline model was not significant ($\Delta\chi^2 = 4.49; \Delta df = 2$). Also, no loadings between the reflective indicators and the latent marker factor were significant. Together this suggests that there is no common method variance equally affecting all variables.

The findings resulting from the Harman’s one-factor test and the latent marker variable test suggested that it was reasonable to assume that no substantial response bias effects are present in the data.

### 7.4.2 Measurement Models

SEM was chosen for path analysis to test for the hypothesised relationships (Figure 14). SEM is considered more rigorous than more typical regression techniques as all mediation paths are measured simultaneously rather than step by step. The major advantage of SEM is that it models the relationships at the item level, thus explicitly accounting for measurement error. However, the validity of results through a structural model is dependent on capturing and establishing the reliability of the underlying constructs. For instance, one must assure that a potential bad model fit can be attributed to incorrectly specified paths, and is not caused by the involved measures. Thus, the full benefit of SEM can only be achieved through a two-step approach, the first step of which is establishing the soundness of
involved latent variables, which are then used in the subsequent structural model (Anderson & Gerbing, 1988).

As recommended by Kline (2011), I separately analysed each latent variable before estimating a full measurement model with all latent variables that would then constitute the path model. Following steps for congeneric testing outlined by Brown (2006), I conducted CFA with MPlus 6.11 using ML estimation. The same model fit indices criteria were applied as discussed in study 1. This examination also involved published scales as previous evidence of scale validity does not necessarily ensure validity in subsequent uses (Levine, Hullett, Turner, & Lapinski, 2006). As part of the process, internal consistency of scales was assessed via Cronbach’s alpha (α) and composite reliability (CR), the suggested standard for both being a value > .70 (Nunnally & Bernstein 1994). Each latent variable’s convergent validity was also assessed via the average variance extracted (AVE), whereby a value > .50 is suggested (Fornell & Larcker, 1981). Unless mentioned otherwise, all constructs met these criteria.

First, all items showed significant (p = .001) loadings on their a priori factor. Training transfer showed good model fit (χ² = 4.99(2); RMSEA = 0.040; CFI = 0.99; TLI = 0.99; SRMR = 0.010).

Corresponding to proposed theory and findings from study 1, transfer motivation exhibited the best fit with can-do, reason-to, and energised-to representing distinct factors (χ² = 77.18(24); RMSEA = 0.048; CFI = 0.99; TLI = 0.98; SRMR = 0.022). Given the high correlations (.79-.85) among the three factors, they were loaded onto a second-order factor with identical model fit.

Proactive Transfer Behaviour had good model fit (χ² = 93.58(48); RMSEA = 0.032; CFI = 0.99; TLI = 0.98; SRMR = 0.014). However, the factors envision, plan, enact, and reflect correlated very highly (.90-.96). As discussed in chapter 4, potentially this reflects the iterative nature of self-regulation processes, especially when captured in retrospect. Thus, proactive transfer behaviours were conceptualised as an integrated construct and the four regulatory factors formed a second-order model which also showed a
good fit ($\chi^2 = 110.37(50); \text{RMSEA} = 0.036; \text{CFI} = 0.99; \text{TLI} = 0.98; \text{SRMR} = 0.016$).

Proactive personality showed good model fit ($\chi^2 = 41.97(9); \text{RMSEA} = 0.067; \text{CFI} = 0.97; \text{TLI} = 0.95; \text{SRMR} = 0.027$). The variable met the reliability criteria with $\alpha = .78$ and CR = .78, but its AVE = .35 was below the suggested value of .5, and further item omission could not improve this situation. Given the construct’s main role in this study - to ‘control for’ a potential dispositional proactive orientation – alongside its sufficient divergent validity to correlates including proactive transfer, it was considered permissible.

As discussed prior, the latent variables representing the four positive psychological states hope, optimism, resilience, and self-efficacy have been treated differently in the literature: as a one-factor model, as four correlating factors, or as four constructs comprising a higher-order factor. I examined these alternatives as an intermediate step to the full measurement model. The one-factor model by which all reflective indicators load onto the same latent construct was rejected due to unacceptable model fit ($\chi^2 = 262.378(252); \text{RMSEA} = 0.105; \text{CFI} = 0.69; \text{TLI} = 0.66; \text{SRMR} = 0.116$). I then assessed the four constructs individually before estimating the most sensible way to represent them out of the remaining two alternatives.

Hope showed acceptable model fit ($\chi^2 = 58.82(9); \text{RMSEA} = 0.076; \text{CFI} = 0.97; \text{TLI} = 0.95; \text{SRMR} = 0.033$), and model fit could not be significantly improved when separating the construct’s ‘pathways’ and ‘goals’ dimensions.

Initially, optimism did not exhibit acceptable model fit ($\chi^2 = 228.17(9); \text{RMSEA} = 0.167; \text{CFI} = 0.86; \text{TLI} = 0.76; \text{SRMR} = 0.090$), but closer examination revealed effects through a ‘method factor’ caused by the three reversed (i.e. negatively worded) items. Given that the literature regularly reports these effects (see Carver et al., 2010), a second-order model was formed by which the three reversed items loaded onto a first-order factor (OptiRev), the three positively worded items loaded onto another first-order factor (OptiPos), and OptiRev and OptiPos respectively loaded onto a second-order factor called Optimism. The construct’s model fit improved
dramatically and was good ($\chi^2 = 37.82(9)$; RMSEA = 0.065; CFI = 0.98; TLI = 0.96; SRMR = 0.037).

Resilience demonstrated mediocre model fit ($\chi^2 = 54.04(9)$; RMSEA = 0.076; CFI = 0.94; TLI = 0.91; SRMR = 0.032) and the modification index clearly identified one item as problematic, which when omitted, improved model fit to good ($\chi^2 = 16(5)$; RMSEA = 0.051; CFI = 0.98; TLI = 0.97; SRMR = 0.021). Potentially the meaning of the item (“At work, I can be ‘on my own’, so to speak, if I have to.”) was not well understood by the respondents and consequently not consistently addressing the same underlying construct as the remaining five items.

Similarly, self-efficacy showed mediocre model fit ($\chi^2 = 56.66(9)$; RMSEA = 0.076; CFI = 0.94; TLI = 0.91; SRMR = 0.032) and the Modification Index pinpointed one item as problematic, which when omitted, improved model fit to good ($\chi^2 = 54.04(9)$; RMSEA = 0.076; CFI = 0.94; TLI = 0.91; SRMR = 0.032). Semantically the item does not appear to deviate much from the remaining five, albeit it is conceivable that it rather addresses adversity recovery (i.e. resilience; “Even when things are tough at work, I can perform quite well”).

Next, when estimating the competing models that involved all four positive cognitive constructs as specified above, the fit indices suggested poor solutions: modification indices consistently identified one item each for resilience and self-efficacy that showed substantial signs of cross-loading. With respect to improving model fit, attempting to omit only one item was not successful, but excluding both resulted in acceptable model fit. Then, while the four factor model provided the best fit ($\chi^2 = 466.12(162)$; RMSEA = 0.46; CFI = 0.95; TLI = 0.94; SRMR = 0.040), correlations ranged between .61-.75, indicating potentially disputable discriminant validity in this model.

I thus assessed discriminant validity for the four positive cognitive factors with each other. In less than half of the cases (5 out of 12), the values of the square root AVE for hope, optimism, resilience, and self-efficacy did exceed the values of the constructs’ correlations with each other. According to Fornell and Larcker (1981) this suggests insufficient divergence between the
four variables. As discussed in chapter 5, this situation reflects the ongoing debate about how to best conceptualise, measure, and model these four positive cognitive constructs. However, consistent with the hypotheses, a higher-order factor comprised of hope, optimism, resilience, and self-efficacy was formed. In line with Stajkovic (2006), this variable arguably represents a higher-order construct called ‘core-confidence’. Fit for this higher-order core-confidence model was good ($\chi^2 = 496.47(164)$; RMSEA = 0.48; CFI = 0.95; TLI = 0.94; SRMR = 0.041).

Next, after having evaluated the measurement model for each latent variable, all measures as specified above were then entered into a CFA, and fit was good for this measurement model ($\chi^2 = 2275.267(1202)$; RMSEA = 0.031; CFI = 0.95; TLI = 0.95; SRMR = 0.045). Aside from the discussed, all latent factors met the criteria for divergent validity considering the relationships between factor correlation and AVE as suggested by Fornell & Larcker (1981; see Table 12). Divergent validity for all latent factors was further supported through a test proposed by Anderson and Gerbing (1988). The unconstrained measurement model (M0) estimated above was compared to a series of constrained models (M1-M10) in which the relationship between each possible pair of variable was set to 1.00. A chi-square difference test subsequently compared the unconstrained and the ten constrained measurement models. A higher $\chi^2$ for a constrained model that is significant indicates that the factors that have been constrained to be equal are not extremely correlated because they carry sufficient amounts of unique variance. The $\Delta \chi^2$ for all comparisons was significant at the .001 probability level (Table 11). According to Anderson and Gerbing (1988) this would suggest that discriminant validity exists between all latent variables.

Descriptive statistics and correlations are summarised Table 12. All in all, both the construct validity and the good model fit of the post-hoc modified measurement solution presented adequate conditions to further test the hypothesized relationships in a structural model via path analysis.
Table 11. Study 2: Assessing discriminant validity for specified latent variables by comparing measurement models for all possible combinations of constrained correlations (based on Anderson & Gerbing, 1988)

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>Comparison</th>
<th>$\Delta \chi^2$</th>
<th>$\Delta df$</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>M0 Unconstrained Model</td>
<td>2275.27</td>
<td>1202</td>
<td></td>
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<td>0.95</td>
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<tr>
<td>M1 Training Transfer&lt;1&gt;Transfer Motivation</td>
<td>2596.79</td>
<td>1203</td>
<td>M0-M1</td>
<td>-321.53</td>
<td>* -1</td>
<td>0.93</td>
</tr>
<tr>
<td>M2 Training Transfer&lt;1&gt;Proactive Transfer B.</td>
<td>2612.27</td>
<td>1203</td>
<td>M0-M2</td>
<td>-337.00</td>
<td>* -1</td>
<td>0.93</td>
</tr>
<tr>
<td>M3 Training Transfer&lt;1&gt;Proactive Personality</td>
<td>3067.72</td>
<td>1203</td>
<td>M0-M3</td>
<td>-792.45</td>
<td>* -1</td>
<td>0.92</td>
</tr>
<tr>
<td>M4 Training Transfer&lt;1&gt;Core Confidence</td>
<td>3055.11</td>
<td>1203</td>
<td>M0-M4</td>
<td>-779.84</td>
<td>* -1</td>
<td>0.92</td>
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<tr>
<td>M5 Transfer Motivation&lt;1&gt;Proactive Transfer B.</td>
<td>2816.96</td>
<td>1203</td>
<td>M0-M5</td>
<td>-541.69</td>
<td>* -1</td>
<td>0.93</td>
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<td>M6 Transfer Motivation&lt;1&gt;Proactive Personality</td>
<td>3125.99</td>
<td>1203</td>
<td>M0-M6</td>
<td>-850.73</td>
<td>* -1</td>
<td>0.92</td>
</tr>
<tr>
<td>M7 Transfer Motivation&lt;1&gt;Core Confidence</td>
<td>3204.27</td>
<td>1203</td>
<td>M0-M6</td>
<td>-929.01</td>
<td>* -1</td>
<td>0.91</td>
</tr>
<tr>
<td>M8 Proactive Transfer B.&lt;1&gt;Proactive Personality</td>
<td>3160.29</td>
<td>1203</td>
<td>M0-M6</td>
<td>-885.02</td>
<td>* -1</td>
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<tr>
<td>M9 Proactive Transfer B.&lt;1&gt;Core Confidence</td>
<td>3222.21</td>
<td>1203</td>
<td>M0-M6</td>
<td>-946.94</td>
<td>* -1</td>
<td>0.91</td>
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<td>M10 Proactive Personality&lt;1&gt;Core Confidence</td>
<td>2704.77</td>
<td>1203</td>
<td>M0-M6</td>
<td>-429.50</td>
<td>* -1</td>
<td>0.93</td>
</tr>
</tbody>
</table>

Note. $\Delta \chi^2$ relates to comparison with the hypothesised M0. * denotes $\Delta \chi^2$ is significant at p<.001 (two-tailed). <1> denotes correlation is constrained to 1.00.
Table 12. Study 2: Descriptive Statistics, Scale Reliabilities, Correlations

<table>
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<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>α</th>
<th>CR</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>13</th>
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<td>1 Training Transfer</td>
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<td>2 Transfer Motivation</td>
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<td>.709</td>
<td>.865</td>
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<td>5 Core Confidence</td>
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<td>6 Hope</td>
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<td>7 Optimism</td>
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<td>8 Resilience</td>
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<td>9 Self-Efficacy</td>
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<td>10 Age</td>
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<td>-.049</td>
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<td>11 Gender</td>
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<td>-</td>
<td>-.041</td>
<td>-.062</td>
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<td>.005</td>
<td>.010</td>
<td>-.022</td>
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<td>12 Educational Level</td>
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<td>13 Work Experience (years)</td>
<td>18.23</td>
<td>10.59</td>
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<td>-.022</td>
<td>-.002</td>
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<td>14 Organisational Tenure (years)</td>
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<td>6.48</td>
<td>-</td>
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<td>-.034</td>
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<td>-.071</td>
<td>.303</td>
<td>.421</td>
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<td>16 Training Program Length (days)</td>
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<td>1.12</td>
<td>-</td>
<td>-.020</td>
<td>-.016</td>
<td>.017</td>
<td>.005</td>
<td>.005</td>
<td>-.038</td>
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<td>-.007</td>
<td>-.057</td>
<td>-.017</td>
<td>.036</td>
<td>-.069</td>
<td>-.020</td>
<td>-.032</td>
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<tr>
<td>17 Elapsed Transfer Opportunity (days)</td>
<td>213.99</td>
<td>103.86</td>
<td>-</td>
<td>-.008</td>
<td>-.129</td>
<td>-.088</td>
<td>-.018</td>
<td>.014</td>
<td>.051</td>
<td>.020</td>
<td>.038</td>
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<td>.028</td>
<td>.045</td>
<td>.132</td>
<td>.112</td>
<td>.056</td>
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</tbody>
</table>

Note. N = 949. Standard Deviation (SD); Cronbach Alpha (α); Composite Reliability (CR). Figures underlined present square root of Average Variance Extracted (AVE). Figures underlined present the square root of the Average Variance Extracted (AVE); a value >.707 equals an AVE above the suggested threshold of .5.

Table contains descriptives for Hope, Optimism, Resilience, and Self-Efficacy as independent first-order variables and as second-order factor Core Confidence.

Coding for control variables: Gender was coded as 1 for male and 2 for female; Educational Level was coded from 1 for no High School degree to 7 Ph.D. degree.

Correlation is significant at * p<.05, ** p<.01 (two-tailed).
7.4.3 Path Analysis

The first model tested was the hypothesised model (M1) presented in Figure 14. It provided a good fit to the data ($\chi^2 = 2284.99(1206); \text{RMSEA} = 0.031; \text{CFI} = 0.95; \text{TLI} = 0.95; \text{SRMR} = 0.046$), and explained 0.898 variance ($R^2$) of training transfer. I then tested two alternative models by which the higher-order core-confidence factor directly related respectively to training transfer (M2) or proactive transfer behaviour (M3).

These added paths would represent cognitive-motivational processes unaccounted for by the present transfer motivation construct. Both models fit the data almost equally well when compared to the hypothesised model (M2: $\chi^2 = 2284.97(1205); \text{RMSEA} = 0.031; \text{CFI} = 0.95; \text{TLI} = 0.95; \text{SRMR} = 0.046$; M3: $\chi^2 = 2284.69(1205); \text{RMSEA} = 0.032; \text{CFI} = 0.95; \text{TLI} = 0.95; \text{SRMR} = 0.047$). Given that the chi-square difference tests were statistically not significant, the new paths added were not significant, and no other paths estimates change in magnitude or significance, those additional parameters can be eliminated, and the smaller model (M1) can be accepted (Kline, 2011). No other competing model was substantively sensible, including those suggested through modification indices. Accordingly, alternative models did not offer a better or more meaningful solution and so the hypothesised model (M1) was accepted.

Next, I sought to ensure that the findings of this study are not biased as a result of the congeneric testing and associated measure alteration. That is, the prior omitted items (two each for self-efficacy and resilience) were re-entered and, as expected, model fit decreased. Importantly, significance levels remained and effect sizes changed only marginally, if at all, when compared with the considerably better fitting post-hoc model. This brief test simply assured that study’s findings would not be affected by the measurement post-hoc modification.

I then entered the demographic and organisational membership characteristics as control variables for the accepted structural model; they were added as exogenous factors to the regression paths. The path model
estimation showed no new significant relationships and modification indices also did not suggest any sensible new paths. Most importantly, regardless of entering any of the control variables, relationships between the focal variables did not change with respect to significance, while effects sizes differed only marginally, if at all. Consistent with the recommendation from Kline (2011), auxiliary parameters that are not significant should not be part of the model as they merely introduce noise, make the structural models less parsimonious, and decrease model fit (M1c: $\chi^2 = 2753.87(1542)$; RMSEA = 0.033; CFI = 0.94; TLI = 0.93; SRMR = 0.046). However, to account for potentially confounding effects of the study design, the elapsed transfer opportunity was entered as control measure (M1’: $\chi^2 = 2331.62(1254)$; RMSEA = 0.030; CFI = 0.95; TLI = 0.95; SRMR = 0.046).

The fit indices of all discussed models are summarised in Table 13. In sum, the hypothesised model (M1’) indeed represented the best solution, it is described graphically in Figure 15 alongside standardised path coefficients.
<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2$/df</th>
<th>Comparison</th>
<th>$\Delta \chi^2$</th>
<th>RMSEA</th>
<th>CFI</th>
<th>TLI</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>2284.99</td>
<td>1206</td>
<td>1.89</td>
<td></td>
<td>0.03</td>
<td>0.95</td>
<td>0.95</td>
<td>0.046</td>
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<tr>
<td>M2</td>
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<td>1205</td>
<td>1.90</td>
<td>M1-M2</td>
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<td>0.03</td>
<td>0.95</td>
<td>0.95</td>
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<tr>
<td>M3</td>
<td>2284.69</td>
<td>1205</td>
<td>1.90</td>
<td>M1-M3</td>
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<td>0.03</td>
<td>0.95</td>
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<td>M1'</td>
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Figure 15. Estimated Structural Model M1*: Core confidence, Transfer Motivation, Proactive Transfer Behaviour, Proactive Personality, and Training Transfer. Solid lines represent paths that were significant (all *** $p < .001$). All factor loadings significant at $p < .001$. 
7.5 Results

The significant effects (unless otherwise stated all p = < .001) for the hypothesised model M1’ were as follows: Transfer motivation was strongly predictive of training transfer (.86), supporting hypothesis H1.

Transfer motivation also exhibited a substantial relationship with proactive transfer behaviour (.67), with the latter in sequence having a small association with training transfer (.14), supporting H2 and H3a. The results also support H3b, suggesting that proactive transfer behaviour partially mediates the relationship between transfer motivation and training transfer (indirect effect = .09).

Proactive personality showed a small relationship with proactive transfer behaviour (.14), supporting hypothesis H4a. Support was also found for H4b, as the indirect effect (p = <.01) of proactive personality onto training transfer was significant yet very small (.02).

Core-confidence was moderately positively related to transfer motivation (.39), supporting H5a. Also, core-confidence had a total indirect effect on training transfer (.37), via transfer motivation (.34), suggesting a full mediation and supporting H5b; and to a lesser extent via transfer motivation and proactive transfer behaviours (.04). There were no other significant direct or indirect paths.

7.6 Discussion

This discussion focuses on the interpretation of study 2 findings. Integrated theoretical and practical implications spanning the entire research are discussed in chapter 9.

7.6.1 Transfer Motivation

The study provides support for the proposition that being motivated for transferring what one has learned through training is associated with higher
levels of training transfer. Trainees that appreciate the utility of applying the training, believe they have the ability and resources to do so, and feel positively activated about making use of it, are more likely to report increased levels of training transfer.

According to the results, transfer motivation acts as a mediator of the influence of more distal factors (i.e. core confidence) on training transfer and also drives more proximal influences on transfer (i.e. proactive transfer behaviour). This finding of the centrality of transfer motivation in the training transfer process is consistent with prior findings (e.g. Colquitt et al., 2000; Facteau et al., 1995).

### 7.6.2 Proactivity

A second major finding of this study was that proactive behaviour is significantly related to the transfer of training. The relationships with training transfer were small, yet significant.

This relationship remains significant even when accounting for the effect of more dispositional characteristics in form of proactive personality. While proactive personality had a small significant relationship with proactive transfer behaviours, it was not directly related to training transfer, and its indirect effect on training transfer was marginal. In line with arguments made by Tornau and Frese (2013), the behavioural goal-directed side of proactivity appears particularly relevant for training transfer.

The findings support the conclusion that such proactive transfer behaviours need to be motivated. Individuals who reported higher transfer motivation appear to seize more opportunities and create situations for applying trained competencies at work.

As theorised, proactive training transfer activities did not exclusively explain training transfer. Instead, they accounted for a small but significant proportion. This mediation role would suggest that training transfer is to a substantial degree a reactive function, but at the same time it involves degrees of freedom for self-initiation. Importantly, the study provides the
first empirical evidence that proactive goal self-regulatory behaviours are relevant for effective training transfer.

Lastly, it was proposed that proactive transfer behaviour comprises cognitive and behavioural elements that are organised in a self-regulation framework of envisioning, planning, enacting, and reflecting. While the construct appears conceptually sound, as supported by similar work by Bindl et al. (2012), the data of this study did not support the multi-facet structure. It remains to be seen whether this would change in future research. For example, tracking these factors over time or manipulating them under controlled conditions would allow isolating and understanding better the individual elements of proactive self-regulated training transfer. The high factor correlations may also be a function of the measures employed. More research needs to look at the way in which these behaviours are measured, and deliberately developed and validated measures would then lead to the differentiation of proactive transfer behaviours.

7.6.3 Positive Cognitive States

The study also supported the proposition that positive cognitive states in the form of core confidence are relevant for training transfer. As theorised, these cognitions about work do not affect training transfer directly but via transfer motivation. In other words, individuals’ thoughts and beliefs about their capacity for achieving work goals appear integral for psychological states and decisions about transferring from training. This suggests that how people generally view their abilities and experiences at work also affects how effective a training intervention can be.

7.7 Limitations

This study has several limitations, including potential common method bias due to its cross-sectional design. To remedy against such bias, temporal separation in capturing focal construct data is desirable. A longitudinal
research design is therefore used to test the model in the study that is described in the next chapter.

Although procedural remedies in this study involved ensuring respondent anonymity and carefully designed scale items, the use of self-report data for both independent and dependent variables involves the possibility that common method variance represents an alternative explanation of observed relationships. That is, the relationships between the variables may be artificially increased, for instance the large effect size between transfer motivation and training transfer. Statistically, the effects of such measurement error were examined. Two tests for the presence of equal method variance returned no concerning results.

Practically, there seems no other plausible or effective way to measure individuals’ cognitive or motivational states other than by asking a person, as they represent intra-psychic mechanisms. The same applies for the self-regulation of proactive transfer, especially since observing them via third party judgement would also involve substantial error, in addition to being labour intensive. Yet, capturing independent measures relating to proactive transfer behaviours may be a suggestion for future research that involves more knowledge and control over the transfer environment. By the same token, there may also be a retrospective bias in regards to the amount transferred (Blume et al., 2010), or even the quality of what resulted from training (Chiaburu et al., 2010). Future research consequently should assess training transfer through a different source such as a supervisor or even objectively by means of job performance indicators.

However, it is a strength of this study that it made use of a highly heterogeneous sample comprised of working age population individuals associated with a broad range of trained competencies, training courses, organisational types and levels, etc. A large number of studies in the training literature employ samples comprised of e.g. tertiary students or sales personnel; potentially a too limited approach to study a phenomenon that applies to highly heterogeneous population. So while the present study design and sample configuration did not allow for the implementation of specific
training transfer/job performance observations, conclusions of this study, albeit limited, may be considered more generalizable.

7.8 Conclusion

This study has provided an initial empirical test of the full set of propositions encompassed by Chapters 2 to 5. These suggested that (1) positive psychological states arising in respect of work are relevant for training transfer; (2) training transfer is in part the result of proactive transfer behaviours; and (3) transfer motivation is a key factor and central mediator of the relationships between work-related positive psychological states and training transfer.

In this chapter, a model summarising these proposed relationships was presented (Figure 14). The findings of the subsequent empirical investigation were supportive of all the hypotheses derived from these proposed relationships.

In the next chapter, a further empirical test of this model is reported, one that employs a longitudinal research design.
CHAPTER 8

STUDY 3: A LONGITUDINAL STUDY OF THE EFFECTS OF POSITIVE COGNITIVE STATES AND TRANSFER MOTIVATION ON PROACTIVE TRANSFER BEHAVIOUR AND TRAINING TRANSFER

8.1 Aim & Hypotheses

Replication is imperative in scientific inquiry (Bauernfeind, 1968; Schafer, 2001) and while study 2 supported the proposed model and associated hypotheses, its cross-sectional design means that it is not possible to fully rule out common method bias. The purpose of the present study is to provide
a more robust test for the proposed relationships among the focal variables. Utilising a longitudinal design helps diminish potential effect size inflation, reduce method bias concerns, and permit stronger inferences to be made about the direction of causality (Conway & Lance, 2010; Little, Card, Preacher, & McConnell, 2009).

Accordingly, employees carry into a given training their core confidence about work which shapes the transfer motivation to eventually apply the competencies learned. This transfer motivation subsequently determines the extent of training being transferred at work. The process of putting new competencies to use at work involves varying degrees of proactivity, mainly behaviours which need to be brought about by higher levels of transfer motivation. The study model (Figure 16) and hypotheses are shown next.

\textbf{H1:} Transfer motivation is positively related to training transfer.

\textbf{H2:} Transfer motivation is positively related to proactive transfer behaviour.

\textbf{H3a:} Proactive transfer behaviour is positively related to training transfer.

\textbf{H3b:} Proactive transfer behaviour partially mediates the relationship between transfer motivation and training transfer.

\textbf{H4a:} Proactive personality is positively related to proactive transfer behaviour.

\textbf{H4b:} Proactive transfer behaviour mediates the relationship between proactive personality and training transfer.

\textbf{H5a:} Core-confidence (hope, optimism, resilience, self-efficacy) is positively related to training transfer.

\textbf{H5b:} The relationship between core confidence and training transfer is mediated by transfer motivation.
Figure 16. Hypothesised model for replicating relationships between predictors and mediators on training transfer
8.2 Sample & Procedure

The longitudinal survey design was implemented in the following way. A set of suitable training courses was identified from a pool of open training programs offered by a major Australian training provider. The 17 courses selected had instruction periods between 2-7 full days, took place in a typical class-room environment, were not restricted in access by particular criteria or organisational association, and covered a broad range of more open competencies: leadership, people and performance management, human resources, project management, negotiation, communication, and finance.

The study involved three waves of data collection. Each participant was asked to respond to a printed questionnaire on arrival, before the course began (T1); at the end of the course on exit (T2); and to an online survey four weeks after the last training day (T3). This follow-up period was determined on the basis of Baldwin and Ford (1988) arguing that a critical period for transfer occurs immediately following the training. It would appear that after about four weeks there has been, on average, substantial opportunity to apply at work what was learned in the respective courses.

The dual means of data collection prompted no concerns given that prior research consistently finds paper-based and web-based surveys to generate data of equivalent quality (e.g. Greenlaw & Brown-Welty, 2009; Lonsdale, Hodge, & Rose, 2006; Riva, Teruzzi, & Anolli, 2003). Moreover, participants in the present study could not choose a particular survey mode; instead all responded under the same survey conditions at a given measurement wave.

At the beginning of each course the trainer read a description of the research project with instructions including the option to withdraw at any time if anyone had objections to the study. While complete confidentiality was assured, responses had to be matched over time, and so participants were asked to provide their first and last name alongside a valid email address on each printed questionnaire. Trainers and administrators who assisted the data collection confirmed very few explicit objections to survey participation, suggesting an overall response rate of more than 90% at the onset of each course. Participants were invited by email to the follow-up
survey online and reminded twice over the duration of two weeks if no response had been recorded.

Participants’ age ranged from 21 to 68 with a mean of 38.1 years, 62.1% respondents were male, and 95.0% worked full-time. A total of 365 individuals participated over the course of the three data collection waves by completing at least one questionnaire. Sample sizes (response rates) are: \(N_1 = 343\) (94%), \(N_2 = 335\) (92%), \(N_3 = 113\) (31%), and \(N = 94\) (26%) respondents completed all three questionnaires. Trainers explained the slight fluctuation in printed questionnaire completion (\(N_1, N_2\)) with trainees not attending all sessions, being late, or having to exit the class-room early. The response attrition for \(N_3\) appears typical for longitudinal survey research, especially when compared to the very high response rates resulting from the in-class survey environment in which the first two survey waves may have been perceived as integral to the class room experience.

8.3 Measures

The longitudinal nature of this study required participants to complete two paper-based questionnaires within the constraints of a professional training activity, plus responding to an additional follow-up survey online. In agreement with the training provider, it was important to not impede the actual learning experience, and also to pre-empt survey fatigue in the interest of maximising completion rates. Thus, questionnaire length for the three measurement waves had to be kept to a minimum, and so for some variables shorter measures were used based on those employed in study 2 (see Appendix 11.1).

Core-confidence was measured before the training course began (T1). Items were chosen from those employed in study 2 on the basis of exhibiting the strongest factor loadings and no cross-loadings: 3 items were chosen each for optimism, resilience, and self-efficacy; 4 items were selected for hope, two each equally representing the construct’s goals and pathways dimension. Of the total 13 core-confidence items selected for the present study, 7 match those employed in the 12 item Psychological Capital questionnaire (PCQ-12),
arguably resulting from extensive psychometric evaluation (Luthans et al., 2007; Luthans, Youssef, et al., 2006a). *Transfer motivation* was measured at the end of given training course (T2) using the TM scale developed in the present research and described in chapter 7. *Proactive personality* was measured (T2) using the same 6 items as in study 2. *Proactive Transfer goal self-regulation* was captured in the follow-up questionnaire (T3) with the 8 strongest loading items identified through study 2, whereby 2 items each represented the dimensions envision, plan, enact, and reflect. *Training transfer* was captured in the follow-up questionnaire (T3) and involved the same measures as in study 2. *Control Measures* involved the same as in study 2: Age, gender, organisational tenure, job tenure, total work experience, educational level, and elapsed transfer opportunity.

### 8.4 Analysis

#### 8.4.1 Data Screening

Data were screened for multicollinearity and normality with items showing skewness between -1.30 and 0.47 and kurtosis between -0.43 and 4.68. This indicated no severe violation of the principal normality assumption (Kline, 2011) and thereby allowed maximum-likelihood (ML) estimation in Mplus to conduct SEM.

Missing data analysis revealed one noticeable pattern, namely the response attrition for measurement wave 3, resulting in 69% of cases missing. Further missing data examination finds that between 6.1% and 8.2% of observations at T1 to T3 are missing. Missing data pattern analysis via SPSS and Mplus suggest no systematic dependencies. This likely reflects the reported reality of few participants randomly not being present in the classroom during surveying or responses on printed questionnaires being ambiguous and thus coded as missing. Most importantly, results of an ANOVA between those cases who completed the follow-up questionnaire and those who did not showed no significant differences on any variables measured. Accordingly, there was no association between the propensity for
missing data and the values of the foci variables or demographics in the data set. It can be concluded that the data can be treated as missing completely at random (MCAR; Little & Rubin, 2002) and for the employed SEM analysis is “ignorable” (Graham, 2009).

As mentioned prior, ML estimation in Mplus handles missing data and parameter estimation in a single step; the imputation uses all available data, or simply full information maximum-likelihood estimation (FIML). Notwithstanding, especially with regards to missing cases at T3, this handling of the missing data might require some explanation to assure confidence in estimated findings. Graham (2009) conceptually and practically discusses and dismisses potential missing data handling concerns, two of which are relevant here. First, missing data imputation is not making up data. While imputation “is the process of plugging in plausible values where none exist […] the point of this process is not to obtain the individual values themselves. Rather, the point is to plug in these values (multiple times) in order to preserve important characteristics of the data set as a whole.” (p. 559). Second, including the dependent variable (DV) in the imputation process is decidedly warranted because then “all relevant parameter estimates are unbiased, but excluding the DV from the imputation model for the IVs and covariates can be shown to produce biased estimates” (p. 559). Moreover, simulation studies using FIML produce correct estimates with more than 50% missing data in the DV (Allison, 2009; Buhi et al., 2008; Enders & Bandalos, 2001; Enders, 2001). In this vein, Graham (2009) explains that the main consequence of MCAR missingness may be loss of statistical power, whereby model estimation may be depleted. Accordingly, as long as SEM model fit criteria are met, analyses based on data that can be treated as MCAR will yield unbiased parameter estimates that are close to population values.

Taken together this means that the relationships of interest can be estimated from the available data. However, to make a strong case for eventual findings a supporting analyses will be conducted using only complete cases. That is, in addition to estimating the structural model with all available data (N=365), the same model will be estimated again by using
only those cases that completed all three measurement waves (N = 94; 26%). Should the significance, direction, and effect size of findings from the two models be approximate congruent, any missing data bias concerns can be considered less relevant. Overall, the data screening allowed proceeding with the analysis.

### 8.4.2 Measurement Models

Congeneric testing via CFA for each latent variable was based on the same model fit indices criteria as in study 1 and study 2. All items showed significant (P = .001) loadings on their intended factor.

Training transfer showed good model fit ($\chi^2 = 3.39(2); \text{RMSEA} = 0.069; \text{CFI} = 0.99; \text{TLI} = 0.96; \text{SRMR} = 0.030$). Transfer motivation exhibited the best fit with can-do, reason-to, and energised-to representing distinct factors ($\chi^2 = 77.18(24); \text{RMSEA} = 0.048; \text{CFI} = 0.99; \text{TLI} = 0.98; \text{SRMR} = 0.022$). Given the high correlations (.72-.76) among the three factors, they were loaded onto a second-order factor with identical model fit. Proactive transfer behaviour also did exhibit poor dimensional separation between envision, plan, enact, and reflect (correlations between .93-.96; $\chi^2 = 15.77(14); \text{RMSEA} = 0.033; \text{CFI} = 0.99; \text{TLI} = 0.96; \text{SRMR} = 0.018$). A one-factor solution was thus considered appropriate for this study and had a good fit ($\chi^2 = 28.93(20); \text{RMSEA} = 0.063; \text{CFI} = 0.99; \text{TLI} = 0.98; \text{SRMR} = 0.025$). Proactive personality initially showed poor model fit ($\chi^2 = 31.535(9); \text{RMSEA} = 0.086; \text{CFI} = 0.93; \text{TLI} = 0.88; \text{SRMR} = 0.041$), whereby modification indices identified one item as problematic (“If I believe in an idea, no obstacle will prevent me from making it happen.”). Omitting this item lead to good model fit ($\chi^2 = 10.536(5); \text{RMSEA} = 0.057; \text{CFI} = 0.98; \text{TLI} = 0.96; \text{SRMR} = 0.026$).

Hope showed good model fit ($\chi^2 = 2.37(2); \text{RMSEA} = 0.023; \text{CFI} = 0.99; \text{TLI} = 0.99; \text{SRMR} = 0.015$). Individually, the solutions for optimism, resilience, and self-efficacy were ‘just identified’ (i.e. parameter estimates with 3 items have a unique solution that perfectly reproduces the observed matrix). An intermediate four factor measurement model revealed that the
four latent variables for hope, optimism, resilience, and self-efficacy correlated strongly (.74-.89; $\chi^2 = 88.43(59)$; RMSEA = 0.038; CFI = 0.96; TLI = 0.94; SRMR = 0.041), and higher than their respective squared AVE (.60-68), suggesting insufficient overall discriminant validity among the positive psychological states. Given a one-factor model was a poor fit ($\chi^2 = 165.46(65)$; RMSEA = 0.067; CFI = 0.86; TLI = 0.84; SRMR = 0.060), the four factors again formed a higher-order core-confidence construct with acceptable fit ($\chi^2 = 107.19(61)$; RMSEA = 0.047; CFI = 0.94; TLI = 0.93; SRMR = 0.047).

The full measurement model comprising five latent variables had a good fit ($\chi^2 = 946.053(685)$; RMSEA = 0.032; CFI = 0.94; TLI = 0.93; SRMR = 0.075). Other than discussed, all variables met suggested criteria for convergent and divergent validity (Fornell & Larcker, 1981). Values for internal consistency also met suggested standards (> .70; Nunnally & Bernstein, 1994). Descriptive statistics and correlations are summarised in Table 14. In summary, these were adequate conditions to test the hypothesised relationships via a structural model.
Table 14. Study 3: Descriptive Statistics, Scale Reliabilities, Correlations

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>α</th>
<th>CR</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Transfer</td>
<td>3.47</td>
<td>0.59</td>
<td>0.72</td>
<td>0.82</td>
<td>.731</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Transfer Motivation</td>
<td>4.14</td>
<td>0.42</td>
<td>0.91</td>
<td>0.92</td>
<td>.460**</td>
<td>.742</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proactive Transfer Behaviour</td>
<td>3.00</td>
<td>0.80</td>
<td>0.96</td>
<td>0.96</td>
<td>.645**</td>
<td>.485**</td>
<td>.827</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Proactive Personality</td>
<td>3.73</td>
<td>0.48</td>
<td>0.70</td>
<td>0.71</td>
<td>.159</td>
<td>.250**</td>
<td>.273**</td>
<td>.615</td>
<td></td>
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<tr>
<td>Core Confidence</td>
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<td>0.37</td>
<td>0.77</td>
<td>0.89</td>
<td>.165</td>
<td>.304**</td>
<td>.312**</td>
<td>.628**</td>
<td>.755</td>
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<td>Age</td>
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<td>9.24</td>
<td>-</td>
<td>-</td>
<td>.042</td>
<td>-.019</td>
<td>-.053</td>
<td>.004</td>
<td>.041</td>
<td></td>
<td></td>
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<td>Gender</td>
<td>1.39</td>
<td>0.49</td>
<td>-</td>
<td>-</td>
<td>.024</td>
<td>.161</td>
<td>-.028</td>
<td>-.051</td>
<td>.027</td>
<td>-.181**</td>
<td>-</td>
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<tr>
<td>Educational Level</td>
<td>2.77</td>
<td>1.67</td>
<td>-</td>
<td>-</td>
<td>-.071</td>
<td>.022</td>
<td>.024</td>
<td>.143</td>
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<td>-.115*</td>
<td>.071</td>
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<tr>
<td>Work Experience (years)</td>
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<td>-</td>
<td>.078</td>
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<td>.117</td>
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<td>-.162**</td>
<td>-.250**</td>
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<td>Organisational Tenure (years)</td>
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<td>.087</td>
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<td>-.108*</td>
<td>-.111*</td>
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<tr>
<td>Job Tenure (years)</td>
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<td>-</td>
<td>-</td>
<td>-.004</td>
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<td>.249**</td>
<td>-.024</td>
<td>.960</td>
<td>.241**</td>
<td>.307**</td>
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<tr>
<td>Elapsed Transfer Opportunity (days)</td>
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<td>15.93</td>
<td>-</td>
<td>-</td>
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<td>.086</td>
<td>.177</td>
<td>.080</td>
<td>.139</td>
<td>.082</td>
<td>-.011</td>
<td>.101</td>
<td>.122</td>
<td>.020</td>
<td>.137</td>
</tr>
</tbody>
</table>

Note. N = 113-343. Standard Deviation (SD); Cronbach Alpha (α); Composite Reliability (CR). Figures underlined present the square root of the Average Variance Extracted (AVE); a value >.707 equals an AVE above the suggested threshold of .5. Coding for control variables: Gender was coded as 1 for male and 2 for female; Educational Level was coded from 1 for no High School degree to 7 Ph.D. degree. Correlation is significant at * p<.05, ** p<.01 (two-tailed).
8.4.3 Path Analysis

A structural model (M1) was specified as shown in Figure 16. It provided acceptable fit to the data ($\chi^2 = 945.299(689); \text{RMSEA} = 0.032; \text{CFI} = 0.94; \text{TLI} = 0.93; \text{SRMR} = 0.075$), and explained 0.478 variance ($R^2$) of training transfer. Similar to Study 2, I then tested two alternative models by which the higher-order core-confidence factor directly related respectively to training transfer (M2) or proactive transfer (M3), representing cognitive-motivational pathways unaccounted for by transfer motivation. Both models fitted the data slightly less well when compared to the hypothesised model (M2: $\chi^2 = 947.077(688); \text{RMSEA} = 0.032; \text{CFI} = 0.93; \text{TLI} = 0.93; \text{SRMR} = 0.075$; M3: $\chi^2 = 944.885(688); \text{RMSEA} = 0.032; \text{CFI} = 0.93; \text{TLI} = 0.93; \text{SRMR} = 0.076$). The new paths added were not significant, no other paths estimates changed in magnitude or significance, and chi-square difference tests were not significant Table 15. Further models were not substantively sensible and the hypothesised model was thus supported (Figure 17).

In view of the discussed missing data scenario, the next step involved re-estimating the model by using data from only those cases that completed all three measurement waves. Given that $N = 94$ would not provide sufficient statistical power to identify a model using latent variables with a total of 39 indicators (Matsunaga, 2008), a parcelling approach was taken that improved the ratio of sample size to estimated parameters (Bentler & Chou, 1987).

Parcelling involves the creation of aggregate-level indicators of several individual items. These composite scale scores are then submitted to analyses with SEM, rather than the raw score from the individual questionnaire responses (Coffman & MacCallum, 2005). The literature on parcelling remains somewhat controversial (Little, Cunningham, Shahar, & Widaman, 2002), whereby those arguing against it claim parcelling camouflages measurement error (Marsh, Lüdtke, Nagengast, Morin, & Von Davier, 2013), while proponents demonstrate its utility (Graham & Tatterson, 2000). However, the present research can be agnostic about this debate because it employs parcelling for the sole purpose of reducing concerns about potential imputation bias. Here, parcelling is used to estimate a solution for
comparison with an arguably more precise structural model that is based on individual items.

Using the arithmetic mean, parcels were created according to the latent constructs, some of which then formed higher-order factors (Landis, Beal, & Tesluk, 2000; Little et al., 2002). Specifically, the four parcels hope, optimism, resilience, and self-efficacy loaded onto core-confidence. The three parcels can-do, reason-to, and energised-to loaded onto transfer motivation. The four parcels envision, plan, enact, and reflect loaded onto proactive transfer behaviour. To preserve some measurement error for proactive personality and training transfer, both constructs were randomly parcelled into two composites each, based on their scales odd and even item numbering (Landis et al., 2000).

Using the resulting 15 parcel indicators for the 5 latent variables, the fit of the measurement model was good ($\chi^2 = 119.886(80)$; RMSEA = 0.072; CFI = 0.95; TLI = 0.94; SRMR = 0.055). Specifying regression paths identically to model M1 above, the partially disaggregated structural model M1p had a good fit ($\chi^2 = 121.423(84)$; RMSEA = 0.068; CFI = 0.95; TLI = 0.94; SRMR = 0.056). Importantly, when compared to the structural model using imputation, the existing paths remained significant (see Figure 18). Equally, the alternative models (M2p and M3p) did not have a significantly better fit and the additional paths were also not significant (Table 15). Therefore, the Mplus FIML processing did not overly distort the findings and it can be concluded that concerns relating to biased findings due to missing data can be dismissed.

As a last step, and using all available data and cases, participants’ demographic and organisational membership characteristics and elapsed transfer opportunity were entered as control variables to the regression paths of model M1. None of these auxiliary variables had a significant effect or noticeably changed estimated relationships between the focal variables; however, they resulted in poor model fit ($\chi^2 = 1575.992(977)$; RMSEA = 0.087; CFI = 0.69; TLI = 0.66; SRMR = 0.095). In line with Kline (2011), these auxiliary parameters were thus eliminated, and the hypothesised model M1 was accepted for interpretation.
The accepted structural models are described graphically next in Figure 17 and Figure 18. In the interest of clarity, only significant relationships ($p < 0.05$) are shown alongside standardised path coefficients.
<table>
<thead>
<tr>
<th>Model</th>
<th>Hypothesised model</th>
<th>Additional path from core-confidence to training transfer</th>
<th>Additional path from core-confidence to proactive training transfer</th>
<th>M1p as M1 using complete cases parcel estimation</th>
<th>M2p as M2 using complete cases parcel estimation</th>
<th>M3p as M3 using complete cases parcel estimation</th>
</tr>
</thead>
<tbody>
<tr>
<td>χ²</td>
<td>df</td>
<td>χ²/df</td>
<td>Comparison</td>
<td>Δχ²</td>
<td>RMSEA</td>
<td>CFI</td>
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<tr>
<td>945.30</td>
<td>689</td>
<td>1.37</td>
<td></td>
<td></td>
<td>0.032</td>
<td>0.93</td>
</tr>
<tr>
<td>947.08</td>
<td>688</td>
<td>1.38</td>
<td>M1-M2</td>
<td>-1.78</td>
<td>0.032</td>
<td>0.93</td>
</tr>
<tr>
<td>947.08</td>
<td>688</td>
<td>1.38</td>
<td>M1-M3</td>
<td>-1.78</td>
<td>0.03</td>
<td>0.93</td>
</tr>
<tr>
<td>121.42</td>
<td>84</td>
<td>1.45</td>
<td></td>
<td></td>
<td>0.07</td>
<td>0.95</td>
</tr>
<tr>
<td>120.51</td>
<td>83</td>
<td>1.45</td>
<td>M1'-M2'</td>
<td>0.92</td>
<td>0.07</td>
<td>0.95</td>
</tr>
<tr>
<td>121.36</td>
<td>83</td>
<td>1.46</td>
<td>M1'-M3'</td>
<td>0.06</td>
<td>0.07</td>
<td>0.95</td>
</tr>
</tbody>
</table>
Figure 17. Estimated Structural Model M1: Core-confidence, Transfer Motivation, Proactive Transfer Behaviour, Proactive Personality, and Training Transfer. Solid lines represent paths that were significant (* p < .05, ** p < .01, *** p < .001). All factor loadings significant at p < .001.
Figure 18. Estimated Structural Model M1p: using complete cases only (N = 94) via item parcels to re-estimate Path Model A1 and compare findings so as to dismiss potential distortion as the result of missing data (69%) imputation processes. No severe differences emerged, rendering findings on the basis of FIML permissible.
8.5 Results

Unless otherwise stated, all \( p < .001 \). The direct relationship from transfer motivation to training transfer was not significant, not supporting hypothesis H1. However, transfer motivation significantly predicted eventual proactive transfer behaviours (.46), supporting H2. Proactive transfer behaviours in turn significantly related to training transfer (.54), supporting H3a. Together this means that H3b was not supported by means of being a partial mediation. Instead proactive transfer behaviours fully mediated the transfer motivation and training transfer relationship (indirect effect = .27).

Proactive personality showed a small relationship with proactive transfer behaviour (.18; \( p = < .05 \)), supporting hypothesis H4a. No support was found for H4b, the indirect effect of proactive personality onto training transfer was not significant.

Core confidence was moderately positively related to transfer motivation (.31), supporting hypothesis H5a. Given there was no direct path from transfer motivation to training transfer, H5b could not be assessed. Core confidence had a total indirect effect on training transfer (.15) via transfer motivation and proactive transfer behaviours. There were no other significant direct or indirect paths.

8.6 Discussion

Theoretical and practical considerations spanning the entireness of the present research are discussed integrated in chapter 9 following. The focus here was re-assessing findings derived prior through study 2. Using a more robust longitudinal research design, the present Study 3 by and large confirms prior found relationships.

The data show that people who at the end of training are motivated to apply what they have learned report higher levels of training transfer about 40 days later. While this further supports transfer motivation as a key concept, present findings however suggest that this relationship is fully mediated by proactive transfer behaviour. In contrast, findings from study 2
would suggest that proactive transfer behaviour only partially mediate the transfer motivation to training transfer relationship.

An explanation may be the elapsed time after exiting the training, which differs substantially between the two samples. That is, participants of the present study 3 reporting higher levels of training transfer potentially did so as a function of substantial self-initiative to apply what they learned in the early stages of returning from training. This would give support to Baldwin and Ford (1988) suggesting that a critical period for transfer occurs immediately following the training. Accordingly, individual proactivity appears to be a key mechanism for realising the successful implementation of new competencies. Future research could employ a more controlled transfer environment and investigate what factors and amount of time facilitate or inhibit such proactive transfer attempts.

An alternative explanation relates to the study design by which training transfer and proactive transfer behaviours had to be measured at the last and thus same measurement wave. Future research consequently might involve tracking individuals over longer and multiple times into the post-training period, for example via diary studies, thereby reducing potential method effect inflation while capturing qualitative information of how and why self-initiated transfer comes about.

The last finding associated with proactivity relates to the role of proactive personality. Again, proactive personality had a small direct effect with proactive transfer behaviour but conversely not an indirect effect onto subsequent training transfer. However, although study 2 found support for such an indirect effect, it was marginal. For the transfer of training this indicates the importance of motivating proactive behaviour, while proactive dispositions are less relevant (Tornau & Frese, 2013).

The study also replicated the finding that positive cognitive states in the form of core-confidence are relevant for training transfer. What is important to note is that those thoughts and beliefs about work with which people enter a training course determine their transfer motivation on exit, with discussed effect on training transfer later. Accordingly, positive cognitions that other research found to shape the setting and striving for work goals, also relate to
the setting and striving for goals associated with training transfer. This supports the notion that formal training is an integral episode of individuals’ work experiences and not an isolated act. Henceforth, how people appraise their work scenario and abilities influences the degree of training transferred and training effectiveness should be increasingly viewed as a systemic function.

In summary, the present replication confirms study 2 and gives support to the proposition that individual psychological states about work at course beginning shape transfer approaches and outcomes after training.

### 8.7 Limitations

Although this study employed a more robust longitudinal design, it has limitations. First, while temporal separation of the focal measures was implemented, it could not be achieved for the proactive transfer behaviour and training transfer variables, which had to be captured in retrospect. The experienced sample attrition post training is a realistic indicator that continuous surveying requires an entirely different study implementation which is more suited for managing survey fatigue. Diary studies embedded into a particular organisation or training course may allow for this level of control, whereby this likely would offset a strength of this study: a sample comprised associated with a heterogeneous group of employees and training courses etc.

By the same token, independent measures relating to training transfer are clearly the next step and could include supervisory or peer ratings or objective organisational meta-data on e.g. sales or costs. This might be best achieved via a training evaluation study by which a quasi-experimental design rules out alternative explanations, so that observed changes can be attributed to and differentiated between training and individual features.
8.8 Conclusion

This study employed a longitudinal design for testing the model outlined in Figure 16. It showed that positive psychological states and proactivity are relevant for training transfer. A significant amount of variance in transfer motivation can be attributed to positive thoughts and beliefs about work that likely arise on the job. In line with extant research the study showed that the level of transfer motivation with which individuals exit a course predicts the amount of subsequent training transfer at work. To varying degrees it may be inferred that this motivation converts into proactive transfer behaviours by which individuals self-initiate the application of new competencies at work.

While design and measurement challenges in this study do not allow definitive inferences about the degree of proactivity involved, it appears that motivated behaviour is the most crucial component while dispositional proactive personality plays a minor role, if at all. The positive cognitions about work, or core confidence, indirectly shaped those proactive transfer behaviours. Together this strengthens the argued notion that training transfer is not an isolated act but rather a function of a number of factors, some of which people carry from the work environment into training and back.
The aim of the present research was to examine the influence of three inter-related psychological processes on the transfer of training. It was argued that (1) positive cognitive states relating to work determine (2) transfer motivation, which in turn influences (3) the proactive self-regulation of training transfer behaviours, and training transfer. By and large, the structural equation models in study 2 and 3 provided support for these propositions, also in using measures of training-related motivation that were developed and tested in study 1. This chapter integrates the research findings and their contributions, discusses potential limitations, and considers the theoretical and practical implications.
9.1 Summary & Contributions

It was hypothesised that the positive psychological states of hope, optimism, resilience, and self-efficacy on the subject of work act as antecedents to transfer motivation, and subsequently affect training transfer. Results from studies 2 and 3 support this argument on the basis of the four positive-laden constructs forming a higher-order ‘core confidence’ factor. Study 3 showed that an individuals’ core confidence about setting and achieving work goals ultimately predicted the transfer of training about 40 days later via transfer motivation at training end. This adds to the notion that the transfer of training should not be seen as an isolated concept but as an integral part of work (Baldwin & Magjuka, 1997; Kontoghiorghes, 2002, 2004). That is, the transfer of training begins even before learners are entering the classroom. It also suggests that certainty beliefs about whether one can handle what one needs to do at work (Stajkovic, 2003, 2006) are an important factor for eventually achieving transfer goals.

Proactive transfer behaviours were hypothesised to affect training transfer. Results from both study 2 and 3 support the premise that self-initiated acts of envisioning, planning, enacting, and reflecting about the application of new competencies do indeed relate to training transfer. Both studies further found that individuals’ disposition or personality of being more proactive had a negligible influence on transfer. This supports arguments made by Tornau & Frese (2013) concerning the need to concentrate research and practice on the behavioural side of proactivity. Study 2 also showed that proactive transfer behaviours need to be motivated, and study 3 replicated this finding, whereby those reporting higher levels of transfer motivation at training end reported 40 days later that they had engaged in more proactive transfer behaviours.

Another contribution of the present research is thus the introduction of the proactivity concept to the training transfer literature. The findings suggest that proactivity represents a significant element in the transfer of training, and proactive transfer behaviours need to be encouraged.
Findings discussed above further confirm the importance of transfer motivation for training effectiveness, it is a key construct for the transfer of training (Gegenfurtner, Vauras, Gruber, & Festner, 2010). Results from study 2 and 3 show that transfer motivation represents a central mediating mechanism, shaped by thoughts and beliefs about work, and fuelling training transfer. However, the direct relationship between transfer motivation and training transfer was only significant in study 2, in study 3 this was an indirect relationship which was fully mediated via proactive behaviours. It is thus an important issue for future research to better understand the importance and change of motivational trajectories over the time immediately after the training.

The transfer motivation construct is part of a larger framework of training-related motivation which has been conceptually developed in response to shortcomings associated with existing motivational constructs as they relate to training effectiveness. Study 1 therefore systematically developed measures that relate to three interrelated stages in the training process: participation motivation, learning motivation, and transfer motivation. Each motivational stage comprises psychological dimensions of can-do, reason-to, and energised-to motivation which shape goal setting and striving. Psychometric properties of the resulting scales met suggested criteria for item adequacy and internal consistency.

Results by and large further support propositions about can-do, reason-to, and energised-to being distinct motivational mechanisms or processes (Parker et al., 2010). In spite of this, high dimensional correlations in all studies suggest that it is sensible to specify participation motivation, learning motivation, and transfer motivation as higher-order factors. The motivational theory employed supports such superordinate models and they may be favoured in applied research. Additionally it was hypothesised that levels of participation motivation before training would predict subsequent levels of learning motivation and ultimately levels of transfer motivation at course exit. Results from studying a longitudinal sample corroborate propositions about downstream trajectories (Beier & Kanfer, 2009), whereby the levels of
earlier can-do, reason-to, and energised-to motivation predict subsequent levels of respective dimensions over time.

Refining training-related motivation in combining complementary motivational mechanisms is thereby another conceptual and operational contribution. The multi-stage, multi-dimensional framework and its measures are parsimonious, universal, and practical, and may be considered a step forward for the research and facilitation of training transfer.

9.2 Limitations

The present research is not without limitations. To begin, common method bias may have affected the results and although this has been noted in prior chapters, it needs to be discussed. First, the cross-sectional design of study 2. Although study 3 made a much stronger case for common method problems not overly affecting investigated relationships than study 2, several key variables (proactive transfer behaviour and training transfer) were still measured at the same point in time.

Also, both studies did rely on self-report estimates of positive cognition, motivation, behaviour, and outcomes. As noted, it is challenging to imagine how intra-psychic mechanisms such as states of hope or can-do motivation may be assessed other than by the self. Nevertheless, the extent of training transfer and proactive behaviours at work could be assessed by someone other than the trainee/employee, for example peers or supervisors. Future research should seek to replicate the present findings by employing as many measures from independent sources as possible.

Additionally, this research adopted a generic measure of training transfer (Xiao, 1996), and ideally there would have been a closer match between the nature of the competencies trained and the measures to assess their associated transfer. One option is to use course-specific measures, which requires to properly develop and test them, this is resource intensive. In the same vein, generating large enough sample sizes via a single and consistent training course offering might prevent or impractically increase study completion time. Arguably researchers need to strike a balance between
heterogenising the sample for the sake of increasing observed cases and specifying customised measures to assess the transfer and effect of trained competencies. Nevertheless, future research should test the same relationships using a more homogenous trainee cohort and more specific outcomes measures, potentially even within one organisation.

As has already been discussed, measuring and modelling the positive psychological states has been challenging. To date it remains unknown whether this is the result of hope, optimism, resilience, and self-efficacy being conceptually very similar or whether extant measures insufficiently reflect the underlying constructs. The convergence of hope, optimism, resilience, and self-efficacy may indeed suggest they are manifestations of an individual’s core confidence and future research needs to address conceptual clarity and psychometric properties (Dawkins et al., 2013; see Stajkovic et al., 2013).

In a related vein, the measures of proactive personality displayed insufficient internal consistency and extracted too little average variance. While this was just permissible for the present research, no plausible explanation reduces concerns. The measures based on Bateman and Crant (1993), not altered, and even re-validated in other research (Claes, Beheydt, & Lemmens, 2005; α = .86; Parker, 1998; α = .85). Questions remain whether this has been a function of the population, survey mode, or else.

Additionally, the present research was based on a mediational model whereby distal variables had their effect through more proximal variables and processes. This was based on a sound theoretical rationale; yet, alternative moderated relationships are conceivable. For instance, facets of personality (e.g. conscientiousness) may not just have their effect through more proximal variables, but actually moderate the relationship of these proximal variables and their outcomes. This is an angle that will need to be further investigated in future research.
9.3 Theoretical Implications and Future Research

An overall contribution of the present research is conceptually anchoring it in a common goal regulatory framework. This has given theoretical clarity for hypothesising the relationships between the focal constructs, and when explaining the pursuit of goals (Carver & Scheier, 2001; Forgas et al., 2013; Wood, 2005), including those relating to training transfer. While not entirely new, this has not always been the case in training transfer literature, for example when considering existing constructs of training-related motivation. It is thus suggested that future research increases the use of goal and self-regulation theory in understanding the transfer of training (Sitzmann & Ely, 2011).

One reflection of this call to action in the present research has been the construct of proactive transfer behaviour. Although the four elements of envisioning, planning, enacting, and reflecting could not be sufficiently statistically differentiated, making self-regulation more visible and interpretable is beneficial (Bindl et al., 2012) and warranted for training effectiveness research (Sitzmann & Ely, 2011) to discern the antecedents of goal setting and striving acts that realise training transfer. Developing adequate measures which better support the factorial differentiation is an option and short scales of self-regulation are desirable and have been developed in other domains (e.g. Yeo & Frederiks, 2011). Alternatively, operationalising the more complex process model by Foxon (1993, 1994) may be a promising avenue to unpack the self-regulation of transfer. While the model exists only in theory, diary studies for instance could capture trainee’s intention to transfer, which are then followed by subsequent attempts and partial transfer. Diary studies may also be particularly suitable for examining the role of self-regulation in proactive and conscious maintenance of new competencies that lead to unconscious work routines.

In the same vein, longitudinal studies would be helpful to understand the proactive transfer of training. For example, when are proactive transfer behaviours most crucial after returning from a training to work? Also, while the present research gives initial support to the proactivity proposition, further work is required to establish this. Future studies need to include third
party observations of proactive transfer, for instance via supervisors ratings, and also involve control measures of ‘reactive’ transfer. Taking these measures repeatedly over time then would allow discerning at what stage and under what conditions self-initiated change arises as the result of a training experience. Given that training transfer is integral to performing at work, proactive transfer behaviours may be prompted by the same factors as proactive work behaviours. However, this need to be researched, and a broad body of literature exists to inform this theorising and testing (Aspinwall, 2005; D. T. Campbell, 2000; Fritz & Sonnentag, 2009; Grant & Parker, 2009; Ohly & Fritz, 2007; Parker & Collins, 2010; Parker et al., 2006; Tornau & Frese, 2013).

While construct validity has been established, the developed constructs of training-related motivation require further attention so they are properly situated in the wider nomological net of individual and environmental variables for training effectiveness. This should begin by examining the relationships of participation motivation’s facets to different forms of training framing (Quiñones, 1995; Tai, 2006). The nature and means by which a formal learning opportunity is communicated conceivably differentially affects can-do, reason-to, and energised-to participation motivation (Hurtz & Williams, 2009). This likely affects the decision to enrol in/voluntary (Baldwin, Magjuka, & Loher, 1991; Baldwin & Magjuka, 1997) and the subsequent motivation to learn (Baldwin, Ford, & Naquin, 2000). All of this could be tested hypothetically or in a real work learning scenario.

Equally, distinct training design and delivery and learning environments would have different effects on can-do, reason-to, and energised-to learning motivation (Ainley, 2006; Weissbein et al., 2010). While learning during training is a necessity for transfer, these motivational mechanisms likely have downstream effects on eventual training transfer beyond the actual attainment of new knowledge and skills. Lab studies and educational settings might be best suited to test what can be done in the classroom to not just create competence mastery but also improve their subsequent transfer.

Lastly, investigating the effects of deliberately influencing transfer motivational states is warranted. Although research into transfer motivation
is on the rise (Gegenfurtner, Festner, et al., 2009; Weissbein et al., 2010; Zaniboni et al., 2011), little, if any, research is occupied with how learners can be energised via positive affect so that it transfer initiation and maintenance are increased. Research into transfer motivation should also engage in latent growth modelling. It has been argued that motivation is dynamic and understanding what builds and maintains or even reduces it over time can help establish causation for antecedents and consequences.

There are a number of possible future research avenues associated with positive psychological states as they relate to the work situation. Research suggests that strengthening hope, optimism, resilience, and self-efficacy favourably affects work-related outcomes including performance (Avolio et al., 2011; Kirk & Koeske, 1995; e.g. S. J. Peterson & Byron, 2008; S. J. Peterson & Luthans, 2003; Reichard et al., 2013; Stajkovic & Luthans, 1998; Wandeler & Bundick, 2011; Zunz, 1998). The present studies suggest that employees’ core confidence at the workplace impacts the transfer of training. Thus, developing positive thoughts and beliefs in employees would allegedly lead to more training transfer. Yet, the present findings shed no light on this premise and interventions studies involving control groups would have to prove that building employees core confidence is a viable option for enhancing training transfer. When compared to the large body of literature on self-efficacy, the knowledge on building hope, optimism, and resilience at work may be considered in its infancy. Qualitative studies that would interview employees on the subject of work hope, optimism, resilience, and training transfer appear constructive to advance our understanding. This would further determine which conditions in the work environment can prompt higher levels of core confidence and correspondingly improve training outcomes.

What is more, the present research is testament to the conceptual and psychometric ambiguity concerning the constructs. On the one hand, they are theoretically distinct; on the other hand, insufficient, if any, research exists that would clearly show how all four constructs provide incremental and differential explanation to predict relevant outcomes (Dawkins et al., 2013). Further research ought to clarify the construct validity profile of hope,
optimism, resilience, and self-efficacy. Given that associated sets of measures have arisen individually through different bodies of literatures, a concentrated effort to develop measures that better reflect and discriminate the underlying psychological mechanisms may help remedy this dilemma.

9.4 Practical Implications and Directions

A central objective of the present research was to advance theory and research about factors that are of managerial relevance by potentially being open to intervention. From a practical perspective, findings of the present research would suggest that managers who facilitate a work environment which develops core confidence, facilitates training-related motivation, and encourages proactive behaviours can have a great impact on many important job-related outcomes including training transfer.

Theories and the academic literature can sometimes seem difficult for practitioners to understand as a result of its enormousness, obscure terms, and complex conceptualisations. Yet, from the onset the present research desired to make a great deal of sense for the managerial reality so as to enhance training transfer and work performance. This section seeks to be straightforward and illustrates what can be done about the findings.

Promoting core confidence at the workplace would involve addressing its four underlying dimensions hope, optimism, resilience, and self-efficacy. Luthans and colleagues (Luthans, Avolio, et al., 2006) discuss possible avenues to promote associated thoughts and beliefs, and also report that even short interventions can increase levels of respective positive cognitive states (Luthans, Avolio, & Peterson, 2010). For instance, demonstrating to employees that others have achieved challenging goals at work may build positive expectancies about one’s own future in this context (optimism). At the same time explaining and modelling the behaviours that lead to such goal attainment allow employees to assimilate and gain assurance with the involved goal striving processes (self-efficacy). Creating awareness for possible obstacles and illustrating how to mentally frame setbacks can pre-empt goal disengagement (resilience). To help people get better in knowing
what to do at work, how to do it, and having the will to do it (hope), a range of interventions are described next (Adams et al., 2002; Juntunen & Wettersten, 2006; Snyder & Lopez, 2002). Simply for the sake of brevity, only the core confidence dimension hope is chosen for this more elaborate illustration.

Hope is fostered when people are allowed the freedom to set their own goals. For instance, there should be an array of goals, including those which seem to stretch the abilities of the individual. Consequently, the individual can then be sensitised to the decision making processes that surround the identification of important goals. These goals should be prioritised from least to most important in order to focus effort and resources available. Next, adequate goals must be explicitly set. Employees further need to learn how to break large goals into smaller steps. This stepping process begins with the most reachable goal to elicit positive mastery experiences for continued pursuit. However, given that not all goals are readily attained, mental road maps may be discussed that include alternate routes to the goal in case of blockages or stressors. Ultimately, in an iterative way, a main path and potential alternatives should derive which allow flexible and sustained goal pursuit. If goal pursuit is hindered it is important to prevent constant frustration as it will lead to lower agency. Instead, obstacles need to be understood as important opportunities to learn and determine new pathways. Encouraging thinking of problems as challenges allows people to enjoy the process of goal attainment, and not just focus on the goal itself. This can involve the patterns of positive self-talk and mindful reflection.

The above ultimately leads to more sustainable routines of setting and striving for goals and the means to achieve them, and thereby more core confidence. Those behaviours and their more cognitive underpinnings are further fostered by social environments in which this positive thinking is encouraged. Supervisors, peers, and mentors can serve as role models and help individuals to set goals, encourage realistic beliefs about the future, provide resources, and assist with the correction of erroneous pathways. Equally, transfer attempts often involve unexpected obstacles and making errors. Hence, a learning culture with active error management can
constructively deal with mistakes in goal setting and pursuit, and so foster training transfer by developing core confidence.

Practitioners can use the framework of training-related motivation to elicit desirable training and transfer behaviours. So employees think they have the personal resources and can participate, managers can provide absence management which balances usual work responsibilities with those of the training episode, including re-direction of emails and the reduction of work load. It should be paramount that employees fully understand what a given training will be about, why it is relevant, how it is supposed to change themselves and/or work outcomes. This goes in hand with defining clear goals that arise out of a discussion involving expectations and skill gaps that training shall fill. To foster reason for participation, managers can set up work scenarios and responsibilities that require the new competencies to be used immediately. Managers can energise employees for participation by creating an environment in which the learning opportunity is meaningful and perceived as an opportunity which is not to be missed. Creating such ownership requires that training participation is minimally enforced and not a result of mere compliance or even fear. It is beneficial to communicate widely and excite for instance via emotional teaser about the nature and features of the upcoming training. Diffusing positive testimonials from past trainees can enthuse about the new competencies making a difference.

Increasing individuals’ belief in their ability to learn during the learning stage can be increased through scaffolding, whereby a number of ‘quick wins’ lead to mastery experiences. This encourages active participation and making mistakes in a safe environment. It further helps to articulate that performance during training does not necessarily reflect the ability to apply what was learned. Learners benefit from ongoing, meaningful, and diagnostic feedback about their performance, challenges, and success. In order to maintain a reason to learn it helps to illustrate the potential future that arises through mastering the new competencies. Learners may be energised by making learning inspiring, intriguing, fun, and enjoyable in addressing all senses via visuals, audio, aesthetics, and relying on physical activity and humour. Further stimulation of positive affect may involve more subtle but
deliberate creation of experiences such as socialising and networking, and simply the realisation of having a change from daily work routines.

To facilitate employees can-do transfer motivation, managers should provide ample time and control to those trained so they are able to consolidate and convert training into work actions. This includes offering plenty of resources and opportunities to transfer, for instance via immediate goals tied to valued rewards. To add further reason for transfer, it should be clearly communicated how the successful application of competencies trained will contribute to organisational priorities. High positive arousal may be generated by publicly and frequently recognising employees’ training attendance, skill attainment, knowledge diffusion, and certification, for instance via incentives and tokens that create pride and make people subject champions.

Lastly, other than through promoting training-related motivational states, the literature would suggest a range of factors that might encourage proactive transfer behaviours. A challenge of deliberately promoting proactive training transfer is that employees are expected to use independent judgment and initiative, and are simultaneously supposed to think and act like their bosses (D. T. Campbell, 2000). Therefore, employees may be provided with high amounts of autonomy and control with regards to accomplishing their work and transfer goals, which is flanked by high-quality communication (Parker, 1998) and co-worker trust (Parker et al., 2006). These appear to be necessary conditions because if an employee perceives that engaging in proactive transfer behaviours risks harming his or her image in the eyes of peers or supervisors at work, he or she will be less likely to engage in such proactive transfer behaviours. Instead, the employee remains reactive, waiting for training transfer to be called for or simply doing nothing about changing the self or work as the result of training.

Overall, interventions that combine these cognitive, motivational, and behavioural antecedents to training transfer represent largely untapped levers for practically improving training transfer.


9.5 Conclusion

Almost three decades have passed since the transfer of training began to be proposed as a paradigm by which to research and facilitate the effectiveness of work training. This concept has broadened the research agenda beyond the focus on learning new knowledge and skills in a classroom and highlighted the role of factors relating to the learning environment, the work experience, and ultimately the individual being trained. Research has identified several largely consistent variables and proposed models by which to organise and understand their role. Motivation is such a key factor because it represents central mediating mechanisms through which many other influences affect training success. Much empirical research has demonstrated this role albeit motivational theories and constructs as they relate to training have not progressed in the same quality as in other bodies of literatures. Additionally, a more systemic view of training effectiveness is increasingly proposed whereby training transfer is integral to work performance.

The present research thus sought to address some of these important conceptual and operational limitations and was anchored in a goal regulatory framework. This thesis conceptually refined training-related motivation and further systematically developed multi-stage and multi-dimensional measures. This thesis also introduced the concept of proactive transfer behaviour to the literature and began to operationalise it as a consequence of transfer motivation. This thesis further made some headway in elucidating why positive psychological states at work might be an antecedent for transfer motivation and thus associated with higher training transfer. In conclusion, the present research found support for those hypotheses.

It is my hope that researchers and practitioners build on those virtues and continue to pursue this line of inquiry to further establish the mechanisms by which core confidence at work, training-related motivation, and proactive transfer behaviours can improve the transfer of training.


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APPENDICES

11.1 Measures Study 2 & 3

<table>
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<tr>
<th>ID</th>
<th>Construct</th>
<th>Item</th>
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<tbody>
<tr>
<td></td>
<td>Training Transfer</td>
<td>I have changed parts of my behaviour/activities at work in order to be consistent with material taught in the training.</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>My actual job performance has improved due to the skills that I learned in this training course.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Supervisors, peers, or subordinates have told me that my work performance/quality has improved following the training.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>How much of the new knowledge/skills covered by the training do you estimate you actually use at work?</td>
</tr>
<tr>
<td></td>
<td>Proactive Transfer Behaviour</td>
<td>... imagining what it would be like to use what I have learned.</td>
</tr>
<tr>
<td>1</td>
<td>Envisioning</td>
<td>... thinking about ways to apply this training at work.</td>
</tr>
<tr>
<td>2</td>
<td>Envisioning</td>
<td>... envisioning how my job might be different if I were to use what I have learned.</td>
</tr>
<tr>
<td>3</td>
<td>Planning</td>
<td>... planning changes to a work situation based on things I learned.</td>
</tr>
<tr>
<td>4</td>
<td>Planning</td>
<td>... planning changes to a work situation based on things I learned.</td>
</tr>
<tr>
<td>5</td>
<td>Planning</td>
<td>... getting myself prepared to use new skills or knowledge acquired through this training.</td>
</tr>
<tr>
<td>6</td>
<td>Planning</td>
<td>... making changes to how I do my work based on this training.</td>
</tr>
<tr>
<td>7</td>
<td>Planning</td>
<td>... starting to use trained skills or knowledge to improve my job performance.</td>
</tr>
<tr>
<td>8</td>
<td>Planning</td>
<td>... preparing myself to use trained skills or knowledge acquired through this training.</td>
</tr>
<tr>
<td>9</td>
<td>Planning</td>
<td>... starting to use trained skills or knowledge to improve my job performance.</td>
</tr>
<tr>
<td>10</td>
<td>Reflecting</td>
<td>... considering the outcomes of my training-related efforts in regards to my work performance.</td>
</tr>
<tr>
<td>11</td>
<td>Reflecting</td>
<td>... extracting lessons for the future from my attempts to apply this training at work.</td>
</tr>
<tr>
<td>12</td>
<td>Reflecting</td>
<td>... seeking extra feedback from someone about any training-related actions I engaged in.</td>
</tr>
<tr>
<td></td>
<td>Proactive Personality</td>
<td>If I see something I don’t like, I fix it.</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>No matter what the odds, if I believe in something I will make it.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>I love being a champion for my ideas, even against others' opposition.</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>I excel at identifying opportunities.</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>I am always looking for better ways to do things.</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>If I believe in an idea, no obstacle will prevent me from making it happen.</td>
</tr>
<tr>
<td></td>
<td>Positive Cognitive States</td>
<td>If I should find myself in a jam at work, I could think of many ways to get out of it.</td>
</tr>
<tr>
<td>1</td>
<td>Hope</td>
<td>At the present time, I am energetically pursuing my work goals.</td>
</tr>
<tr>
<td>2</td>
<td>Hope</td>
<td>There are lots of ways around the sorts of problems I encounter right now at work.</td>
</tr>
<tr>
<td>3</td>
<td>Hope</td>
<td>Right now I see myself as being pretty successful at work.</td>
</tr>
<tr>
<td>4</td>
<td>Hope</td>
<td>I can think of many ways to reach my current work goals.</td>
</tr>
<tr>
<td>5</td>
<td>Hope</td>
<td>At this time, I am meeting the work goals that I have set for myself.</td>
</tr>
<tr>
<td>6</td>
<td>Hope</td>
<td>Regarding work, I expect more good things to happen to me than bad.</td>
</tr>
<tr>
<td></td>
<td>Optimism</td>
<td>I am able to achieve most of my goals at work.</td>
</tr>
<tr>
<td>1</td>
<td>Optimism</td>
<td>At work, I rarely count on good things happening to me.</td>
</tr>
<tr>
<td>2</td>
<td>Optimism</td>
<td>At work, I am usually managing one way or another.</td>
</tr>
<tr>
<td>3</td>
<td>Optimism</td>
<td>I usually take stressful things in stride at work.</td>
</tr>
<tr>
<td>4</td>
<td>Optimism</td>
<td>I try to absorb difficulties at work quickly, so they do not disturb me too much.</td>
</tr>
<tr>
<td>5</td>
<td>Optimism</td>
<td>At work, I can get through difficult times because I’ve experienced difficulty before.</td>
</tr>
<tr>
<td>6</td>
<td>Optimism</td>
<td>At work, I can be &quot;on my own&quot;, so to speak, if I have to.</td>
</tr>
<tr>
<td></td>
<td>Resilience</td>
<td>When I have a setback at work, I have trouble recovering from it, moving on.</td>
</tr>
<tr>
<td>1</td>
<td>Resilience</td>
<td>I am able to achieve most of my goals at work.</td>
</tr>
<tr>
<td>2</td>
<td>Resilience</td>
<td>When facing difficult tasks at work, I am certain that I will accomplish them.</td>
</tr>
<tr>
<td>3</td>
<td>Resilience</td>
<td>I think that I can achieve outcomes that are important to my organisation.</td>
</tr>
<tr>
<td>4</td>
<td>Resilience</td>
<td>I will be able to successfully overcome challenges at work.</td>
</tr>
<tr>
<td>5</td>
<td>Resilience</td>
<td>I am confident that I can perform effectively on many different job tasks.</td>
</tr>
<tr>
<td>6</td>
<td>Resilience</td>
<td>Even when things are tough at work, I can perform quite well.</td>
</tr>
</tbody>
</table>

Note. *denotes item was selected for Study 3.