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Emotional Intelligence: Overcoming Inconsistencies and Contradictions towards the Development and Validation of an Integrated Model of Affect-related Individual Differences

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Emotional Intelligence: Overcoming Inconsistencies and Contradictions towards the Development and Validation of an Integrated Model of Affect-related Individual Differences

By

Thomas Rhys Evans

October 2017

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A thesis submitted in partial fulfilment of the University's requirements for the Degree of Doctor of Philosophy

Abstract

The main objective of the current research is to establish a clearer understanding of Emotional Intelligence (EI) and its theoretical underpinnings. The main argument put forward within this thesis is that by considering various EI-related constructs as extensions of well-established affective individual differences, the field of EI can benefit from existing frameworks and from these build a stable theoretical structure that can support appropriate applications of EI.

This thesis begins by exploring the understanding of EI by Academics, Students and HR Professionals. Here, a lack of consensuses and a number of common inconsistencies and contradictions provide a convincing rationale to revisit EI theory. A literature review examining existing EI theory is then presented, leading to the development of three unique approaches to EI, structured as extensions to well-established individual differences. Here EI is considered an umbrella label for affect-related individual differences, encapsulating Ability EI as a second-stratum factor of intelligence, Affect-related Personality as a collection of affective traits, and Emotion Regulation as a theoretically-robust alternative to EI competencies/mixed EI. Adopting these three positions, the current thesis presents an Integrated Model of Affective Individual Differences, which places Emotion Regulation as the mechanism by which Ability EI and Affect-related Personality influence affective outcomes. The current thesis then provides two empirical studies to test the conceptualisations of EI, and subsequent Integrated Model of Affect-related Individual Differences. Data provides strong support for contextualising the three approaches to EI within existing models of individual differences, and mixed support for the pathways proposed by the Integrated Model of Affect-related Individual Differences.

The current thesis thus provides four key contributions. First, contradictions and theoretical inconsistencies are identified and presented as key barriers towards a robust understanding of EI. Second, a novel approach to organising and facilitating understanding of EI content domain is provided by contextualising the various approaches to EI within existing individual-difference frameworks. Third, the Integrated Model of Affect-related Individual Differences proposed represents a novel structure to support understanding and application of EI. Fourth, empirical evidence is presented to demonstrate the efficacy of such conceptualisations and models.

This research is dedicated to Alexander.

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Publications & conference presentations

Ideas and data used directly in the current thesis have been published in the following ways:

- Evans, T. R and Hughes, D. J. (Under Review) 'Integrating Cognitive Ability, Personality, and Emotion Regulation Perspectives on Emotional Intelligence Theory'
- Evans, T. R. (Under Review) 'A Conceptual Replication of Emotional Intelligence as a Second-Stratum Factor of Intelligence'
- Evans, T. R. and Steptoe-Warren, G. (2017) 'Emotional Intelligence from the Ivory Tower: Consensuses and Misconceptions' at the *British Psychological Society Division of Occupational Psychology Annual Conference*, held 4-6th January 2017
- Hughes, D. J., and Evans, T. R. (2016). Comment: Trait EI Moderates the Relationship between Ability EI and Emotion Regulation. *Emotion Review*, 8(4), 331-332
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- Evans, T. R., and Steptoe-Warren, G. (2015) 'Teaching Emotions in Higher Education: An Emotional Rollercoaster'. *Psychology Teaching Review,* 21(1), 39-43
- Evans, T. R. and Steptoe-Warren, G. (2015) 'Teaching Emotions: An Emotion Theme Park' at the *British Psychological Society West Midlands Branch Annual Conference*, held 7th September 2015
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- Evans, T. R. and Steptoe-Warren, G. (2015) 'Emotional Intelligence: The Corporate Panacea' at the *Psychology of Emotions and Feelings Conference*, held 8th April 2015.
- Evans, T. R. and Steptoe-Warren, G. (2015) 'Teaching Emotions: An Emotion Theme-Park' at the *Psychology of Emotions and Feelings Conference*, held 8th April 2015.
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- Ward, S., Evans, T. R., and Steptoe-Warren, G. (2015) 'Trait Emotional Intelligence and the Antecedents, Communication and Impact of Workplace Frustration' at the *British Psychological Society Division of Occupational Psychology Annual Conference*, held 7-9 January 2015
- Evans, T. R., and Steptoe-Warren, G. (2015) 'Emotional Intelligence Measurement: Misunderstanding and Misuse'. *Assessment and Development Matters* 7(1), 9-12
- Evans, T. R., and Steptoe-Warren, G. (2014) 'Emotional Intelligence Matters'. *Occupational Psychology Matters* 23, 37-40

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Chapter 1: Overview of the thesis

Emotional Intelligence (EI) is a widely discussed but poorly understood construct that is conceptualised, defined, and measured in many ways (Zeidner, Roberts and Matthews 2008). The main objective of the current thesis is to establish a clearer understanding of EI, its theoretical underpinnings, and the subsequent implications for its application. The main argument put forward within this thesis is that by considering the various EI-related constructs as extensions of well-established affective individual differences, EI research can draw upon these existing frameworks to build a stable theoretical basis that can support understanding, and thus appropriate applications, of EI. This first chapter introduces the need for greater clarity within EI theory, presents the four key aims of the thesis, and concludes with a summary of the epistemology, structure and subsequent chapters of the current thesis.

1.1 Background

Emotional intelligence (EI) is a label assigned to a wide array of individual differences, which, over the past 20 years, has been widely adopted by scholarly researchers and practitioners. Despite this popularity, numerous substantial concerns regarding the theoretical nature of EI-related constructs remain. Taken literally, EI should be a combination of emotion and intelligence. Emotions are considered affective episodes with a perceptual or intellectual component (e.g., perception and appraisal of emotional cues) that hold the property of intentionality (e.g., jealousy *toward* another or shame *towards* oneself; Mulligan and Scherer 2012). Emotions are often triggered and guided by at least one appraisal of a stimulus (e.g., an impending exam) and are associated with physiological and/or cognitive change(s) (e.g., increased heart rate and self-doubting thoughts; Mulligan and Scherer 2012). Intelligence is defined as a "mental capability that… involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience" (Gottfredson 1997: 13). Adopting this emotion plus intelligence (or cognitive ability) perspective, Salovey and Mayer (1990: 189) defined EI as the cognitive abilities required to "monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions".

Salovey and Mayer's (1990) concept of EI was discussed within academic circles but EI was more rapidly adopted following the publication of Goleman's (1996) "Emotional Intelligence: Why it can matter more than IQ" (See Figure 1.1). This popularised notion of EI included constructs not captured by Salovey and Mayer's (1990) cognitive ability model, including motivation, empathy, social skills, happiness, and achievement-orientation, amongst others (Bar-On 1997; Goleman 1996). In response,

EI researchers diversified, developing a myriad of substantively different definitions and measures - all under the EI label (Locke 2005).

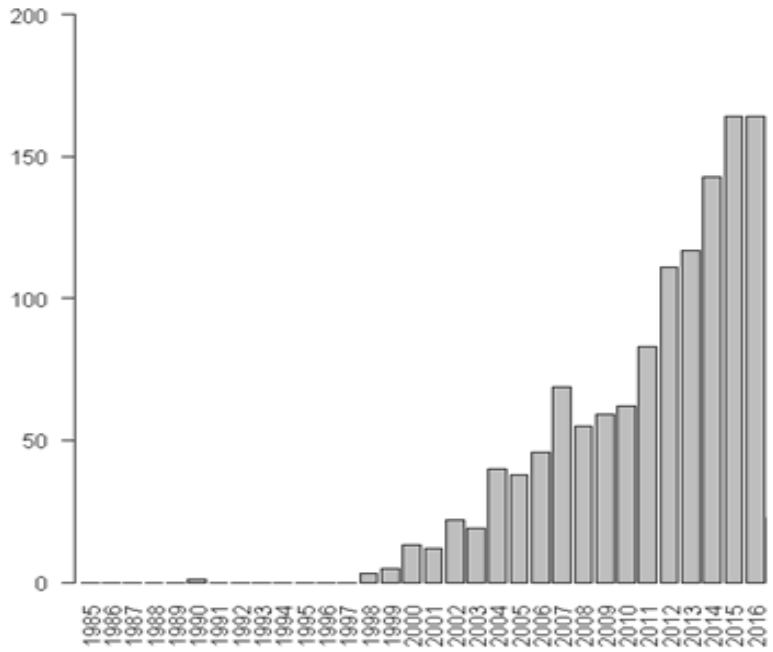

Figure 1.1 Prevalence of the term 'emotional intelligence' in journal articles hosted in the PubMed database between 1985 and 2016

It is not uncommon for newly proposed constructs to outstrip meaningful theoretical development (Shaffer, Degeest and Li 2016), partly because producing construct labels, definitions, and measures is easier than developing meaningful theory, and partly because the latter is based upon the former. Thus, the fact that many conceptualisations and operationalisations of EI exist is not necessarily a problem. Indeed, it is argued that "when authors begin to map out the conceptual landscape of a topic they should err in favor of including too many factors, recognizing that over time their ideas will be refined" (Whetten 1989: 490). The numerous conceptualisations of EI now contained within the literature have each had their merits, however there are now growing concerns regarding their theoretical status (Locke 2005; Zeidner, Roberts and Matthews 2008). Paramount amongst these concerns are questions regarding what EI actually is, the extent to which the different EI-related constructs are distinct, and which constructs, if any, are redundant manifestations of 'old wine in new bottles' (Zeidner, Roberts and Matthews 2008). The rapid and piecemeal development of EI models and measures has outstripped meaningful theoretical advancements and the commercialisation of EI tools appears to have exacerbated inconsistencies in terminology, measurement, and empirical findings (Locke 2005; Zeidner, Roberts and Matthews 2008).

The lack of clarity surrounding EI has led some to dismiss certain elements of the EI literature, and some to dismiss EI completely (Ashkanasy and Daus 2005; Locke 2005). To be sceptical of EI seems justified, but calls for complete rejection are premature. Before we can confidently reject or retain the various conceptualisations of EI, we need two things: clear and concise definitions and boundaries for each EI-related construct, and a theoretical framework that describes how they relate to each other and to the broader individual differences arena. Only with such an integrative theoretical framework can we determine whether EI has any scientific value.

1.2 Aims

The ultimate objective of the current thesis is to build a stable theoretical basis that can support understanding of EI by considering the various EI-related constructs as extensions of well-established affective individual differences. To do so, the current thesis has four aims. The first aim is to explore how important stakeholders – researchers, teachers, and HR practitioners – think about the nature and value of EI. In doing so, the extent to which there is consensuses and clarity or inconsistencies and contradictions can be identified. The second aim is to explore the state of the science and conduct a thorough review of the many different constructs held within the EI banner. This review will identify a theoretically-guided tri-component model of EI, differentiating between cognitive abilities, personality traits, and emotion regulation approaches. The third aim is to develop a framework that could integrate the different approaches identified within broader individual differences theory. The fourth aim is to analyse the proposed framework empirically. By situating the three approaches within the context of existing individual difference theories and models, and starting the development of a robust body of evidence to explore an integrative framework, the current thesis attempts to determine the theoretical credibility of EI as a valuable individual difference construct. It is thus hoped that the current thesis provides a theoretically-informed and evidence-based perspective on EI and in doing so provide a robust stepping-stone towards more ethical and effective applications of EI.

In sum, the current thesis intends to:

- Empirically determine the scope and degree of consensuses surrounding EI from the perspective of Researchers and Teachers of Psychology within Higher Education, Psychology Students, and HR and Recruitment/Selection Practitioners
- Explore an alternative definition of EI as an umbrella label for affect-related individual differences, considering multiple EI-related constructs as extensions of well-established affective individual differences

- Explore the theoretical grounding behind an integrated model of affective individual differences, combining EI approaches with well-established models of personality traits and cognitive abilities
- Empirically examine the model in explaining common EI 'outcomes' (e.g. well-being and job performance), using both questionnaire and pseudo-experimental methodologies

1.3 Structure

The following five chapters explore these four aims towards a clearer understanding of EI and its theoretical underpinnings. The following chapter explores the historical development of the EI construct then reports on three empirical qualitative studies that explore current understanding of EI. The chapter then examines the extant literature and uses existing individual difference models and theories to present three approaches to EI: cognitive ability, personality, and emotion regulation. The third chapter provides the rationale and justification for a framework that integrates these three proposed components of EI by drawing upon the intelligence and personality theories/models from which they were based. The major premise of the Integrated Model of Affect-related Individual Differences is that personality trait and cognitive ability-based conceptualisations of EI predict the identification, choice and implementation of Emotion Regulation strategy use, and these strategies dictate valence of outcomes. The fourth and fifth chapters present empirical analyses of the relationships proposed by the Integrated Model of Affect-related Individual Differences. The fourth chapter adopts a large-scale questionnaire-based design using data collected from 830 participants. The fifth chapter adopts the cold pressor task paradigm to explore prediction of Emotion Regulation strategies in context. Finally, the sixth chapter presents a review of the contributions made by the current thesis in context of their limitations, in addition to discussions surrounding the priority developments, applications, and future progression of the study of EI.

1.4 Epistemology

Epistemology is the philosophical study of the theory of knowledge, critically exploring the ways in which knowledge can be produced and validated (Greco 2017). In-line with the diversity in types of knowledge and methodologies required to address the aforementioned research aims, the current thesis was not explicitly grounded in any single epistemological branch or school of thought (Brannen 2005; Bryman 1984; Roberts 2002; Zerubavel and Adame 2014). Instead, a brief reflexive note is included for each empirical study, presented in context of research design.

Chapter 2: What is Emotional Intelligence?

This chapter will explore the concept of EI to determine what is currently known about the scope and content of EI as an individual difference. The chapter begins by exploring how the growth of social factors and diversification of intelligence models led to the initial development of EI, and how the definition of EI widened following subsequent work. To determine the extent and range of consensuses within the EI field, the current chapter presents empirical work that explores the understanding of individuals from three key stakeholder groups. Academics researching and teaching Psychology in Higher Education were first targeted to determine whether there is an academic consensus on the definition and value of EI. The views of psychology students were concurrently explored to determine whether, if academics had a robust understanding, this was being communicated clearly through journal articles, presentations, and lectures. Finally, Human Resources (HR) professionals were chosen to explore the reputation of EI in applied arenas and to determine whether real-life (HR) decisions were being made based upon the inconsistencies and contradictions surrounding the field or the limited body of evidence exploring its efficacy for such uses. Once analysis has been completed, the views espoused by the different stakeholders are considered in the context of the latest evidence and theory.

To counter the most pervasive problem regarding EI-related individual differences, namely, the lack of clear definitions, a review of the existing literature guided by individual differences theory is presented. It is argued that EI-related characteristics can be considered to represent cognitive ability (Ability EI), personality (Affect-related Personality), and Emotion Regulation. A clear understanding of EI is fundamental to realising any potential EI may have for the study of individual differences and the subsequent application. The degree to which EI is considered a unique, credible, and useful construct is discussed in context of its early development and the potential barriers towards a robust academic understanding of EI.

2.1 History of EI and some important preceding concepts

EI is a relatively recently espoused individual difference that has been widely adopted by scholarly researchers and practitioners (Ashkanasy, Härtel and Daus 2002; Pfeiffer 2001). Despite this popularity, numerous substantial concerns regarding the theoretical nature of EI render it difficult to define and measure. Attempts to explain human emotions go back to Ancient Greece (Konstan 2006) however the term EI was first conceptualised in 1966 in German by Leuner, and in 1985 in English by Payne, and has evolved multiple times since.

In order to appreciate the current state of the definitions, models, and measurement methods of EI, the two key trends which sparked the inception of EI will be discussed. Firstly, researchers were focussing more upon understanding social skills, and the potential value for applied fields (Barsade, Brief and Spataro 2003). Secondly, based upon frustration that traditional intelligence (IQ) measures left too much unexplained when trying to predict interpersonal behaviours (Neisser et al. 1996), models of intelligence were beginning to expand to capture a greater range of cognitive abilities, with particular interest in those which could underlie emotional and interpersonal phenomena.

2.1.2 Growth of social factors

EI is frequently described as a sub-facet of Thorndike's (1920a) 'social intelligence' (Landy 2005). In a magazine article discussing traditional intelligence, Thorndike defined social intelligence as "the ability to understand and manage men and women, boys and girls, to act wisely in human relations" (1920a: 228). Despite aiming to highlight the narrow interpretation and measurement of intelligence, this concept, and other definitions (e.g. Moss and Hunt 1927; Vernon 1933), were criticised due to a lack of clear theory and structure (Cronbach 1960; Gardner 1983; Thorndike and Stein 1937; Wechsler 1958). However, social intelligence has represented just a single line of inquiry where interest in affect-related individual differences has grown over the last hundred years. For example, research examining the communication of emotions through facial expressions, voice, and other non-verbal behaviours was becoming increasingly common during the 1970s and 1980s (Riggio 2010; e.g. Rosenthal 1979).

Explorations of affective individual differences were most frequently conducted within the business context (Ashkanasy and Daus 2005; Landy 2005). For example, in an attempt to explain effective leadership through intelligence, Katz (1955) developed a three-skill model of leadership. In addition to technical (working with specialised knowledge) and conceptual (working with ideas) skill, 'human skill' was conceptualised as the knowledge about, and ability to work with, people. This highly affect-related skillset was to include being "sensitive to the needs and motivations of others" and was proposed as the only skill of importance at all levels of an organisation (Katz 1955). By adopting a skills-based approach, and framing it within an applied arena, social skills were reconceptualised as beneficial for having many positive practical implications, flexibility to adjust to environment and context, and to be trainable. A similar but more empirically-evidenced body of work differentiated between more technical behaviours (e.g. defining roles and standards), and the interpersonal responsibilities (Hemphill 1959). Defined as 'initiating structure' and 'consideration' respectively, such foci have persisted within the typical understanding of leadership, for example, in Fiedler's (1964) contingency model and Blake and Mouton's (1964) managerial grid. Within modern taxonomies of work performance, social and emotional facets are typically captured within 'contextual performance' (Koopmans et al. 2011). Studies based upon these principles have provided robust evidence for affect-

related individual differences and the value they may hold (Ayman, Chemers and Fiedler 1995; Burke 2017; Peters, Hartke and Pohlmann 1985; Strube and Garcia 1981).

As a result of the various bodies of research exploring the individual differences to describe social effectiveness, a wide range of affective/social individual differences have been proposed. EI is unique in this regard, having drawn upon many independent fields, including emotion-related behaviours, social intelligence, and occupational leadership theories, which have explored and evidenced the nature of emotion-based individual differences and their importance for applied fields (Riggio 2010). It is the combination of these works which provided the key social and emotional focus of the EI construct, and which have been the basis for many of the various models and theories of EI proposed to date.

2.1.3 Development of Intelligence

Alluded to above, it was not only the growth in interest in social factors that led to the development of EI however, but also the diversification in facets relating to intelligence. Intelligence is "mental capability that… involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly and learn from experience" (Gottfredson 1997: 13) and has been most succinctly modelled by the three-stratum Cattell-Horn-Carroll (CHC) model (McGrew 1997; 2009; see Figure 2.1). This hierarchical approach suggests that underlying performance in all mental ability is represented by a third-stratum 'general' factor of cognitive ability, also known as 'g' (Carroll 2003). Broad abilities using this quality, known as second stratum factors, include fluid reasoning, crystallised knowledge, auditory processing, visual processing, and long-term storage and retrieval. First stratum narrow factors, were proposed; skills that utilised the broad abilities above them e.g. crystallised intelligence is required for language development and visual processing is needed for visualisation. Framed within this model, cognitive abilities have strongly predicted a diverse range of behaviours and outcomes including mortality, divorce, occupational attainment, creativity, and job performance (Kuncel, Hezlett and Ones 2004; Roberts et al. 2007; Schmidt 2002).

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Figure 2.1 The Integrated Cattell-Horn-Carroll Model of Cognitive Abilities (McGrew 2009); Gf = Fluid Reasoning, Gc = Comprehension-knowledge, Gsm = Short-term Memory, Gv = Visual Processing, Ga = Auditory Processing, Glr = Long-term Storage and Retrieval, Gs = Cognitive Processing Speed, Gt =

Decision and Reaction Speed, Grw = Reading and Writing, Gq = Quantitative Knowledge, EI = Emotional Intelligence

Despite being one of the most widely supported models in all of psychology, cognitive abilities as defined by the CHC do not fully account for explanations of social and emotional phenomena (Gottfredson 2003). For example, personality consistently demonstrates incremental predictive validity above intelligence in the prediction of many key outcomes (Poropat 2009; Roberts et al. 2007). In an attempt to diversify the content domain of intelligence models to improve prediction of such outcomes, various alternative models of intelligence have been proposed, many of which, have included social or emotional facets. The most commonly known alternative theory was proposed by Gardner (1983) who endorsed a multifactor theory of intelligence that incorporated eight unique abilities: musical, visual, verbal, logical, bodily, interpersonal, intrapersonal and naturalistic intelligence. Gardner's theory is widely adopted within classrooms to support identification of positive qualities in all students, however has been mostly discredited by the academic community. For example, Gardner (2006) claimed 'g' to be a statistical artefact determined by the verbal and logical demands of the tasks used to capture intelligence. However, empirical studies have evidenced high loadings to 'g' using a variety of non-verbal tasks such as Block Design and Picture Concepts (Watkins 2006). Furthermore, various biological and cognitive correlates of 'g' have been identified (see review by Visser, Ashton and Vernon 2006b) and when modelled alongside traditional intelligence tests, general factors are still identified (Almeida et al. 2010). In sum, empirical works refute many key tenets of the Gardner theory, with fundamental concerns surrounding the theoretical definition and structure of intelligence (e.g. Klein 1997; Rost 2008; Visser, Ashton and Vernon 2006a; Waterhouse 2006).

Sternberg (1985) attempted to build an alternative cognitive model of 'real-world' intelligence and conceptualised three intelligence types: componential, experiential, and practical. The latter of which, the ability to 'attain fit to context' has been explicitly grouped in the same family of concepts as EI (Matthews, Zeidner and Roberts 2004; Mayer, Salovey and Caruso 2000). Again, this practical intelligence theory has received minimal support, with only a few published studies (Sternberg 1985; 2000), of which the findings have been exaggerated, misinterpreted, and presented subject to reporting bias (Gottfredson 2003). The lack of quality evidence for such theories was the extent to which Sternberg was accused of spinning "gauzy illusions of a wholly new intelligence that defies the laws of evidence" (Gottfredson 2003: 392).

IQ strongly predicts a diverse range of socially important outcomes, however does not do so comprehensively. In particular, crime, income, and job performance (Neisser et al. 1996) are only

modestly predicted by IQ. As such, various models were developed to diversify content domain. Support for these alternative approaches has been poor quality and of minimal quantity (Gottfredson 2003), and thus, the emphasis on traditional cognitive abilities and the CHC has dominated the field of intelligence (McGrew 2009). The CHC model of cognitive ability is supported by a robust body of evidence within the individual differences domain, and the original CHC model proposed has been tentatively expanded with only modest additions, such as tactile, kinaesthetic and olfactory abilities (see McGrew 2005). Despite debates as to whether the processing of emotion-related information represents new content domain or reflects affect-related domain of existing abilities, and more fundamental concerns that reasoning with emotions, and thus an emotion-focussed intelligence domain, would be contradictory (Locke 2005), appetite for a socially oriented intelligence has remained, with EI as the latest construct in this endeavour. Indeed, EI can be argued to be the direct result of both the diversification of cognitive ability models and the aforementioned growing exploration of social factors, conceptualised to represent the cognitive abilities surrounding the processing of affect-related information. However, unlike previous socially oriented intelligences, EI was proposed as part of the broader intelligence domain, rather than as a competing explanation.

2.1.4 Early EI development and growth

Very early in EI development, other individuals began to expand the EI construct beyond the cognitive ability definition, based upon works from the variety of fields from which EI was originally inspired (Boyatzis, Goleman and Rhee 2000). EI was subsequently popularised in the wider audience after the publication of a book entitled 'Emotional Intelligence: Why it can matter more than IQ' by Goleman in 1996 (Brackett, Rivers and Salovey 2011; Roberts et al. 2010). Here the definition focussed upon competencies surrounding Self-Awareness, Self-Management, Social Awareness, and Relationship Management, and thus widened to incorporate additional constructs including self-motivation, empathy, social skills, happiness, achievement orientation, and more. Here, the general aim was to establish a range of constructs with the potential to be of greater importance than IQ by being more amenable to training or learning (Goleman 1996; Matthews, Zeidner and Roberts 2004; Schutte, Malouff and Thorsteinsson 2013).

Following wide-spread coverage of Goleman's (1996) conceptualisation of EI, including traits, motivation and other concepts, researchers began to diversify and develop a myriad of substantively different definitions, theories, and measurement tools all under the guise of EI (Locke 2005). As such, the central issue surrounding current EI research appears to be that it is not clear what the scope of the term EI actually refers to. EI has been perceived as an inkblot construct - a concept open to a multitude of interpretations (Caruso 2003). In response to this, many academics have published critiques, concerned that many different concepts were being given the same 'EI' label (Daus and

Ashkanasy 2005). This phenomenon, referred to as the jingle fallacy (Thorndike 1904), has led to a problematic fragmentation in the current understanding of EI. Using the same term to refer to abilities, personality traits, motives, self-concept, competencies, or an eclectic mix of constructs, appears very problematic.

The lack of clarity is particularly problematic given that EI is widely discussed in popular discourse and is frequently sold, in its many guises, to schools and business. Partially attributable to the activities of researchers publicising diverse representations of EI, such as Gibbs's (1995) Time Magazine article on Goleman's EQ concept, EI has fostered a wide range of opinions. Whilst some perceive EI to be a panacea to improve outcomes in all manner of contexts (Nazari and Shakouri 2015; Vandewaa, Turnipseed and Cain 2016; Zeidner, Matthews and Roberts 2004), others have claimed it to be a fad within business contexts, with little true value as a scientific concept (Fisher and Ashkanasy 2000; Hogan and Stokes 2006: 263). Public engagement with, and understanding of, EI is therefore inconsistent. For example, in 2013 McKeown and Bates found that 70% of library managers were using competencies found under the EI guise, but most were unaware of the EI concept. In contrast, individuals within HR positions are aware and endorsing EI. In a sample of 2662 US hiring managers, CareerBuilder (2011) found that EI was valued more than IQ by 71%, 58% would not hire someone who has a high IQ but low EI, and 75% would be more likely to promote a worker with greater EI over one with higher IQ. Such findings echo commonly disseminated claims that are currently unsubstantiated through data, for example that use of EI for recruitment and selection decisions leads to 90% success rates (Watkin 2000).

2.2 Current understanding

This first empirical work of the current thesis aims to determine how key stakeholder groups think about EI. Academics were first targeted to determine whether, contrary to the extant body of literature reviewed above, there is an academic consensus on the nature and value of EI. The views of psychology students were concurrently explored to determine, if academics have a robust understanding of EI, whether this was being communicated clearly through journal articles, presentations, and lectures. Finally, HR professionals were chosen to explore the reputation of EI in applied arenas, and to determine whether real-life (HR) decisions are being made based upon the extreme claims surrounding the field, or the limited body of evidence exploring its efficacy for such uses. Given the potential for its application there has been a very limited consideration of EI within the field of HR (Clarke 2006), with few notable exceptions (cf. Landen 2002).

The pervasiveness of EI across many industries meant that stakeholders from other areas could have also been targeted. For example, EI test-publishers and teachers who are engaged in delivering school-

based social and emotional learning programmes. The current study excluded such populations on the grounds of a) practicality, as most EI applications and established intervention programmes currently operate in America, b) possible conflict of interests with participants declaring their perceptions on the value of specific intervention programmes, and c) impartiality, minimising affiliation with a single theoretical approach, intervention type or measurement tool that could distort conclusions drawn. Furthermore, qualitative evaluations of existing programmes are currently rare but growing in number. For example, see Fer (2004) for qualitative evaluation of an EI programme for secondary-school teachers.

Study 1 aimed to explore whether general understanding of EI is in any way consistent or whether the inconsistencies evident within the literature, as discussed above, permeate to these populations. The current study will also begin to identify the most prevalent inconsistencies and contradictions that might produce resistance to future progress and development.

2.3 Methodology

2.3.1 Design

As perceptions of EI are typically complex and contradictory (Smollan and Parry 2011), asking individuals to endorse one of several pre-defined definitions of EI, or to pick from a set list of outcomes and opinions, seems reductionist and leading. As such, the current study adopted a qualitative open-ended questionnaire methodology to gather a detailed insight into the diversity in understanding of, and attitudes towards, EI. As discussed above, three key stakeholder populations were chosen to explore: psychology students, academics and HR professionals.

The current study is aligned with an interpretivist-constructionist epistemological perspective, in acknowledging that the primary focus, and thus knowledge of value, are the individuals' diverse personal perceptions and beliefs surrounding EI (Ormston et al. 2014; Silverman 2013; Willis, Jost and Nilakanta 2007). An interpretivist-constructionist perspective is "the primary foundation and anchor for qualitative research methods" (Ponterotto 2005: 129). There is limited research adopting this epistemology and thus methodology in the field of EI however (Akerjordet and Severinsson 2004; Fer 2004; Lust and Moore 2006; Pau et al. 2004; Sung 2010) and thus the current study seems likely to be valuable by proffering a more focussed and detailed examination of the diversity in understanding and attitudes (Smollan and Parry 2011).

2.3.2 Participants

Twenty-six academics participated through requests on social media, through snowballing of contacts and during requests for participation in an annual Occupational Psychology conference presentation (Evans and Steptoe-Warren 2017). The majority of participants were both researching and teaching

(73%) although 19% were researchers and 8% only taught. The sample was predominantly working in the UK (88%) and female (85%), with a mean age of 35 (SD = 11.6) and a mean time of 65.88 months working in academia. The majority of teachers had taught EI in relation to their own fields (65%) and a few had even taught EI specifically (8%). Of those participating, only one participant had ever had any role in the academic dissemination of EI-based works.

Fifty-seven psychology students participated through requests for participation in lectures and conference presentations, the online learning environments (i.e. Moodle), and through the Coventry University research participation scheme. Students recruited from Coventry University were never taught about EI itself any time during their degree, however it was noted in other fields e.g. when discussing individual differences. The vast majority were on straight Psychology undergraduate degrees (73%) although other undergraduate (12%) and postgraduate (15%) psychology degree types were also present. The sample was predominantly female (76%) with a mean age of 22.5 (SD = 3.4), as to be expected from a psychology student population (APA 2011).

Fifteen HR professionals participated through requests for participation on social media and during an annual Occupational Psychology conference (Evans and Steptoe-Warren 2017). The majority of participants worked in the UK (80%) in HR, recruitment, or selection-based occupations. The sample was 60% female and had a mean age of 46.5 (SD = 9.8). In sum across all three samples, most participants were aware of the term 'Emotional Intelligence', and most have had some practical experience with EI (see Table 2.1).

2.3.3 Materials

All participants reported demographic qualities in addition to answering questions designed to ascertain whether they had heard of the term EI and whether they had any formal or informal teaching or experience with EI (see Table 2.1). All three populations were then asked open and closed questions surrounding their understanding, attitudes, and use of EI (see Appendix 8.5).

2.3.4 Procedure

As with all empirical works presented in the current thesis, the research was designed in line with the BPS Code for Human Research Ethics (2014) and HCPC Standards of Conduct, Performance, and Ethics (2016) and ethical approval was gained from Coventry University HLS Ethics Board before data collection began (Appendix 8.1). Participants were presented with a participation information sheet (Appendix 8.2) and consent form (Appendix 8.3) before responding to the aforementioned questions (Appendix 8.5). Participants were debriefed on the purpose of the study (Appendix 8.4) and then their participation was complete. The quantitative demographic results were collated to help describe the

sample, and the qualitative data was analysed using the Framework method of thematic analysis (Ritchie et al. 2013).

Table 2.1 Academic, student and HR engagement with EI

	Academics	**Students**	**HR Professionals**
How many years have you been employed in this capacity for?	5 years, 6 months (SD = 5 years, 11 months)	N/A	25 years (SD = 49 years and 11 months)
Have you heard of the term 'Emotional Intelligence?'	Yes – 100% No – 0%	Yes – 87.7% No -12.3%	Yes – 100% No – 0%
Have you ever received any formal information/teaching on EI?	Yes, some – 30.8% Yes, a little – 38.5% Not at all – 30.8%	Yes, some – 26.3% Yes, a little – 40.4% Not at all – 33.3%	Yes, some – 66.7% Yes, a little 13.3% Not at all – 20%
Have you ever received any training on how to be more emotionally intelligent or on how to use EI measures?	Yes, complete – 3.8% Yes, some – 26.9% No – 69.2%	Yes, complete – 0% Yes, some – 7% No – 93%	Yes, complete – 40% Yes, some – 26.7% No – 33.3%
Have you ever read any academic papers that have explored EI?	Yes, many – 11.5% Yes, some - 69.2% No – 19.2%	Yes, many – 3.5% Yes, some – 31.6% No – 64.9%	N/A

2.4 Results

This section will explore key themes drawn from the qualitative data. Results were analysed using the Framework method of thematic analysis (Ritchie et al. 2013). First, the qualitative data was analysed using thematic analysis in a well-established procedure by Braun and Clarke (2006) to determine key themes within the data. Following refinement, four superordinate themes were extracted, surrounding the definition, positive and negative impacts, and attitudes towards, EI. The Framework method was then enacted to produce a matrix-like output whereby columns represent recurrent themes from the data, rows represent cases (individual participants), and cells of the matrix represent summarised data (Gale et al. 2013). Due to the large sample size, and consistent with exemplar Framework method works e.g. Heath et al. (2012), a discussion of the associated data rather than the matrix itself is provided. As participant's responses were predominantly describing EI and its perceived consequences, a broader discussion follows to explore conclusions about the state of EI

understanding. For example, after looking at the individual perceived benefits of high EI, the ways in which views are consistent, inform understanding of EI, and relate to the extant literature, are commented upon.

Each theme will now be introduced and discussed using direct quotations from academics (AC), students (ST) and HR professionals (HR). An overview of the themes is presented in Table 2.2 below, alongside the percentage of individuals contributing to these from each population. Whilst the quantification of qualitative data in this way is typically considered misleading as the qualitative approach adopted is not designed to be representative of a wider population but instead purposive to capture diversity in understanding and attitudes (Gale et al. 2013; Pope, Ziebland and Mays 2000), this data was presented in lieu of the full matrix to illustrate consensuses and nuances in sample discourse.

2.4.1 The Nature of EI

When asked to provide a definition of EI, very few responses provided insight into the exact theoretical nature of EI. Some definitions were quite ambiguous: “an ability to avoid an amygdala hijack despite the appearance or occurrence of potential triggers” (AC14). Indeed, several EI definitions seemed to be so vague as to be of a mystical or spiritual nature e.g. “the journey towards enlightenment must begin from within” (AC01). However, the term “ability” was frequently used by all three samples, suggesting a common association with the original definition of EI as a cognitive ability (Salovey and Mayer 1990). For example, EI was defined by one student as “the ability to understand, decode and interpret emotions” (ST03) and by one academic as “the ability to be aware of, manage and control one's own emotions and to recognise and be aware of emotions in others” (AC04). Whilst very few definitions explicitly articulated whether they considered EI to be an intelligence type or not, three key abilities aligned with original EI models were highly prevalent: a) recognition or awareness of emotions, b) understanding of emotions, and c) management, control or regulation of emotions. Indeed, numerous student definitions of EI were not too dissimilar to the perspective endorsed by Salovey and Mayer (1990) e.g. the “ability to understand, decode, and interpret emotions” (ST03). These findings are potentially due to the student’s acknowledged propensity to take the EI label literally: “My ideas and views have just originated from taking what I know about the word 'emotional' and 'intelligence' and merging the two together to come up with a definition” (ST13).

Table 2.2 Key Themes Extracted from the Qualitative Data

Superordinate Theme	Subordinate Theme	Discussed by		
		Academics	Students	HR
Definition of EI	Understanding	46%	44%	53%
	Recognition	54%	46%	40%
	Management	54%	51%	66%
	Self & others	38%	32%	80%
	(Context) Appropriate	23%	11%	33%
	Empathy/Sensitivity	15%	5%	40%
	Skills/Competencies	4%	4%	7%
	Social interaction	23%	7%	13%
	Personality	8%	4%	0%
Positive Consequences	Social Interactions and Relationships	38%	51%	93%
	Communication	8%	7%	33%
	Teamwork	27%	11%	33%
	Employability	15%	5%	7%
	Performance and Motivation	35%	14%	60%
	Decision-Making	8%	11%	7%
	Wellbeing and Stress	27%	23%	40%
	Understanding Self	15%	26%	60%
Negative Consequences	Manipulation	12%	19%	27%
	Sensitivity	46%	51%	33%
	None	46%	18%	47%
Attitudes towards EI	Favourable	42%	5%	13%
	Sceptical	50%	4%	40%
	Personal EI	77%	74%	80%
	EI as Academic	46%	37%	13%
	EI as not Academic	69%	53%	20%

Two other common features of EI definitions, especially from HR professionals, was that of managing one's own *and others'* emotions in a *contextually appropriate* manner e.g. "Ability to understand and regulate own emotions and responses effectively in response to situations and responses of others"

(HR02). This is likely due to their own professional practice, where EI is commonly applied to form the basis of competency-based interventions designed to "contribute to success in the workplace and life in general" (HR11). Indeed, two HR professionals referenced the works of Dr Daniel Goleman as their source of understanding; an academic-cum-practitioner who strongly endorses a competency-based approach to EI and the value of such for organisations (Goleman 1998).

Definitions of EI proffered also included reference to empathy or sensitivity: "self-awareness/ insight, self-regulation, empathy" (HR13), skills and competencies: "situation-appropriate social skills" (HR09), social factors: "being a people-person, sensitive, able to persuade, influence" (HR08), and traits: "elements of someone's personality" (ST34). Whilst the former may reflect part of the historical development of EI within the context of 'social intelligence' (Thorndike 1920a), and the latter represents subsequent developments in EI content domain (Goleman 1996; Matthews, Zeidner and Roberts 2004; Schutte, Malouff and Thorsteinsson 2013), the exact nature of the construct being described is often unclear.

In sum, definitions of EI supplied by individuals from all three samples were often vague, and referred to substantially different content domain. This complexity is even acknowledged by one academic defining EI as "a mix of skills and traits" (AC25). Highlighting the aforementioned diversification of perspectives within the academic literature (Caruso 2003; Daus and Ashkanasy 2005), EI is increasingly considered an umbrella term, referring to a label for a number of vastly different approaches to affect-related individual differences (Chang 2008; Joseph and Newman 2010; Petrides and Furnham 2000). It appears that to most, EI can refer to several emotion-relevant abilities, or any number of social and emotional qualities, with no clear consensus emerging on what the nature of this broad range may be.

2.4.2 The Benefits of EI

Broadly, EI was seen positively and bold claims surrounding the perceived value of EI, and the implications for an individual, were common: EI "is a key contributor to success in workplace and life in general" (HR11). Such claims can often be sourced back from the extant literature, where many participants' claims have replicated those disseminated for the non-academic audience. For example, that EI is more important than IQ, and that "We would all benefit from being more emotionally intelligent!" (AC04) (Goleman 1996). The extent to which EI is seen positively is evidenced by several optimistic claims that suggested the consequences of EI training would be socially and/or morally beneficial e.g. that trainees "would actually be nicer people" (AC25).

To further test the tendency to evaluate EI positively, and establish consensuses present in understanding, the academics sampled were asked to estimate the correlation coefficient for

relationships between EI and various related individual differences and outcomes (see Table 2.3). EI was claimed to be very strongly associated ($r > .7$) with individual differences and outcomes commonly perceived as favourable yet not especially affective, such as conscientiousness and employability. The findings also suggest that there is often great variation in estimations however, providing no clear consensus on how such facets are related.

Table 2.3. The percentage of academics who estimated the strength of relationship between EI and various individual differences and outcomes*

	-1 to -.7	-.7 to -.4	-.4 to -.1	-.1 to .1	.1 to .4	.4 to .7	.7 to 1
Neuroticism	16	4	12	28	8	20	12
Extraversion	4	4		48	20	20	4
Agreeable	4			12	20	28	36
Conscientiousness			4	16	16	24	40
Openness				24	24	24	28
Intelligence		4		40	24	20	12
Academic Performance	4		8	24	20	16	28
Employability				12	12	20	52

* Coloured block represents where the mean response fell

The clear majority of qualitative comments made about EI suggest it is a beneficial quality. Individuals from all three samples provided a diverse range of positive consequences of EI. For example, one student reported EI as beneficial for "staying out of trouble i.e. prison, hospital" (ST13). Whilst there is early evidence to suggest sex offenders could have specific EI-based deficits (Moriarty et al. 2001), there is no evidence to suggest that low EI is related to offending behaviour, and no significant differences in EI between non-sexual offenders and the general population have been reported (Puglia et al. 2005). Furthermore, contrary to the main claim made, Bacon, Burak and Rann (2014) report that for females but not males, greater EI was associated with *increased* delinquent behaviour.

The first common theme of discourse was that of social interactions and relationships. Here EI was perceived to "give you a sense of who you can make friends with and if someone enjoys being in your company. Or you can understand if someone has negative emotions and try to comfort them, it means that you can help people and make friends with them too" (ST09). Consistent with the empirical literature, there is strong longitudinal evidence to suggest that affect-related individual differences play a key role in building and maintaining friendships (Niven, Holman and Totterdell 2012; Niven et

al. 2015; Parkinson, Simons and Niven 2016). Both cognitive ability- and trait-based definitions of EI have been associated with relationship quality (see Brackett, Mayer and Warner 2004; Brackett, Warner and Bosco 2005; Lopes, Salovey and Straus 2003; Malouff, Schutte and Thorsteinsson 2014; Smith, Ciarrochi and Heaven 2008).

Relatedly, communication was a second common theme, with EI supporting "courageous conversations" (HR09); and "1:1 conversations which focus on developing an individuals' understanding of themselves better" (ST34). Measures of EI with varying definitions have been associated with a range of communication facets including competence (Law, Wong and Song 2004), conversation orientation (Keaten and Kelly 2008) intercultural communication apprehension (Fall et al. 2013) and even romantic communication via MySpace (Dong, Urista and Gundrum 2008). Broadly, there is support for linking EI with communicative behaviour. For example, Smith, Heaven and Ciarrochi (2008) found trait-based definitions of EI to be a significant predictor of communication patterns and Troth, Jordan and Lawrence (2012) found EI, defined as self-perceived ability, to predict communication effectiveness and appropriateness in self-formed student teams (B = .17 and .15 respectively; p < .01). Furthermore, several competency-based definitions of EI are explicitly inclusive of communication as a central component (e.g. Boyatzis, Goleman and Rhee 2000). A number of the qualitative responses also suggested that EI is "particularly advantageous when having difficult conversations or (communicating) in conflict situations" (HR05). There have been some links in the existing literature e.g. between self-perceived Ability EI and an integrative conflict-management style (r = .35, p < .01; Jordan and Troth 2004) and as such EI has even been related to hostage (crisis) negotiation (Grubb and Brown 2012), however direct evidence is currently limited.

Building upon links to relationships and communication, teamwork was the third common theme within discourse. EI was perceived to be "especially advantageous in a working environment where people have to work into teams and any little frustrations may lead to big issues and problems between the team" (ST42). Again, the academic literature is tentatively supportive of such relationships, identifying relationships between teamwork and EI defined as cognitive abilities (Farh, Seo and Tesluk 2012) and competencies (r = .52; Rapisarda 2002), with similar relationships for related concepts including leadership (Barling, Slater and Kevin Kelloway 2000), and bullying (Baroncelli and Ciucci 2014). Work by the current author has also identified moderate relationships between trait definitions of EI and workplace frustration experience, communication and response (Ward, Evans and Steptoe-Warren 2015). No direct research has explored the role of EI for a "happier workforce" (HR05), however trait happiness has been explored in context of both trait and competency-based definitions of EI (Cherniss 1999; Furnham and Petrides 2003).

Maintaining an occupational focus, EI was also perceived to be associated with employability: For example, whereby several participants believed EI to be vital for "building relationships with others for example during job interview" (ST53), "interview skills" (AC03), and thus "more success at interviews after graduation" (AC03). Such is the perceived importance of EI, that the latest model of graduate employability features EI as a key component (Dacre Pool and Sewell 2007, Dacre Pool, Qualter and Sewell 2014). Employers are increasingly emphasising the importance of interpersonal and emotional competencies, rather than conceptual or analytical skills (Jaeger 2003; Rynes et al. 2003, Shivpuri and Kim 2004, Whetten and Cameron 2005). Such skills may be useful when making career decisions (Vandervoort 2006, Di Fabio 2012), and as such EI is commonly associated with greater likelihood of securing, and the quality of, employment (see also Table 2.3). Whilst there is much correlational literature, for example Dacre Pool and Qualter (2013) linking emotional self-efficacy and employability, there is insufficient causal evidence to draw firm conclusions surrounding the role of different EI facets for employability. This view mirrors that of one academic who adopted a more sceptical position: "We are told that it's important for employability. Not sold on that" (AC23).

Discussing not only the ability to secure employment but also to perform within it, a further common benefit of EI identified from discourse was that of performance and productivity. The complex nature of the relationship between EI and performance was acknowledged by an academic: "some studies suggest benefits to job performance, but lack of evidence of relationship in other studies I believe" (AC19) reflecting early meta-analyses identifying robust relationships (O'Boyle et al. 2011) and more modern meta-analyses concluding a non-significant relationship when controlling for common predictors (Joseph et al. 2015). There were, however, many claims for the value of EI for performance e.g.: generating a "positive and supportive working environment which enables people to stay focussed on the task" (HR02) and for supporting "leaders and managers, take a genuine interest in their staff who feel valued and therefore likely to be loyal and go the extra mile in tough times" (HR14). There is little work exploring the implications of having management high in EI however (see Wong and Law 2002 for an exception), with no specific research exploring the impact on the recognition or extra role behaviours performance of subordinates. Research on the link between EI and organisational commitment or citizenship behaviours has typically drawn indirect or non-significant relationships (e.g. Brunetto et al. 2012; Day and Carroll 2004; Güleryüz et al. 2008; Nikolaou and Tsaousis 2002).

The sixth theme on the perceived benefits of EI surrounded "sensible decision making" (HR09) and "work(ing) emotions to benefit decision-making" (ST41). There is preliminary experimental evidence to suggest that various components of EI may support greater attention to, and thus consideration of, affective information when decision-making (Alkozei, Schwab and Killgore 2016; Fallon et al. 2014). As

affect-informed decision-making can be more effective (Seo and Barrett 2007), ability-based EI may support more flexible decision-making to forgo short-term benefits for long-term gains (Fernandez-Berrocal et al. 2014).

Well-being and stress featured frequently within reports of the perceived benefits of EI: “control their emotion towards a situation, for example feeling too stressed and therefore act in a way to avoid it physically destroying them, for example see a support worker, or take time out from doing so much work to get back to a healthy mental state” (AC18). As a whole, a number of meta-analyses have concluded relatively stable relationships between EI in various guises and physical health (r = .22; r = .27), psychosomatic health (r = .31; r = .33) and mental health (r = .31; r = .36; Schutte et al. 2007 and Martins, Ramalho and Morin 2010 respectively). A recent EI intervention on managers reported causal benefits for increased health and wellbeing, in comparison to a control group, and an average decrease of 11.1% in work related distress (Slaski and Cartwright 2003). A commonly perceived well-being benefit of EI was “reduced depression and suicidality” (AC12). Indeed, EI typically correlates modestly with suicidal intent (Aradilla-Herrero, Tomás-Sábado and Gómez-Benito 2014; Ciarrochi, Deane and Anderson 2002) and there is preliminary (cross-sectional) evidence to suggest EI can act as a protective factor for self-harm and suicidal behaviour (Cha and Nock 2009; Mikolajczak, Petrides and Hurry 2009). Similarly, for depression there have been a number of cross-sectional correlational works, with weaker relationships reported when using ability- in comparison to trait or competency-based definitions, and potential gender differences (Salguero, Extremera and Fernández-Berrocal 2012). Furthermore, some concerns have been raised surrounding the discriminant validity of some EI measures in capturing depression directly (Extremera and Fernández-Berrocal 2005).

The final theme of EI benefits surrounded awareness and understanding of the self and “being able to take responsibility and recognise why they feel a certain way” (AC22). Many individuals sampled equated this emotional self-awareness with morality e.g. “Can prevent you from doing something that's not considered particularly moral, even if you are certain that you can benefit from it” (ST50). Whilst self-awareness is often considered a component of many common EI models (e.g. Boyatzis, Goleman and Rhee 2000; Schutte et al. 1998), there is little research to explore this as an outcome or benefit of EI (see Bratton, Dodd and Brown, 2011; Jordan and Ashkanasy 2006 for exceptions). Similarly, research exploring morality is also extremely limited, with the sole discussion of morality limited to a component of an EI tool used for medical school applicants (Carrothers, Gregory and Gallagher 2000). As such, there is insufficient academic evidence to determine whether “there are still zero EI morons working within organisations committing crimes that contravene e.g. the Equality Act” (AC14).

In sum, EI is perceived to be an extremely positive characteristic, with a smorgasbord of perceived beneficial consequences when applied. The clear majority of participants considered EI as particularly beneficial for building relationships and facilitating success within the workplace. Many of the claims were empirically supported by a modest level of academic support, however there were multiple provocative claims for which the academic evidence is either negligible or even contradicting. This positive approach has led the common conclusion that EI is a socially and morally positive quality, which could represent a problematic distortion or bias in understanding of EI.

2.4.3 The Drawbacks of EI

Broadly, few negative consequences of high EI were noted. In contrast to the links highlighted with morality above, a small percentage of all three samples claimed EI to be beneficial for "manipulating peers" (AC15) "by not presenting oneself in a truly authentic way" (ST34). Consensus of the academic literature suggests that whilst EI may facilitate such behaviours, they are not consistently related, and are dependent upon multiple contributing factors (Ali, Amorim and Chamorro-Premuzic 2009; Austin et al. 2007; Côté et al. 2011; O'Connor and Athota 2013; Petrides et al. 2011).

The most commonly perceived negative consequence of EI was sensitivity to emotion. The possible "emotional fatigue" (ST34) was considered problematic, "making it difficult to make tough choices/decisions" (HR07). Whilst the literature reviewed above concludes that decision-making is enhanced by incorporating emotional information (Seo and Barrett 2007), experimental evidence is consistent in suggesting that high EI is associated with heightened sensitivity to affective information, and that this could be an advantageous or negative quality depending upon context e.g. being more moved by an emotionally distressing movie (Petrides and Furnham 2003; Sevdalis, Petrides and Harvey 2007). Sensitivity to emotion was also presented as problematic in representing vulnerability to manipulation: "It could potentially be draining if they are actively supporting peers/family through difficult times… Some people may also see it as 'weakness' to be extorted (e.g. by persuading them to help with the work etc)" (AC15). The contradiction between claims surrounding the protecting role of EI against distress, and the potential vulnerabilities of individuals with high EI, has not yet received robust academic attention or resolution.

When asking about the negatives of being high in EI, the most popular single-word response was "none". Indeed, one academic provided a tautological argument whereby EI cannot be seen as a negative characteristic: "There is none [negative consequences]. For example, if I were to say risk of being over sensitive to others needs, then this would indicate a need for growth in emotional intelligence" (AC16). When negative consequences could be identified, they were often presented simplistically, with conditional adverbs to suggest tentativeness. For example: "manipulative maybe?" (AC03) and "maybe over-sensitive" (HR07). A similar lack of consideration for negative consequences

in the academic literature has recently been highlighted by Côté et al. (2011) and Davis and Nichols (2016).

In sum, EI is predominantly considered positive, however concerns surrounding its role for manipulation or emotional fatigue were raised. The body of academic literature exploring such negative implications of EI is relatively minimal, and the contradiction between the simultaneous vulnerability and protective role proffered by high EI in emotionally-demanding contexts is yet unresolved.

2.4.4 Attitudes towards EI

Within discourse of the three samples examined thus far, various inconsistencies and contradictions on the nature and consequences of EI have been identified. Continuing this trend, and in-line with the broad and diverse nature of these claims, themes surrounding participant's attitudes towards EI are now presented.

Consistent with the broad range of benefits to EI posited, the first theme prevalent within the data was that of a favourable attitude. Many individuals perceived EI to be a credible construct of value to many domains of work: "I teach future teachers, so they really need to be emotionally intelligent in order to set good relations with their students and colleagues; It is very important, but unfortunately not respected enough (compared to, for example, mathematical abilities)" (AC10). Furthermore, the perceived value was often considered high, despite inconsistencies within individual's accounts of EI: "Emotional Intelligence is not a quality that is measurable… but having said that it is a quality that would be beneficial in any occupational field" (AC08).

Despite the positive image of EI presented, many individuals also endorsed sceptical opinions of EI. Some respondents were sceptical about EI to the point of provocative: "It's a cluster [of constructs] that businesses like. It's not anything different so a bit like NLP [Neuro-Linguistic Programming]" (HR04). Such views are well reflected in parts of the existing literature, where some scholars believe EI represents the repackaging of existing constructs (Joseph et al. 2015) and have thus recommended a moratorium in EI research (Locke 2005). There also appeared to be a similar lack of trust in current EI measures: "Are they (colleagues) really (emotionally intelligent)? May self-report so, but others experiences may be quite different. Concerns on how it is measured as feel responses can easily be manipulated" (HR06). Such concerns are not completely unwarranted, with several measures demonstrating modest susceptibility to socially-desirable responding (Choi, Kluemper and Sauley 2011; Grubb and McDaniel 2007). The questionable reputation of EI as a "fad and fashion" (AC14) was thus evident both in the data and existing literature (Hogan and Stokes 2006).

Regardless of their own opinion on the construct itself, the clear majority of respondents from all three samples believed they embodied the qualities of EI. When asked whether participants believed themselves to be emotionally intelligent, the most popular first word in response was “yes”. Whilst not always consistent with their original definition of EI, participants often justified their response with positive descriptions of their affective qualities. For example: “Yes… I feel that I am able to understand and communicate in social situations appropriately. I can deal with emotional situations and provide a valid response. Also, I have great levels of empathy” (HR01). The number of individuals endorsing positive responses to the question (74-80%) seems ill-proportioned for what would be expected from a normally distributed individual difference and thus the possibility for bias requires consideration. For example, the Dunning-Kruger effect, whereby individuals low in ability report inflated self-assessment of their ability (Kruger and Dunning 1999), was acknowledged: “I would say I'm above average for emotional intelligence… however, I would say my emotional intelligence is good enough to know that I'm not very emotionally intelligent” (ST35). Other biases also seem likely, for example self-serving bias whereby most perceived themselves to be high in EI, and the Halo Effect (Thorndike 1920b) whereby most of the sample identified only favourable implications of such a quality and tentatively presented few negatives (see also Table 2.3). Even when EI was presented as a quality without valence, participants often presented socially and morally-beneficial applications and outcomes, optimistically reporting EI could be used to achieve desired ends. This conflation of positive uses, and positive motivations, is rife and well reflected by the dearth of literature exploring the negative intrapersonal and interpersonal outcomes of EI (Côté et al. 2011; Davis and Nichols 2016). There is a small yet growing body of evidence to suggest EI can facilitate goal achievement, whether positive or negative (Côté et al. 2011; De Raad 2005). Thus, EI is likely to relate to both socially/morally positive and negative qualities and outcomes (e.g. Narcissism; Nagler et al. 2014).

The final themes summarising the data represent the extent to which the discourse presented a discussion informed by academic works. Limited scholarly attention was evidenced through the lack of reference to researchers or empirical work within the responses of most participants. Very few EI researchers were acknowledged directly by participants; however, this was somewhat more common within the academic sample (e.g. Goleman, Mayer, Salovey, Schutte, and Sternberg). Very few participants related their knowledge to academic sources, and when they did they presented the evidence-base around EI as inconsistent: “some studies suggest benefits to job performance, but lack of evidence of relationship in other studies” (AC19).

When asked where participants gained knowledge to inform their responses, many perceived EI as experiential and not of scholarly pursuit. EI was defined ambiguously but overwhelmingly positively within responses, and as such was discussed by many as if common sense. For example, one academic

attributed their understanding of EI to the “School of hard knock - at work and seen "live" from friends” (AC09) whereas one student reported “my brain lol” (ST28). Based upon the current data, EI is often discussed as if perceived to be more of a colloquial term than a robust psychological construct. This is particularly evident in the discourse of one academic who jokingly reported EI to be “more important than hygiene, less important than trustworthiness.” (AC24). Such findings are evident in similar fields whereby despite being capable of both positive and negative impacts, some constructs are not consistently taken seriously by academics or practitioners. One such example is humour, which shares a similarly ambiguous nature, on this occasion due to the subjective nature of what can be considered humourous (Evans and Steptoe-Warren OnlineFirst).

For the clear majority, understanding of EI was not often contextualised by academic literature. For example, one HR practitioner (HR15) reported being emotionally intelligent because: “People tell me. I became a psychologist because of it and it makes me a good one”. This lack of academic insight is perhaps not surprising given how individuals often report being unable to remember how they obtained scientific information, commonly reporting personal experience and media sources as their source of knowledge (Taylor and Kowalski 2004), however, this is nevertheless problematic. The lack of robust attention to EI as a psychological construct was raised by a few participants, and was considered problematic due to the lack of robust evidence: “many consultancies… work… in the hope of developing EI (and this might be unfair!) without a good understanding of what EI is or indeed whether it can be enhanced” (AC22).

Very few participants explicitly mentioned, or even implied, the understanding of the theory underpinning EI. Instead, views often came from media, websites and news articles: “Much of what I have mentioned has its roots in popular and cult media such as the following ('Cowboy Bebop', 'Trigun', 'Aliens' and also the classic 'Predator')” (AC01). As such, a key contribution to the lack of understanding appears to be the lack of robust theory. Whist some researchers were noted, very few participants referred to any theory, model, or framework that could have contextualised their findings. It is likely that an absence of clear conclusions was at least partially attributable to the multiple perspectives on EI which have not yet been differentiated or united (despite appearing meaningfully related) and lack of clear theory or framework to contextualise them: “There does appear to be more focus on EI in mainstream and 'self-help' books as opposed evidence based approaches” (AC22).

In sum, EI appears to be used as a colloquial term to refer to various social and emotional qualities, rather than a well-respected individual difference. The work of various researchers was rarely acknowledged; however, the most notable quality of discourse was the lack of theoretical discussions

to help contextualise EI. It appears that EI is lacking a clear theoretical structure from which it can be clearly contextualised, differentiated from existing individual differences, and applied responsibly.

2.5 Discussion

The aim of the current chapter was to understand current conceptualisations of EI, and empirically examine knowledge and views regarding EI within three populations: researchers and teachers of psychology within Higher Education, psychology students, and HR and recruitment/selection practitioners. Findings from all three populations suggest that EI as a colloquial term is well-known, and is commonly thought to be relevant to a wide variety of fields of work and study. However, EI represents different things to different people, and the academic, psychological, conceptualisation is inconsistent and often contradictory.

2.5.1 Results

Four key themes surrounding the state of the EI field arose from participant's discourse. The first of which explored the perceived nature of EI. When attempting to define EI, participants from all three groups often experienced difficulty clarifying the exact context or quality of EI, whether it represents emotional abilities, a collection of social skills, a spiritual "journey of enlightenment", or other quality. Whilst many endorsed approaches analogous to Salovey and Mayer (1990), accounts of EI were inconsistent across, and even within, individuals. As such, definitions were often diverse, vague, and contained phrases that suggested a lack of clear theoretical context. The extent of diversity evident in responses suggested the characteristics different individuals refer to as EI are substantively different, often representing a blurring of concepts from a variety of models to reflect a broad positive social/emotional quality. It seems that as the nomological net of EI has increased, so have the inconsistencies disseminated surrounding the construct, leading the sampled students, researchers, lecturers, and HR professionals to hold an unclear or distorted view of EI theory and application. The extent of diversity in views identified suggests that no single consensus or consensuses can yet be confidently established on the perceived nature, definition, or consequence, of this individual difference. The variety demonstrated is consistent with the aforementioned jingle fallacy demonstrated through the extant literature, whereby numerous, vastly different, constructs have been labelled as EI (Caruso 2003; Daus and Ashkanasy 2005). Echoing the conclusions of the current academic literature, EI is perhaps best considered an umbrella label for a collection of diverse affect-related individual differences, with a growing need for clearer standpoints from which academics and non-experts can structure understanding of these individual components.

The second and third themes presented explored the perceived benefits and drawbacks of EI. Several extreme claims, particularly surrounding the value of EI for success in various aspects of life, were

raised by participants, whereby the current body of empirical evidence would provide modest support at best, and contradict at worst. Perceived links to relationships, health and performance have growing bodies of supporting empirical evidence, however inconsistencies and contradictions surrounding manipulating tendencies, employability and offending behaviour appeared especially problematic. The use of EI as a 'buzzword' to represent a diverse range of constructs appears to have contributed to polarised discussions and claims surrounding the value of EI. The degree to which such claims are veridical is yet unclear given the limited evidence base, however based upon the initial empirical findings within the extant literature, many seem unlikely. Understanding of EI is therefore presented as a provocative arena within which many polarised claims may require refutation before EI is accepted as a credible construct.

The final theme explored attitudes towards EI and identified both favourable and sceptical approaches. The current data suggests that inconsistencies surrounding the value and application of EI perpetuated within the literature and media have led to the common acquisition of many extreme and controversial beliefs. For example, several researchers and practitioners have claimed that EI is a fad "perpetrated on a gullible business community by shameless purveyors of psychobabble" (Hogan and Stokes 2006: 263) and many participants reported similar views, claiming EI to be a "fad and fashion". Some participants also picked up on academic discussions surrounding the ambiguous degree to which EI represents a cluster of qualities that replicate well-known individual difference constructs. This line of inquiry has been a key discussion within the academic literature, and one that has not yet been adequately resolved. Many researchers have argued that EI, particularly when defined as traits, represents personality "repackaged" (e.g. Joseph et al. 2015). Indeed, some correlations between EI traits and neuroticism have been very strong ($r = .80$; Dawda and Hart 2000). Many bold inconsistencies, contradictions and extreme attitudes towards EI exist, the clear majority of which have not yet received substantial academic attention to either dismiss, refute, or disseminate with confidence. Whilst most participants perceived EI to be a beneficial quality associated with success in a wide range of contexts and in life generally, many cognitive biases surrounding positivity were evident in their accounts, including the Dunning-Kruger effect, self-serving bias and halo effect. As such, an overly-positive and thus distorted image of EI may be commonly held. The continued dissemination of such biases is potentially restricting meaningful growth in understanding the full range of qualities and consequences associated with EI. Furthermore, participants from all three samples often attributed very little of their comments and opinions to any academic origin, and even when they did so, there was a lack of consistency with which EI was presented from a theoretical perspective. This is consistent with the high levels of myth acceptance evident in fields such as personality, intelligence, emotion and motivation (Furnham and Hughes 2014). However, there was

very little evidence to suggest the understanding presented by the participants was anything different from the diversity found within the aforementioned academic literature. Indeed, often the specific claims made by participants directly echoed the literature. For example, relationships between EI and job performance have received mixed and frequently contradictory findings due to the lack of clear theoretical standpoints (Joseph et al. 2015; O'Boyle et al. 2011). As such, EI seems to be understood as a colloquial term to represent a broad range of positive affective and social individual differences but is not especially consistently-understood from an academic perspective.

Underlying many of the themes identified within the current data was the lack of clear content domain and theory to ground views and claims. A lack of consistency, clarity, research-informed, and theoretically-informed opinions presents a pessimistic view of the future of EI, despite the positivity with which EI was perceived. One psychology teacher provided a succinct summary of the current state of EI, based upon the data presented: "I think the term is not as a clear nor as definite as researchers make it out to be" (AC07). A broad number of perspectives on EI reflecting the diversity of the extant literature have been presented and conflated by the data, and as such a number of common biases and inconsistencies have been highlighted. Establishing a clear framework or consensus on theoretical perspectives from which EI can be understood and contextualised must be a key priority for overcoming the biases and contradictions present within the field. Current understanding of EI is a key barrier that needs addressing before the potential can be explored for EI to contribute to explanations of individual differences and the subsequent fields they are applied within.

2.6.2 Limitations

When interpreting these findings, it is important to be mindful that it is unclear whether the current study has adequately reached data saturation point, capturing the full range of attitudes and understanding of EI. Data was predominantly collected through close avenues of the researcher, such as the researcher's students. Similarly, much of the data on academics and HR professionals was collected during an annual occupational psychology conference (Evans and Steptoe-Warren 2017) where the researcher has presented on EI yearly (Evans and Steptoe-Warren 2015b; 2016; 2017). There is a concern that, given the controversial nature of EI, the current study may have been less likely to capture those that dismiss EI rather than those who make extreme claims about its value. However, the data collected suggest that the sampling methods may not have had a strong impact upon the subsequent conclusions drawn. There appears to be a distinct lack of researcher effect seen in responses, where claims previously made by the researcher have not been replicated by participants. Furthermore, given the diversity in responses to the open questions, results suggest substantial variation in respondent's attitudes and knowledge of EI was captured. There is a distinct

possibility that certain communities with a good understanding of EI exist yet were not represented, however these results nevertheless suggest there is a wider problem with EI understanding, as there is a lack of consensuses or clarity representing successful dissemination from that community. It is thus reasonable to conclude that the current study has highlighted the fragility of understanding, prevalence of provocative claims, and lack of clear theoretical standpoints, surrounding EI.

2.6.3 Applications

Whilst the misunderstanding of EI may appear innocent, it is likely to be of great consequence for the perpetuation of contradictions and the misuse of constructs and measures. For example, HR professionals appear to be applying EI, and the current findings suggest they could be making misinformed decisions by holding a distorted or over-inflated sense of the value of EI. The decision to hire or promote a certain individual over another can have a plethora of consequences, especially within education and healthcare where outcomes are likely to be especially negative when the decision is not made based upon an accurate understanding of empirical evidence (Land 1993; 1994; Liu and Johnson 2006). In addition to the numerous negative individual and societal impacts of poor recruitment and selection, the organisational cost is also high. The costs of poor recruitment and selection in the UK totals over 12 billion (Czerny 2004), roughly £30,614 per post (Oxford Economics/UNUM 2014), with not only implications for finances, but for morale, motivation, group cohesion and subsequent profitability and stability also (Sutherland and Wöcke 2011). As such, EI-based recruitment therefore seems problematic given the insufficient evidence to understand the exact nature of EI and its likely consequences when applied (Cadman and Brewer 2001).

Provided that our future Universities, HR Departments, and Industries are likely to be led by current graduates, the consequences of misunderstanding for students and academics also seems problematic. The current data suggests some academics teaching EI may be perpetuating inconsistencies and contradictions, rather than supporting students to think critically and build arguments based upon the quality of evidence available. The inconsistency in claims surrounding the value for education (Zeidner, Roberts and Matthews 2002), healthcare (Mikolajczak and Van Bellegem 2017), and business generally (Druskat, Mount and Sala 2013), suggest misunderstanding may lead to inappropriate dismissal or adoption of EI, making use of evidence-based practices less likely. The inconsistency of understanding identified in teachers and researchers of psychology suggest a circular process that perpetuates inconsistencies is likely to be operating. The issue appears particularly troublesome given that over half of the academics sampled taught EI in relation to their own field, yet held inconsistencies and biases within their understanding of EI. This misunderstanding is frequently replicated within the published literature, with little acknowledgment or clarification of perspectives on EI, or theoretical justification as to the model and thus measure of EI chosen. This is of significant

concern because, as a self-perpetuating culture, any change in EI understanding is likely to be slow, resisted, and/or perceived as contradictory, threatening the future development of the field.

2.6.4 Future research

EI is perceived as a complex and multifaceted collection of positive affect-based qualities and as a field can be described as a controversial, bias-rich, and theoretically unstructured arena. EI is thus likely to face numerous obstacles before being accepted as a credible individual difference construct. Alongside the inconsistencies and lack of clarity in the general academic literature, the data presented raises significant concerns for the future of EI as a concept that, despite holding some valuable potential, is currently seen to under-perform, be over-sold, and lack consistent empirical rigour (Matthews, Zeidner and Roberts 2004; 2007). This inconsistency in general awareness and understanding of EI replicates that found within the academic literature, and should be considered problematic. Researchers require public engagement to develop EI through both theoretical and applied research projects, yet the public appear to have no, or contradictory/distorted, perceptions of EI that could limit the participation or impact of such works. EI may hold some potential for the improvement of understanding of phenomena, and individual differences more widely; however, a clear theoretical structure is paramount to help structure future understanding. The key priority of future research should be in establishing a robust body of evidence surrounding the theoretical grounding of EI. Many claims as to how EI links to personality and intelligence have been made, and a more concerted effort to identify and contextualise EI within these models appears of growing necessity to resolve inconsistencies and build consensuses. It is hoped that with wider exploration and distribution of theoretically-informed models, such as those to be detailed in section 2.9, EI could be understood and applied effectively. It is then of significant priority to reduce inconsistencies surrounding EI within the public domain, whether that be through experiential methods i.e. through theoretically-appropriate works such as mass-media interventions (Schutte and Malouff 2016), or by fostering greater public engagement with EI research and refutational information (LaCaille 2015), the latter of which has been suggested as best practise for lowering rates of psychological myth acceptance (Kowalski and Taylor 2009).

2.7 Current academic understanding

The broad understanding of EI currently appears fragmented in three key stakeholder groups; with some claiming the aforementioned benefits of EI appear so unlikely to achieve fruition that the field should be permanently dissolved (Brody 2004; Landy 2005; Locke 2005). Clarity on the nature and content of EI are required to fully appreciate the ways in which EI could contribute to explanations of emotional phenomena, and can be subsequently applied in a responsible and ethical manner. The

current chapter therefore now aims to explore multiple published conceptualisations and models of EI to determine whether any robust consensuses have been managed by the EI academic community.

Attempting to preserve the clarity of the original ability-based definition of EI, whilst also acknowledging the diversity in individual differences being studied under the title of 'EI', the most pervasive divide in EI literature has been between ability and trait perspectives (Ashkanasy and Daus 2005; Joseph et al. 2015; Zeidner, Roberts and Matthews 2008). Ability EI was designed to represent the cognitive abilities underpinning the processing of cognitive ability whereas Trait EI was conceived to encapsulate and unite the "eclectic mix of traits, many dispositional, such as happiness, self-esteem, optimism, and self-management" (Mayer, Salovey and Caruso 2008, 503). This ability-trait divide has been applied in many works since (e.g. Schutte et al. 2007) and whilst positive for discriminating between perspectives, the ability-trait divide was problematic in two ways. Firstly, the definition and theoretical specificity of the trait EI approach was unclear, encapsulating a broad range of constructs many of which would be considered beyond the realm of personality traits. One solution to this was to label non-ability content as mixed EI (Mayer, Salovey and Caruso 2000, e.g. Joseph and Newman 2010 and Van Rooy, Viswesvaran and Pluta 2005) however this still did little to clarify what exactly this content domain represents. Secondly, this differentiation led to a number of papers presenting them as competing explanations, with research adopting only a single approach or critiquing one using the other (e.g., Mayer, Salovey and Caruso 2000; Zeidner, Roberts and Matthews 2008). If capturing different yet related constructs, the two perspectives should be explored simultaneously and considered symbiotic to provide optimal explanations and predictions of phenomena.

In an attempt to unify ability and trait models, Mikolajczak (2009) presented distinctions between knowledge, ability and disposition, proposing a hierarchical model where each factor underlies the one preceding it. Here Ability EI represented the ability construct and Trait EI portrayed the dispositions. The biggest contribution of this model was therefore introduction of an additional 'knowledge' construct, which considers either explicit or implicit information to 'loosely' translate to ability. This theory is broadly consistent with the empirical evidence, however as the relationships identified are typically weak, the utility of such understanding if the level of knowledge does not strongly relate to the EI ability is questionable. In an attempt to justify such dissociation, Mikolajczak cites the automatic processing of emotion e.g. spiders eliciting heightened emotional reactions automatically despite the knowledge they are of no/little harm (Philippott 2000). This is consistent with multi-level models of emotion, which suggest systems exist for both preattentive automatic processing of fear, and conscious deliberate processing (LeDoux 1996), but how this helps explain the link between knowledge and EI is unclear. Furthermore, from a theoretical perspective, proponents of Ability EI have suggested that the knowledge component is held within current Ability EI models

and underpins many abilities e.g. knowing lowered lip corners are a typical sign of sadness (emotion understanding) and that telling a joke may evoke happiness (emotion management). As such, there has been limited adoption of this model of EI.

An alternative approach to expand the Ability-Trait divide, and to negotiate the theoretical ambiguity of the trait approach, was to incorporate a third stream of research to acknowledge 'other' concepts outside of abilities or traits (Ashkanasy and Daus 2005; Caruso 2003). The third factor has received substantively different labels including competency EI to encapsulate trainable skills captured using other-report measures (Caruso 2003) and mixed EI to represent a collection of constructs which do not all or fully conform to either ability or trait approach. A common alternative three-stream conceptualisation was proposed by Ashkanasy and Daus (2005). In the first stream EI is defined as a cognitive ability and captured by maximum performance testing, as originally intended by Salovey and Mayer (1990). The second captures self-reported abilities based upon the Salovey and Mayer model. The third stream of EI is considered mixed, combining a range of constructs captured by self or other-reports that do not conform to the Mayer-Salovey model. Within contemporary research this is a popular three-stream approach, having been adopted by a number of meta-analyses to structure synthesis of individual works (e.g. Miao, Humphrey and Qian 2016; O'Boyle et al. 2011).

There are a number of outstanding questions surrounding the exact theoretical nature of EI which are not adequately addressed by the aforementioned 3-stream conceptualisations. For example, where Ability EI stands in context of modern intelligence theories like the CHC, and whether/where Trait EI fits in existing personality models (e.g. the Big Five) is unclear. Furthermore, the theoretical grounding to, and thus boundaries in content domain between, different approaches is unclear, especially for trait, competency, mixed or self-perceived ability-based definitions of EI. The 3-stream approaches were not developed using theory, but driven by the need to differentiate between measures used by the existing research to represent different EI content domain. Many of the current measures were developed without this guiding structure and thus have questionable theoretical origins and poor psychometric qualities, as will be discussed shortly. Furthermore, despite the 3-stream structure differentiating between various types of EI research to help interpret the existing literature, EI is often still referred to as a single construct without acknowledgement of the nuances which underpin its value. As such, clarification on the multifaceted nature of EI research, and thus the issues in theory and content domain proposed, seems unlikely without a more theoretically-informed understanding of EI and the individual differences it may encompass or relate to.

2.8 Remaining contradictions and inconsistencies

The rapid and piecemeal development of EI literature has outstripped any meaningful theoretical understanding, and the commercialisation of EI tools appears to have exacerbated inconsistencies in terminology and measurement (Dulewicz, Higgs and Slaski 2003; Locke 2005; May and Carter 2012). Numerous models and measures that share little more than a name now exist. Most of the extant empirical literature either adopts only one strand, presenting it as the preferable approach, or pits the different streams against each other with a view to identifying which model is 'correct' or 'best' (e.g., Mayer, Salovey and Caruso 2000; Zeidner, Roberts and Matthews 2008). It is therefore unsurprising that understanding and empirical support for EI is inconsistent and contradictory (e.g. Cherniss et al. 2006; Goleman 2000; Zeidner, Roberts and Matthews 2008). The lack of coherence and clarity in the EI field, worsened by the commercialisation of the construct, appears to have caused "considerable confusion among researchers in the field" (Roberts, Zeidner and Matthews 2001: 200). Waterhouse (2006) suggests authors are not always clear about different distinctions and meanings, perpetuating the perceived confusion on the nature and boundaries of EI models (Daus and Ashkanasy 2005; Pfeiffer 2001).

Based upon the diversity represented in current EI conceptualisations, the extent to which EI is understood is questionable, and thus the ways in which EI can be responsibly applied are unclear (Zeidner, Matthews and Roberts 2009): "This flurry of activity has had the potential for great confusion among scientist and practitioner, student and expert, alike: Different models and measures of EI frequently emerge as entirely dissimilar." (Roberts et al. 2010: 823; Section 2.7). A lack of understanding is presented in much academic research published to this day. For example, many published works in the last year refer to a mixed EI (e.g. Baczyńska and Thornton 2017; Miao, Humphrey and Qian 2017a; 2017b; 2017c) despite acknowledging it refers to "a broad concept that includes (among others) motivations, interpersonal and intrapersonal abilities, empathy, personality factors and well-being" (Gutiérrez-Cobo, Cabello and Fernández-Berrocal 2017). Other recent definitions of EI similarly appear problematic, with researchers adopting Trait EI despite suggesting "it is tentative to believe that Trait EI shares commonalities or even overlaps with personality characteristics" (Gong, Fletcher and Paulson 2017: 72). Finally, bold claims surrounding the value of EI continue to be disseminated. For example, Mikolajczak and Van Bellegem (2017) argue that a 1% increase in intrapersonal EI would lead to a 1% decrease in healthcare expenditure. Despite a large sample size (N = 9616) this claim is problematic as a) the research is cross-sectional and can therefore not represent causal evidence, and b) the trait theoretical model was referred to despite this being the least malleable (Hodzic et al. 2018), use of a theoretically ambiguous measure (Evans and Steptoe-

Warren, 2015a), and citing mixed EI works (e.g. Karahan and Yalcin 2009; Kotsou et al. 2011; Nelis, Kotsou, et al., 2011).

The lack of theoretically-grounded research, in addition to strong claims, over-exaggerated findings, and inconsistent commercialised practices, has led EI to develop a somewhat justifiable reputation as a fad "perpetrated on a gullible business community by shameless purveyors of psychobabble" (Hogan and Stokes 2006: 263), "sold on the basis of positive testimonials and flimsy anecdotes" (Clarke 2006: 423). In response to the lack of clear understanding and appropriate applications of EI, calls have been made to reject the EI construct (e.g. Brody 2004; Landy 2005; Locke 2005). The current thesis argues that such calls are likely to further polarise discussions and increase the risk of "throwing the baby out with the bath water" (Ashkanasy and Daus 2005), that is, denying the value of EI when it may contribute to explanations of phenomena. At best, EI could be conceptualised as an umbrella term that artificially combines substantively different affective individual difference constructs. At worst, EI is a dangerous and misleading rebranding of well-established psychological constructs. The lack of consensuses within the EI field have led some to dismiss it completely, whilst others utilise atheoretical models and measures to make invalid conclusions and unethical real-world decisions in areas such as work, recruitment, and education (Ashkanasy and Daus 2005). For example, there have been many calls for EI-based nurse recruitment, with no clarification on EI perspective adopted, or causal evidence to suggest such practices would be effective (Cadman and Brewer 2001).

However, before absolute dismissal, a strong body of theoretically-informed research is needed to clarify what EI can refer to, and whether it holds any practical use when differentiated from, and explored alongside, established individual difference constructs. Whilst there does appear to be some misunderstanding and misuse of EI, it is vital to acknowledge that, in comparison to the study of similar constructs such as intelligence, EI is still in its infancy (Emmerling and Goleman 2003; Jordan, Ashkanasy and Hartel 2003; Van Rooy, Viswesvaran and Pluta 2005). EI shows early signs of demonstrating potential to expand understanding of individual differences and the multitude of fields in which they are applied (Cherniss et al. 2006).

A number of papers have previously provided classification systems, such as the aforementioned 3-streams, to group the many EI-related constructs and prevent researchers and practitioners from generalizing across the different 'types of EI' (e.g. Baczyńska and Thornton 2017; Gong, Fletcher and Paulson 2017; Szczygieł and Mikolajczak 2017). Typically, these classifications have been based upon measurement tools, measurement approaches (e.g., maximal performance vs. self-report), or have focused on differentiating Ability EI from other models (e.g., Ashkanasy and Daus 2005; Joseph et al. 2015; Zeidner, Roberts and Matthews 2008). Encouragingly, most models are more complementary

than conflicting (Ciarrochi, Chan and Caputi 2000). Each of the approaches explored have merits, but none have yet developed into a meaningful theoretical framework that can be used to rigorously evaluate the full range of EI-related constructs or prevent conceptual confusion. Indeed, some classifications, such as the mixed model grouping, which is by definition atheoretical, is confusing and of no scientific utility. In some cases this atheoretical amalgam, and studies that seem to legitimize it, might actually exacerbate rather than reduce false claims and contradictions (e.g., Joseph et al. 2015).

Having identified that misunderstandings exist within the literature and in the minds of key populations, it is important to develop a clearer understanding of EI. The current thesis therefore builds upon extant theories and models of well-established affective individual differences to provide a context and framework to explore and evaluate the value of EI. The final goal of the current chapter will be to look at various theoretical perspectives and ground EI within existing frameworks from three domains – cognitive ability, personality, and emotion regulation. In doing so, this removes the need for terms such as mixed EI, and provides a simple framework to classify EI-related constructs, subsequently addressing several pervasive questions within the field. By differentiating EI-related individual differences, the current chapter aims to provide scholars and practitioners with a clear and useful framework that will provide a platform for theoretical refinement, measure development, and future research.

Towards these goals, the current chapter now presents a review of the literature considering various EI-related constructs as extensions of well-established affective individual differences. Exploring EI as a multifaceted individual difference construct, building upon the existing links established with personality and intelligence constructs, and rejecting the theoretically ambiguous mixed models of EI, the current chapter presents three theoretically-driven approaches to EI. First, EI will be explored in context of intelligence frameworks, analogous to the original conceptualisation of EI. Second, it will be considered whether EI can represent an extension to, or compound of, existing affect-related personality traits. Third, Emotion Regulation is presented as a theoretically-robust alternative to EI competencies/mixed EI based upon shared content domain.

2.9 EI Theory

2.9.1 EI as cognitive abilities

Adopting the intelligence or cognitive ability perspective whilst incorporating an emphasis on emotions, Salovey and Mayer (1990: 189) defined EI as the cognitive abilities required to “monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions”. The theoretical backdrop to Ability EI is synonymous to that of general cognitive abilities, essentially, that individuals differ in their cognitive capacity to recognise,

comprehend, and manage emotions in much the same way as individuals vary in their capacity for numerical reasoning or spatial awareness (Mayer et al. 2001). Having demonstrated individual differences in the processing of affective information (Mayer, DiPaolo and Salovey 1990), Mayer and Salovey (1997) reported four key abilities underpinning EI: the ability to perceive, understand, manage, and use emotion. This is now well-known as the four-branch structure of EI (Mayer, Caruso and Salovey 2016). However, the context of Ability EI has been a contentious debate, with resistance against establishing a new affective component within existing cognitive ability models. In this section, the empirical evidence for grounding Ability EI within the Cattell-Horn-Carroll model of cognitive ability is explored.

Whilst the definition has changed slightly throughout the past twenty years (see Table 2.4), the fundamental nature of Ability EI, that of a cognitive ability, has remained unchanged. Some researchers have criticised this approach to EI by arguing that emotions are not rational and thus cannot be reasoned with (e.g. Locke 2005). However, there is growing evidence to suggest that EI can represent a distinct set of cognitive abilities, not simply affective domains of existing abilities, that can be placed within existing intelligence frameworks (Bowman, Markham and Roberts 2002). Conceptualising a new form of intelligence, research adopting this approach began to develop the body of evidence necessary to demonstrate the conceptual, correlational, and developmental criteria expected from a cognitive ability (Mayer, Caruso and Salovey 1999).

Defined as a group of affect-related cognitive abilities, Ability EI satisfies the first, conceptual, criteria to be considered an intelligence type (Mayer, Caruso and Salovey 1999). Predominantly this approach was led through the development, evaluation, and application, of a maximum-performance based-measure of EI, the MEIS (Mayer, Caruso and Salovey 1999; Roberts, Zeidner and Matthews 2001) and the subsequent Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey and Caruso 2002) The MSCEIT was designed to 'objectively' capture the four branches of abilities proposed by Mayer and Salovey (1997), namely, the *perception* (accurately perceiving emotions), *facilitation* (using emotions to aid performance), *understanding* (comprehending how emotions arise and develop), and *management* (regulating one's own or others' emotions) of emotions (Mayer and Salovey 1997) using a range of eight tests, from identifying emotions from faces and paintings, to rating the effectiveness of actions to situations involving one's own emotions.

The MSCEIT has been the most popular measure of Ability EI (Fiori et al. 2014), however researchers have recently acknowledged that additional measures of Ability EI are needed, in part because a single measure is unlikely to provide sufficient evidence for the existence of the construct (Mestre et al. 2016) and also because there have been a number of notable critiques regarding the psychometric

properties of the MSCEIT (e.g., Matthews, Roberts and Zeidner 2004; Maul 2012). For example, empirical evidence suggests that the perception factor has limited convergent validity as demonstrated by inconsistent correlations with other measures of emotion recognition (e.g., MacCann et al. 2003; Roberts et al. 2006). Further, empirical evidence has demonstrated that the facilitation branch does not hold in factor analyses, with many of the facilitation measures loading on to the perception and management factors (e.g., Fan et al. 2010; Roberts et al. 2006). Indeed, numerous studies now provide support for a hierarchical three-factor model, with emotion perception, understanding, and management correlating highly and loading onto a single higher-order Ability EI factor (Fan et al. 2010; MacCann et al. 2014).

Ability EI research critique has also focussed on the extent to which measurement of emotion-based cognitive abilities can have an objectively 'correct' or 'incorrect' answer, and thus whether adopting the maximum-performance testing paradigm required to be defined as a cognitive ability is possible. Correct answers for the MSCEIT have been determined by both consensus and expert judgement, which have strongly converged (Mayer et al. 2001). This scoring method has been deemed problematic, representing emotional conformity and measurement error (Legree et al. 2005; Maul 2012). The scoring has also caused measurement-based issues as the consensus has led to a distribution of scores whereby the test is subsequently less able to differentiate individuals with moderate or high ability (Fiori et al. 2014).

Problematically, the MSCEIT measure has been considered analogous to EI theory, with few alternative measures using theory-driven scoring. There are several tests capturing emotion recognition (perception), in-line with the origin of EI in non-verbal communication (Riggio 2010). For example, the Japanese and Caucasian Brief Affect-Recognition Test (Matsumoto et al. 2000) and Reading Mind in the Eyes Test (Baron-Cohen et al. 2001) assess emotion recognition from images of faces. More complex and ecologically valid tests are available, for example the Geneva Emotion Recognition Test (GERT; Schlegel, Grandjean and Scherer 2014) which uses videos with sound. However, analogous to the MSCEIT, the GERT is less effective for differentiating individuals with moderate or high ability due to consensus scoring, in addition to data exclusion during validation and the multi-modal nature of information presented (Schlegel, Grandjean and Scherer 2014). There are few validated tests examining the other cognitive abilities however, with the exception of the Situational Tests of Emotion Management and Emotion Understanding (MacCann and Roberts 2008) which use a situational judgement test design and Appraisal Theory-based scoring (Roseman 2001). See Table 2.5 for a brief overview of typical measures from each perspective discussed.

Table 2.4: Diversity in the definitions of the three EI approaches

Theory	Definition	Reference
Ability	Ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions	Salovey and Mayer 1990: 189
	The ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotion knowledge; and the ability to regulate emotions to promote emotional and intellectual growth	Mayer and Salovey 1997: 10
	The ability to process and reason about emotional information	MacCann et al. 2014: 358
Trait	Behavioural dispositions and self-perceived abilities	Mavroveli et al. 2007: 264
	Trait emotional self-efficacy	Petrides, Pita, and Kokkinaki 2007: 273
	Constellation of emotional self-perceptions located at the lower levels of personality hierarchies	Petrides 2010: 137
	All affect-related aspects of personality	Mikolajczak et al. 2007: 339
Competency	When a person demonstrates the competencies that constitute self-awareness, self-management, social awareness, and social skills at appropriate times and ways in sufficient frequency to be effective in the situation	Boyatzis, Goleman, and Rhee 2000: 343
	A cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand others and relate with them, and cope with daily demands	Bar-On 2006: 14
	Emotional competence is a learned capability based on emotional intelligence that results in outstanding performance at work	Goleman 1998: 23

Table 2.5: Typical measures of the three EI approaches

Stream	Measure	Item # and response format	Constructs assessed	Example item	Reliability	Validity
Ability	Mayer, Salovey Caruso Emotional Intelligence Test (MSCEIT; Mayer et al. 2003)	141; mixed	Perceiving emotion; Using emotion to facilitate thought; Understanding emotions; Managing emotions	What mood(s) might be helpful to feel when meeting in-laws for the very first time? Tension (1 = Not useful; 5 = Useful)	Branch reliability scores range from .76 to .91 (Mayer et al. 2003). Test-retest (3 weeks) = .86 (Brackett and Mayer 2003)	Discriminant validity demonstrated with personality; Convergent validity demonstrated with cognitive ability; Predictive validity demonstrated with academic performance, well-being, and prosocial behaviour (Brackett and Salovey 2006)
	STEU/STEM (MacCann and Roberts 2008)	42/44; mixed	Emotion understanding/ Emotion management	There is great weather on the day Jill is going on an outdoor picnic. Jill is most likely to feel? Pride, Joy, Relief, Guilt, or Hope	Internal reliability ranges .32 to .72 (MacCann and Roberts 2008)	Convergent validity demonstrated with cognitive abilities; Predictive validity demonstrated for academic performance, anxiety, stress and depression (MacCann and Roberts 2008)
Trait	Schutte Self-Report Emotional Intelligence Test (SREIT/ Assessing Emotions Scale;	33 items; 5-point likert ranging from 1 = Strongly disagree; 5 =	Unclear factor structure	I know when to speak about my personal problems to others	Internal reliability between .76 and .95 (Schutte, Malouff and Bhullar 2009)	Convergent validity demonstrated for other affect-related individual differences; Predictive validity demonstrated for mental health, employment and academic

	Schutte et al. 1998)	Strongly agree				performance (Schutte, Malouff and Bhullar 2009)
	Trait Emotional Intelligence Questionnaire (TEIQue; Petrides and Furnham 2001)	153 items; 7-point likert ranging 1 = Completely disagree; 7 = Completely agree;	Four factors: well-being, emotionality, sociability and self-control. Fifteen facets.	Expressing my emotions with words is not a problem for me	Internal reliability between .67 to .92 (Petrides 2009)	Convergent validity demonstrated with personality (Petrides 2010); Divergent validity demonstrated with cognitive abilities (Mikolajczak et al. 2007; Predictive validity demonstrated for mental health, well-being, aggression (Andrei et al. 2016)
Competency	Emotional Quotient Inventory (EQ-i; Bar-On 1997)	133 items; 5-point likert ranging 1 = Very seldom or not true of me; 5 = Very often true of me	Five factors: Intrapersonal, Interpersonal, Stress management, Adaptability, and General mood. Fifteen facets.	-	Internal reliability = .76; Test-rest reliability (1 month) = .85; (4 month) = .75) (Bar-On 1997)	Convergent validity demonstrated with personality (Dawda and Hart 2000); Predictive validity demonstrated for performance (mixed; Van Rooy and Viswesvaran 2004)
	Emotional Competence Inventory (ECI; Boyatzis, Goleman, and Rhee 2000)	110 items; 6-point likert ranging 1 = never; 5 = Consistently; 6 = Don't know;	Four clusters: Self-awareness, social awareness, self-management, social skills. Twenty facets.	-	Internal reliability ranges .61 to .95 (Gowing 2001; Sala 2002)	Convergent validity demonstrated with personality (Matthews, Zeidner and Roberts 2004); Predictive validity demonstrated for performance (mixed; Van Rooy and Viswesvaran 2004)

Despite the measurement problems, evidence in favour of an affect-related strand of intelligence is compelling. There is clear evidence that individuals consistently differ in their ability to perceive and understand emotions (Mestre et al. 2016). Further, both the general Ability EI factor and the three sub-factors correlate positively and substantially with measures of cognitive ability (Van Rooy and Viswesvaran 2004; MacCann et al. 2014). The most robust investigation of the standing of Ability EI within intelligence frameworks comes from MacCann et al. (2014) whom tested various unidimensional, oblique, hierarchical and bifactor models using questionnaire data collected from 688 students. Their data best fit the model in which Ability EI, comprised of perception, understanding and management factors, was hierarchically structured under a general intelligence factor alongside broad ability domains such as quantitative reasoning, fluid intelligence, crystalized intelligence, and visual-spatial ability. It was summarised that Ability EI could therefore be best understood as a second-stratum ability within the Cattell-Horn-Carroll (CHC) theory of intelligence (McGrew 2009), with a similar standing to that of these other cognitive abilities, loading onto g at .80 (MacCann et al. 2014: Table 6). Further analyses by MacCann (2010) are consistent in suggesting that EI forms a latent factor distinct from fluid and crystallised intelligence, whilst being strongly related to the latter. Furthermore, there is also emerging data to suggest that the various EI branches have differing developmental trajectories, with emotion perception decreasing in adulthood analogous to other sensory-modality abilities, and understanding/management of emotions continuing to increase across the lifespan akin to other knowledge-like factors (Mestre et al. 2016). In sum, Ability EI represents a related set of cognitive abilities that can be differentiated from, but still correlates with and follows the developmental trajectories of, other intelligence types. As such, Ability EI satisfies the conceptual, correlational, and developmental criteria required to be defined as an intelligence type (Mayer, Caruso and Salovey 1999). On the quality of such evidence, and the clarity in definition and context in individual difference theory (Mestre et al. 2016; Roberts, Zeidner and Matthews 2001), this stream of research is often the preferred approach of academics and researchers (e.g. Daus and Ashkanasy 2003).

Although Ability EI can be considered a sub-factor of general cognitive ability models, that does not mean it is redundant or lacking in utility. Indeed, evidence suggests that Ability EI predicts a number of important outcomes when controlling for general cognitive ability and other individual differences (e.g., Newman, Joseph and MacCann 2010; Van Rooy and Viswesvaran 2004), with the incremental prediction most pronounced when the outcomes examined are emotion-laden (e.g., job performance in roles requiring high emotional labour; Joseph and Newman 2010).

In sum, Ability EI, or individual differences in the ability to recognise, understand, and (knowledge of how to) manage emotions, appear observable and fit within a broader cognitive ability framework (MacCann et al. 2014; Mestre et al. 2016). Despite measurement-based issues with adopting maximum performance-based paradigms, Ability EI represents the original conceptualisation of EI by Mayer and Salovey, and can be clearly differentiated from other approaches to EI by its clearly defined scope surrounding cognitive ability. Ability EI shares numerous features with other elements of intelligence and provides useful information in explaining emotion-laden outcomes (Joseph and Newman 2010; Mayer et al. 2001; Van Rooy and Viswesvaran 2004). The evidence presented here supports a conclusion that Ability EI can be considered a second-stratum factor of general cognitive ability.

2.9.2 EI as personality traits

The second perspective on EI was pioneered by Petrides and colleagues and is commonly termed 'Trait EI'. The definition and nature of constructs captured by this perspective has fundamentally changed within the last decade (see Table 2.4). Trait EI first represented "self-perceived abilities" (Petrides and Furnham 2001: 426) surrounding the self-perceptions of the range of qualities proposed by Mayer and Salovey (1997): the extent to which individuals feel able to perceive, facilitate, understand, and manage emotions. The distinction made between abilities and self-perceptions have been evidenced as meaningful in the broader intelligence literature (e.g. Chamorro-Premuzic and Furnham 2004) and were most clearly evidenced by the development of a range of self-report typical-performance measures including The Assessing Emotions Scale (Schutte et al. 1998), Work Group Emotional Intelligence Profile (Jordan et al. 2002), and Wong and Law Emotional Intelligence Scale (Wong and Law 2002). The definition of Trait EI subsequently evolved to represent the "constellation of emotional self-perceptions located at the lower levels of personality hierarchies" (Petrides 2010: 137). A large body of evidence demonstrates that Trait EI is unrelated to Ability EI (correlations are often near-zero; Petrides, Pérez-González and Furnham 2007; Van Rooy, Viswesvaran and Pluta 2005). However, correlations between Trait EI and personality traits such as neuroticism have been as high as .80 (Dawda and Hart 2000). Thus, Trait EI and Ability EI represent two distinct perspectives on EI, with Ability EI linked to individual differences in intelligence and Trait EI linked to individual differences in personality.

Critique surrounding this approach to EI has often centred around theoretical ambiguity. For example, some have criticised such measures for representing emotional self-efficacy, and thus being highly susceptible to social desirability, rather than accurately capturing self-perceptions (e.g. Brackett et al. 2006; Walter, Cole and Humphrey 2011). Perhaps the most common discussion point however, has

surrounded the role of personality. Petrides and Furnham (2000) claim that self-perceptions relating to the recognition, processing and understanding of emotions, pertains to personality (Petrides and Furnham 2000). Personality refers to the relatively stable traits that influence a person's typical pattern of thinking, feeling, and behaving (Hughes and Batey 2017). Given this, Trait EI should refer exclusively to typical affective tendencies and not self-perceived abilities, which are distinct from personality (Chamorro-Premuzic and Furnham 2004). However, as noted above, Trait EI has shifted over time from a mixed construct (dispositions and self-perceived abilities) to a personality construct and it seems that current measures of Trait EI still contain questions concerning self-perceived abilities (e.g., I would describe myself as a good negotiator, I believe I am full of personal strengths). This is not surprising given that the Trait EI programme did not start out to identify the "comprehensive representation of the affective aspects of personality" (Petrides et al. 2016: 336) that it now claims to capture. Thus, caution is required when interpreting data created by such measures.

The most popular measure of Trait EI, the TEIQue (Petrides 2009), has a general factor of Trait EI which can be broken into four-sub-factors (emotionality, sociability, well-being, and self-control) and a further fifteen facets (see Table 2.6). Early exploratory factor analytic evidence shows that some Trait EI facets can form a factor separate to the Big Five (Petrides and Furnham 2001; Petrides, Pita and Kokkinaki 2007). Furthermore, there is convincing evidence to suggest Trait EI provides important contributions to explanations of affective phenomena, such as mental health, and outcomes such as academic performance (e.g. Martins, Ramalho and Morin 2010), with evidence of modest incremental prediction (beyond short measures of the Big Five, e.g. Andrei et al. 2016) despite being drawn from personality models (e.g. McCrae and John 1992). Together such findings have often been interpreted that either a) Trait EI represents the discovery of a major new personality dimension, or b) Trait EI represents a compound construct of existing affective traits (Pérez-González and Sanchez-Ruiz 2014; Petrides, Pita and Kokkinaki 2007). Such conclusions appear contradictory and suggest that the theoretical grounding to, and content of, trait EI is typically not well understood.

Substantial overlap between existing personality measures and Trait EI measures (e.g., 57% of Trait EI variance is accounted for by the Big Five factors) suggests that Trait EI is not that new or that major (Pérez-González and Sanchez-Ruiz 2014). Indeed, when examining Petrides, Pita and Kokkinaki's (2007: Table 4) joint factor analysis of the TEIQue and a measure of the Big Five, there is substantial overlap. Five Trait EI facets had no substantial loading on the Trait EI factor but did load substantially on other Big Five factors. Six Trait EI facets either had their primary loading on a Big Five factor or had substantial loadings on both Trait EI and one of the Big Five. Four Trait EI facets loaded primarily onto

the Trait EI factor and had no meaningful cross-loadings. So, of the fifteen TEIQue facets, five are best considered markers of the current Big Five, and a further six can quite easily be incorporated within the Big Five model. What this analysis reveals is that the clear majority of Trait EI facets are either redundant or best considered not as markers of 'Trait EI' but as markers of the Big Five. In other words, Trait EI should be considered a compound construct, representing a collection of affect-related personality traits (Pérez-González and Sanchez-Ruiz 2014; Petrides, Pita and Kokkinaki 2007; van der Zee and Wabeke 2004). Indeed, based on a qualitative review of item content, further overlap between Trait EI and the Big Five is illustrated within Table 2.6.

Table 2.6 TEIQue facets and similarities to the Big Five

TEIQue Sub-factor and Facets	Similar constructs found within the NEO PI-R
Emotionality	
Emotion Perception	Feelings (O)
Trait Empathy	Tender-mindedness (A)
Emotion Expression	Hostility (N), Anxiety (N)
Relationships	-
Self-Control	
Emotion Regulation	-
Stress Management	Vulnerability (N), Anxiety (N)
Impulsiveness	Impulsiveness (N)
Adaptability	-
Self-Motivation	Achievement Striving (C)
Sociability	
Assertiveness	Assertiveness (E)
Emotion Management	-
Social Awareness	-
Self-Esteem	Competence (C)
Well-being	
Trait Happiness	Positive emotions (E), Depression (N)
Trait Optimism	-

Despite the substantial overlap between Trait EI models and the Big Five, Petrides, Pita and Kokkinaki's (2007) analyses suggest that four facets (social awareness, emotion management, emotion expression, and trait empathy) are unique from the Big Five. In addition, the qualitative review

suggests that some facets do not have direct equivalents in extant models. Thus, it is possible that Trait EI research has identified meaningful personality traits that can inform and expand existing personality models. This is especially useful given that current omnibus models of personality (e.g., the Big Five) are not comprehensive in their coverage of the personality sphere (Hughes and Batey 2017; Paunonen and Jackson 2000), and this is particularly true for positive affective tendencies (e.g., Pytlik Zillig, Hemenover and Dienstbier 2002). Indeed, a number of the 'unique' Trait EI facets, representing positive affect or low neuroticism, are not currently captured by the Big Five (e.g., emotion regulation, adaptability, optimism). This might explain why the TEIQue factors of well-being and self-control, which subsume these facets, often provide incremental prediction when examined alongside existing personality measures (Andrei et al. 2016).

So, Trait EI measures capture a number of affect-related or affect-laden personality traits that span the whole spectrum of personality (i.e., facets from each of the Big Five and seemingly beyond). Having measures that provide a "comprehensive representation of the affective aspects of personality" (Petrides et al. 2016: 336) is undoubtedly useful for both research and practice (i.e., identifying which facets to measure during employee selection, Hughes and Batey 2017). However, whether existing Trait EI measures achieve this is debatable. The research that is now needed to achieve comprehensive coverage of affect-related personality facets involves two major steps. First, research must identify which facets of Trait EI models and measures are unique and which are redundant. Second, existing personality measures (i.e., Big Five measures) need to be examined in order to identify other affect-related facets (e.g., anxiety, warmth) that are currently absent from Trait EI models.

In sum, whilst the nature of Trait EI research has not been as clear-cut as Ability EI research, and definitions have changed significantly, several important conclusions can be drawn. Namely that Trait EI is distinct from Ability EI and is, in essence, a label for a collection of affect-related personality traits. In order to make this overlap and theoretical perspective explicit, from this point, this perspective is referred to as 'Affect-related Personality', without using the term 'intelligence'.

2.9.3 EI as Emotion Regulation

EI models have often included an 'other' category. For example, according to the Ashkanasy and Daus (2005) model, Stream 3 of EI research was defined as that using "expanded models of emotional intelligence that encompass components not included in Salovey and Mayer's definition, and are represented by the EQ-i and the ECI" (Ashkanasy and Daus 2005: 443). This mixed approach was developed as a largely atheoretical perspective to describe affective constructs and concepts that

could not be described as cognitive abilities and that lie beyond the boundaries of emotion and intelligence (e.g. adaptability, and teamwork and collaboration; Boyatzis, Goleman and Rhee 2000; Mayer, Salovey and Caruso 2008; Roberts et al. 2010; Zeidner, Roberts and Matthews 2008). Here, individual differences including skills, behaviours, competencies, and motivation, are combined (Bar-On 1997; Boyatzis, Goleman and Rhee 2000; Boyatzis 2009).

A variety of commercialised measures have been developed that incorporate a diverse range of content domain and thus would lie outside of Ability EI and Affect-related Personality. The most well-known is the EQ-i (Bar-On 2006), which was originally focussed upon social and emotional competencies but was re-branded as EI, inspired by the works by Goleman. As the first EI measure to be commercialised, the EQ-I was designed to represent an individual's 'Emotional Quotient', analogous to IQ. Fifteen subscales represent five broad themes: Interpersonal competence, intrapersonal competence, stress management, adaptability, and general mood (Bar-On 2006).

This third perspective on EI has also been entitled EI competencies or Emotional and Social Competencies (c.f. Boyatzis 2009; Goleman 1996). EI competencies are "observed when a person demonstrates self-awareness, self-management, social awareness and social skills at appropriate times and ways in sufficient frequency to be effective in the situation" (Boyatzis, Goleman and Rhee 2000: 344). This definition is so broad that almost any intrapersonal or interpersonal behaviour could be classified under this definition, and many have been. Indeed, EI competency models include constructs synonymous with personality (e.g., conscientiousness, optimism; Joseph et al. 2015), constructs concerning the regulation of one's own and others' emotions (emotional self-control, empathy, conflict management) and a broad array of performance outcomes (e.g., teamwork, service orientation, innovativeness, social responsibility, leadership; Bar-On 1997; Boyatzis, Goleman and Rhee 2000; Boyatzis 2009). The most popular competency measure, the Emotional and Social Competence Inventory (Boyatzis, Goleman and Rhee 2000), includes facets on self-awareness, self-management, social awareness, and relationship management. The fifteen subscales, ranging from adaptability, empathy, and inspirational leadership, demonstrate the diversity of constructs captured within this approach to EI research.

By integrating diverse content, a variety of models and measurement tools have been developed with no unifying framework or theory to contextualise subsequent understanding or findings. Often research is categorised into this 'other' approach when it fails to strictly adhere to either of the aforementioned fields. Accordingly, this approach to research comes in for frequent and justified criticism for lack of theoretical clarity (Ashkanasy and Daus 2005; Daus and Ashkanasy 2003; Mayer, Salovey and Caruso 2000; Locke 2005; Zeidner, Roberts and Matthews 2008). Indeed, when a

construct is so broad that it can reasonably accommodate almost everything it is essentially protean and thus meaningless (Hughes 2018). 'Valid' constructs have clear definitions, clearly defined content, and clear boundaries (Hughes 2018). Competency EI models have none of these features (Locke 2005; Zeidner, Roberts and Matthews 2008). In addition, competency measures share larger correlations with measures of other constructs than each other (Bracket and Mayer 2003), have low internal consistency and test-retest reliability (Zeidner, Roberts and Matthews 2008), incoherent and inconsistent factor structures (Livingstone and Day 2005), and even when measures demonstrate predictive validity, it is considered more misleading than valuable (Joseph and Newman 2010, Joseph, et al. 2015).

One of the major critiques is that this ambiguous EI approach simply repackages a mixture of well-known psychological traits, and thus has little predictive value when considered alongside personality, intelligence, and self-perceptions (Joseph et al. 2015). Largely, this criticism is justified. Early critical explorations of this EI perspective identified that many of the components appeared to refer to behavioural and cognitive preferences akin to personality measures (Ciarrochi, Chan and Caputi 2000; Davies, Stankov and Roberts 1998). Analyses of the subsequent measures adopted suggested EI represents a complex blend of personality traits, general self-efficacy, self-rated performance, cognitive abilities surrounding emotional information processing, emotional stability, and cognitive ability. This domain sampling of well-known psychological domains (Cronbach and Meehl 1955; Ghiselli, Campbell and Zedeck 1981; Nunnally 1967), representing a 'grab-bag' of important constructs, has led to many authors concluding EI to possess strong incremental predictive ability for a range of outcomes (Joseph et al. 2015). However, these bold claims seem misleading. The aforementioned range of variables are not systematically and consistently controlled for within the extant literature, and thus it is extremely unclear what of mixed EI is truly unique, and what the unique contributions of each component are. In a rare exception, Joseph et al. (2015) used meta-analytic data to conclude the relationship between unique mixed EI content and job performance to be near zero (β = -.02, n.s.). Mixed EI may feature some unique content, falling outside other models of EI, that appears on face-value to be of interest (e.g. social skills, conflict-management, motivation, building bonds, team-working). However, by representing mixed content with no structure or theory, inconsistencies and contradictions surrounding the nature, scope, and value of EI constructs seem likely to be perpetuated.

Given the lack of supporting evidence, the current thesis is consistent with the previously espoused views in suggesting that EI competencies or mixed EI represents a proportion of the EI literature that

could be abandoned (e.g., Ashkanasy and Daus 2005; Bracket and Mayer 2003; Daus and Ashkansay 2003; Locke 2005; Mayer, Salovey and Caruso 2000; Zeidner, Matthews and Roberts, 2004; Zeidner, Roberts and Matthews 2008) and indeed that the continued use of EI competency models is likely to do "much more harm than good" (Daus and Ashkanasy 2003: 70) when seeking to build coherent theoretical accounts of affective processes and related individual differences.

However, whilst EI competency models are theoretically weak and empirically unstable, the general aim of assessing emotional competence might be of value. Such work is most likely to benefit from focusing not on competencies per se but on Emotion Regulation, which represents "the use of strategic cognitions or behaviours to improve or worsen [one's] own feelings and those of other people, in the pursuit of hedonic, relational and instrumental goals" (Niven et al. 2011: 71). In essence, emotional competence and Emotion Regulation are addressing the same phenomenon, namely, using emotions to facilitate goal attainment. In addition, it is clear that much of the non-personality content of EI competency models (e.g., empathy, conflict management, emotional self-control) can be understood through an Emotion Regulation framework. Indeed, measures of EI competencies and coping styles have been jointly factor analysed due to overlapping content domain (Austin, Saklofske and Mastoras 2010). In Table 2.7, clear areas of overlap between Emotion Regulation models and EI competencies are noted.

Emotion Regulation is considered the behavioural manifestation of various distal individual differences (Peña-Sarrionandia, Mikolajczak and Gross 2015), playing "a core role in everyday social life" (Niven et al. 2012: 247) with utility demonstrated across social, health, educational, and occupational outcomes (Gross 2002; Peña-Sarrionandia, Mikolajczak and Gross 2015). For example, two Emotion Regulation strategies (savouring/dampening) partially mediate the relationship between Trait EI and subjective happiness/life satisfaction (Szczygieł and Mikolajczak 2017). Conceived as the *process* or mechanism by which constructs like EI impact outcomes (Hughes and Evans 2016; Joseph and Newman 2010; Mestre et al. 2016), Emotion Regulation concerns both the up-regulation of (typically positive) emotions and/or the down-regulation of (typically negative) emotions (Parrott 1993). Furthermore, Emotion Regulation can target emotions of the self (intrinsic) and/or others (extrinsic) (Gross and Thompson 2007; Niven et al. 2011). For example, you can use affiliative humour to maintain a positive mood (humour as intrinsic up-regulation of positive emotion) or go drinking with a friend to help them get over a break-up (substance use as extrinsic down-regulation of negative emotion).

Table 2.7 Emotion Regulation class, Emotion Regulation strategies, and likely outcomes currently considered to be EI competencies

Emotion Regulation Class (Gross 2015)	Example Emotion Regulation Strategies (Peña-Sarrionandia, Mikolajczak and Gross 2015)	Example EI Competency (Boyatzis 2009)
Situation Selection	Avoidant-coping Forecast Accuracy	Emotional self-awareness Empathy
Situation Modification	Conflict Resolution Social support search	Conflict management Influence
Attentional Deployment	Rumination Distraction	
Cognitive Change	Positive Reappraisal Humour	Optimism/Positive outlook
Response Modulation	Venting/Suppression Substance Use	Emotional self-control

The Emotion Regulation of Others and Self questionnaire (Niven et al. 2011) is the only extant measure to adopt these two key distinctions, explicitly exploring the four main types of emotion regulation (Intrinsic affect-improving; Intrinsic affect-worsening; Extrinsic affect-improving; Extrinsic affect-worsening). Not always differentiating between choice, use and efficacy (Bridges, Denham and Ganiban 2004), most measures of Emotion Regulation are self-report questionnaires exploring regularity in use of a range of specific strategies, predominantly focussing upon the down-regulation of negative emotions (Nelis et al. 2011). Such measures include the Cognitive Emotion Regulation Questionnaire (Garnefski, Krassij and Spinhoven 2001), Interpersonal Emotion Regulation Questionnaire (Hofmann, Carpenter and Curtiss 2016), COPE Inventory (Carver, Scheier and Weintraub 1989), FEEL-KJ (Grob and Smolenski 2005) and Regulation of Emotion Systems Survey (De France and Hollenstein 2017). As longitudinal research to explore Emotion Regulation efficacy with such tools are limited, a number of works have adopted experimental methodologies (e.g. Ochsner et al. 2004) and/or self-reports of emotional state, physiological measures (e.g., heart rate variability; Appelhans and Luecken 2006), measures of expressive behaviour (including observer-ratings), and implicit measures of emotion, to capture Emotion Regulation efficacy (Webb, Miles and Sheeran 2012).

At this point, it is worth noting how Emotion Regulation differs from similar concepts. Firstly, many consider the management branch of Ability EI to refer to regulation (Joseph et al. 2010; 2015; e.g. Wranik, Feldman-Barrett and Salovey 2007). The emotion management (or regulation) branch of Ability EI refers to crystallised knowledge regarding these processes and behaviours. Emotion Regulation as noted above refers to a broad range of processes and behaviours regarding the up-regulation and down-regulation of emotions. In other words, this is the difference between knowing that consuming alcohol will not improve one's mood, and drinking it regardless. The two are interrelated, but they are not synonymous, one is knowledge and the other is action (Mikolajczak 2009). Accordingly, empirical research has not found strong relationships between the emotion management branch of the MSCEIT and self-report Emotion Regulation (e.g. Beblo et al. 2010).

A further area of clarification is between Emotion Regulation and Coping as both have been associated with significant conceptual overlap and thus confusion (Gross 1999; Koole 2009). Coping refers to all actions attempted to manage a problematic person-environment relationship (Folkman and Lazarus 1985; John and Gross 2007). This can refer to a long/undefined time period and phenomena outside of a specific context e.g. 'coping' with the death of a spouse (Gross 1999), and can include non-emotional actions and/or focus upon non-emotional goals (Scheier, Weinbtraub and Carver 1986). Comparatively, Emotion Regulation represents the identification, selection and implementation of strategies underpinning 'every-day' modulation of emotion. This can include up-regulation of positive emotions, not just management of a stress-induced experience (John and Gross 2007). Furthermore, Emotion Regulation can refer to the strategies adopted to change others' emotional trajectories, not just one's own. The current thesis focusses upon affect-related individual differences and therefore concerns itself with Emotion Regulation specifically. However, there is clearly shared content domain covered by these fields (Koole 2009) and whilst Coping can be differentiated from Emotion Regulation, research from the Coping literature is drawn upon within the current thesis where affective in nature, to present the most comprehensive state of understanding possible.

Returning to the idea that EI competencies and Emotion Regulation are concerned with different approaches to the same phenomena, with clear overlap (see Table 2.7), it makes sense to consolidate the two fields to avoid construct proliferation (i.e., the proposition and marketing of multiple ostensibly unique but actually largely overlapping constructs). This consolidation is likely to lead to the abandonment of EI competencies in favour of Emotion Regulation for three main reasons:

First, Emotion Regulation has well-developed theories such as the Process Model of Emotion Regulation (Gross 1998; 2015). According to this model, there are five classes of Emotion Regulation: (i) choosing situations to engage with or avoid (situation selection), (ii) modifying that situation (situation modification), (iii) directing attention within the situation (attentional deployment), (iv) attributing a meaning to the situation (cognitive change), or (v) altering the response to the situation (response modulation). At all five stages, different Emotion Regulation strategies can be adopted and if implemented successfully can facilitate goal-attainment (Gross 2015). Some example strategies are displayed in Table 2.7. The field of Emotion Regulation has recently been extended to consider a significant gap noted by the model's author, namely, how individuals come to choose which Emotion Regulation strategy to adopt. Specifically, Gross proposed three key antecedents to the enacting of Emotion Regulation, namely, identification, selection, and implementation (Gross 2015). As discussed later, Ability EI and Affect-related Personality traits appear to have a prominent role in explaining individual differences in identification (i.e., how capable/prepared people are to pay attention to emotions), selection (i.e., the ability to identify an appropriate Emotion Regulation class), and implementation (i.e., the specific behavioural nuances with which people enact their regulation).

Second, whilst EI competency models refer to broad outcomes (e.g., optimism or influence), Emotion Regulation models can focus on the specific strategies utilised (see Table 2.7). For example, optimism can be obtained and maintained through positive reappraisal and the use of self-enhancing humour (Scheier and Carver 1987), whilst influence can be gained in a number of ways, including appropriate displays of anger (e.g., Côté and Hideg 2011; Sy, Côté and Saavedra 2005). This focus on specific strategies provides a greater insight into the processes behind affective phenomena (Mestre et al. 2016) and thus can lead to more specific theories and useful practical guidance (i.e., training programmes).

Third, Emotion Regulation measures are superior to EI competency measures in terms of theoretical coherence and psychometric properties (c.f., Bridges, Denham and Ganiban 2004; MacCann et al. 2003). For example, one of the most widely used measures, the Emotion Regulation Questionnaire (ERQ; Gross and John 2003) differentiates between re-appraisal and suppression strategies guided by theoretical models (Gross 1998; Gross and John 2003). In addition, the ERQ scales demonstrate adequate reliability, a stable factor structure, and provide prediction of numerous socially important outcomes (e.g., depression, anxiety, stress, interpersonal functioning, well-being, social adjustment, and decision-making; see Spaapen et al. 2014).

In sum, both emotional competence and Emotion Regulation are addressing the same phenomenon: using emotions to facilitate goal attainment. Compared with EI competency or mixed models, Emotion Regulation models are built on stronger theory, contain more specific construct identification, and inspire better measures. Thus, researchers interested in emotional competence or skill should avoid mixed or competency models of EI and instead focus on models of Emotion Regulation. The integration of EI research with Emotion Regulation echoes a call from Mestre et al. (2016: 327) who recently stated that "studying EI through the theoretical framework of Emotion Regulation may produce greater understanding of the mechanisms by which EI capacities influence valued outcomes". Consistent with Mestre et al. (2016), there appears to be great value in the integration of EI and Emotion Regulation (see also Hughes and Evans 2016). Indeed, in the next chapter, these claims are expanded by building an integrative model that combines Ability EI, Affect-related Personality traits, and Emotion Regulation.

2.10 Chapter summary

The current chapter has established what is currently known about the scope and content of EI. Having discussed the potential value of EI as an affective individual difference construct, empirical evidence exploring the understanding of EI was presented. Academics teaching and researching psychology within Higher Education, psychology students, and HR professional views were explored, and they presented a broad range of inconsistencies and problematic representations of EI. It was concluded that EI is used flexibly to represent a wide range of emotional and social qualities, and as such is lacking a clear framework or theoretical background from which it could be consistently understood. Such diversity and inconsistencies in perceptions surrounding EI seem to echo those found within the literature, asserting theoretical clarity as the key priority to improve understanding of EI, similar and related individual differences, and the fields in which they are applied. Towards a more consistent standpoint, the current chapter subsequently reviewed the extant literature to present three theoretically-informed perspectives on EI, covering definitions aligned to well-established models of cognitive ability, personality, and emotion regulation. The following chapter integrates the three approaches to EI towards a practical model of affect-related individual differences.

Chapter 3: An Integrated Model of Affect-related Individual Differences

Numerous individual differences, models, and measures have been associated with the EI label. This chapter discusses one of the most notable absences in the study of EI-related individual differences, namely, the lack of a meaningful theoretical framework. Having differentiated between the perspectives (ability, personality, emotion regulation), existing theory and research is drawn upon to build an Integrated Model of Affect-related Individual Differences to explain how individual differences in these three EI-related constructs drive important affective outcomes. Viewing EI-related constructs as interrelated extensions of well-established individual difference frameworks clarifies some pervasive questions regarding EI-related characteristics and provides a theoretical platform ripe for exploration.

3.1 Introduction

The term 'EI' is used to refer to a very diverse set of constructs. As detailed in Section 2.7, a plethora of conceptualisations and models of EI have been proposed to help structure understanding (e.g. Ashkanasy and Daus 2005). Data presented in Section 2.4.1 of the current thesis highlighted a similarly broad range of constructs perceived to be relevant to EI by psychology students, academics, and HR professionals. However, there has been very little theoretically-informed work to differentiate and integrate the various conceptualisations and measures of EI. This has led to issues surrounding the jingle-jangle fallacy whereby it is unclear what can, and cannot, be referred to as EI (Zeidner, Matthews and Roberts 2009).

Following a theory-informed literature review (section 2.9), the current thesis presents three distinct theoretical perspectives that describe a broad range of constructs subsumed under the EI label. First, Ability EI represents a second-stratum factor of intelligence, comprised of the cognitive ability to process emotional information for emotion recognition, understanding and management. Second, Affect-related Personality represents a collection of affective personality traits, many of which are found within existing and popular personality models. Third, Emotion Regulation is presented as a more valid alternative to the study of EI competencies, and represents an individual's identification, selection and implementation of cognitive and behavioural strategies to influence their own or others' emotions, towards hedonic, relational and/or instrumental goals.

3.2 An Integrated Model of Affect-related Individual Differences

Using the aforementioned theoretically-informed classification, the major goal of this chapter is to introduce an Integrated Model of Affect-related Individual Differences. This model aims to provide an initial mechanistic representation that explains how the different EI-related constructs are likely to interrelate and coalesce to influence affective outcomes. By differentiating and integrating EI-related individual differences, the current chapter aims to provide scholars and practitioners with a clear and useful framework that will provide a platform for theoretical refinement, measure development, and future research.

Previous influential models or classifications of EI-related constructs (e.g., trait vs. ability; stream 1, 2, and 3; ability vs. mixed) have typically been based on sub-optimal definitions or measurement tools (e.g., Ashkanasy and Daus 2005; Joseph et al. 2015; Zeidner, Roberts and Matthews 2008). For example, Caruso (2003) proposed three approaches each based on a certain measurement approach, namely, ability, self-report, and other-report measures. Whilst such groupings have utility in distinguishing among measures, they are, by nature, atheoretical and fail to provide a solid platform for theoretical development. Equally, previous reviews have tended to adopt an Ability EI vs. others (mixed models, Trait EI) approach and as a result, researchers have tended to treat the different EI-related constructs as competitors. Indeed, there have been numerous papers pitting the different EI models against each other with a view to identifying which EI is the 'correct' or 'best' EI (e.g., Mayer, Salovey and Caruso 2000; Zeidner, Roberts and Matthews 2008).

In contrast, the current thesis has used the broader individual differences literature as the basis for the classification of EI-related constructs and was not bound by existing measurement tools or deficient definitions (e.g., mixed models). As a result, the classification presented addresses calls to provide clear boundaries, aligned with traditional individual differences theory, for each of the major EI-related constructs (Zeidner, Matthews and Roberts 2004). Importantly, this means that these different EI-related constructs are no longer in direct competition but can instead be viewed as complementary. Rather than conducting predictive validity competitions, pitting different EI measures against each other and other individual differences, the greatest value will be from building and testing meaningful theoretical models that explain how individual differences in Ability EI, Affect-related Personality, and Emotion Regulation interrelate to influence affective behaviour (e.g., Hughes and Evans 2016; Mestre et al. 2016; Seal and Andrews-Brown 2010). Accordingly, a model that integrates the three perspectives will now be proposed.

The key principles of the Integrated Model of Affect-related Individual Differences are as follows. Ability EI (a sub-factor of cognitive ability) and Affect-related Personality traits (a collection of Affect-related Personality traits) drive the identification, selection, and successful implementation of various Emotion Regulation strategies. In turn, Emotion Regulation determines important outcomes. A visual representation of the Integrated Model of Affect-related Individual Differences is presented in Figure 3.1. In essence, this is an integrated mediation model in which Emotion Regulation mediates the effects of Ability EI and Affect-related Personality traits upon outcomes (Côté et al. 2011; Joseph and Newman 2010; Hughes and Evans 2016; Mestre et al. 2016; Szczygieł and Mikolajczak 2017). The model is inspired by and builds upon previous integrations of personality, intelligence, and skills that have proven successful in explaining behaviour in other domains (e.g., Chamorro-Premuzic and Furnham 2004; McCleland 1973; Schmidt, Schaffer and Oh 2008; Zeidner 1995). Perhaps the key strength of the model is that it provides a testable framework that has the potential to explain how individual differences in Ability EI and Affect-related Personality manifest in diverse behaviour and differential outcomes. The model goes beyond simple descriptive correlations and direct effects that have dominated previous research and instead seeks to explain how affective outcomes arise through the dynamic interactions between affect-related individual differences and processes. As a result, the Integrated Model of Affect-related Individual Differences focuses not simply on *what* is predicted by EI-related constructs but *how* these constructs influence outcomes. A greater understanding of how EI-related constructs interact and the nature of the mechanisms by which they influence outcomes stands to inform future theory, measurement, and intervention design (Davis 2013).

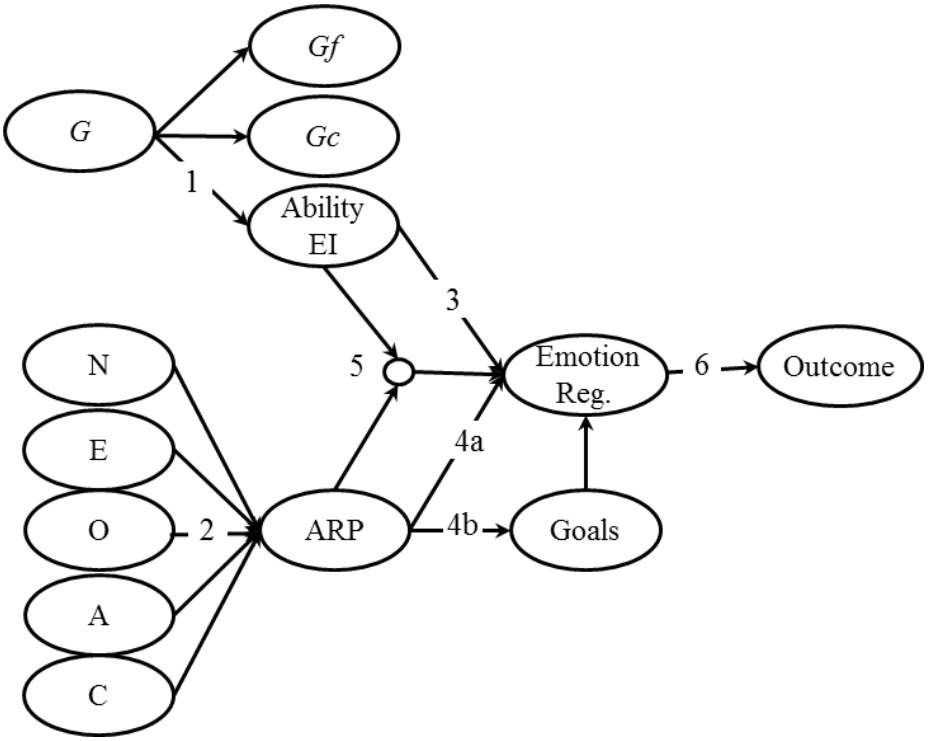

Figure 3.1 Integrated Model of Affect-related Individual Differences

A few previous papers have proposed and/or partially tested models that integrate some EI-related constructs (e.g., Joseph and Newman 2010; Mestre et al. 2016; Peña-Sarrionandia, Mikolajczak and Gross 2015; Seal and Andrews-Brown 2010). However, none of these models have included all unique elements of the EI literature, all have been bound by existing measurement tools and poorly defined constructs (e.g., mixed models), and most have not considered EI-related constructs within the broader individual differences literature. For example, Seal and Andrews-Brown (2010) posit mediated and moderated relationships between three measures, which they label emotional ability (Salovey and Mayer 1990), emotional quotient (Bar-On 1997) and emotional competence (Goleman 1996). The latter two are considered mixed models, overlap substantially, and as discussed above have been heavily criticised from theoretical and empirical standpoints. This model also fails to provide theoretically meaningful links to the broader literature or draw clear boundaries separating these constructs. As a result, its utility for theory building is limited. In contrast, Mestre et al. (2016) present compelling evidence supporting the positioning of Ability EI as a sub-factor of general cognitive ability. They go on to argue that Emotion Regulation could be the process by which Ability EI influences outcomes. This link was supported by a previous meta-analysis demonstrating many statistical associations between Ability EI scores and Emotion Regulation (Peña-Sarrionandia, Mikolajczak and Gross 2015). The Integrated Model of Affect-related Individual Differences proposed here builds upon both papers positing Emotion Regulation as the mechanism through which EI-related constructs influence outcomes. However, it extends this discussion beyond Ability EI to include Affect-related Personality traits. Further, as discussed in more detail below, the model also posits that individual differences in Emotion Regulation are most likely driven by an interaction between both Ability EI and Affect-related Personality traits (Hughes and Evans 2016).

Overall, the Integrated Model of Affect-related Individual Differences makes several key contributions to the literature. First, by tying each EI-related construct to existing models of individual differences it provides a clear, theoretically coherent, and parsimonious description of the three key perspectives. Second, the model posits EI-related constructs not as competitors but as complementary constructs that are meaningfully entwined and which coalesce to produce emotion-relevant behaviour. Third, through this integration, the model provides a framework that can explain how individual differences in Ability EI and Affect-related Personality traits influence patterns of Emotion Regulation and subsequent socially-important outcomes. In the following sections, the extant empirical evidence in support of the key pathways hypothesised within the Integrated Model of Affect-related Individual Differences are discussed further. EI related research is predominantly cross-sectional and correlational in design, and typically does not model data in a manner that is appropriate for

determining causal relationships (Antonakis et al. 2010; 2014). Thus, where available, studies adopting an experimental design, which are better suited to examining causality, are specifically noted (Antonakis et al. 2010; 2014).

3.2.1 Pathway 1: *G* → Ability EI

As discussed in Section 2.9.1, Ability EI satisfies a number of important criteria to be considered a cognitive ability (MacCann et al. 2014; Mestre et al. 2016; Van Rooy and Viswesvaran 2004). More specifically, current evidence suggests that Ability EI is best conceived of as a second-order factor of cognitive ability that is hierarchically structured, consisting of a general factor and three sub-factors, namely, the ability to perceive, understand, and manage emotions (Fan et al. 2010; MacCann et al. 2014). Essentially, Ability EI reflects the cognitive capacity to process emotion-laden information (Mayer, Caruso and Salovey 2016).

3.2.2 Pathway 2: FFM → Affect-related Personality traits

As discussed in Section 2.9.2, Affect-related Personality represents a compound construct containing affect-related personality traits (Petrides, Pita and Kokkinaki 2007; Petrides 2010). Given the pervasiveness of the Five Factor Model (FFM) within personality research, and the significant overlap between Affect-related Personality and FFM facets (see Table 2.6), it makes sense to seat the Affect-related Personality traits perspective within this model (van der Zee and Wabeke 2004). Historically, most Affect-related Personality research has focussed on global factors (e.g., total Trait EI scores). However, this is sub-optimal and potentially misleading, for two main reasons. First, compared to facets, broad factors lead to distorted estimates of construct relationships (i.e., reduced predictive validity, Hughes and Batey 2017). This is especially true when facet content is diverse (Hughes and Batey 2017), like it is with Affect-related Personality traits, which span all of the Big Five factors. Second, factors created from a selective subset of traits (e.g., TEIQue) might well be misleading due to data pre-structuring. Briefly, factor solutions are only as strong as the variables that are entered for factoring, and factors identified can only be considered to 'exist' or be 'accurate' if they are derived from the entire domain of possible variables (i.e., all affect-related personality facets/items). Given that this was not the case for measures such as the TEIQue (which was developed based on a competency EI model), it is perhaps questionable what the global or sub-factor scores really represent. Indeed, a number of TEIQue facets do not load on the general factor. Thus, targeted, theory driven, facet-level analyses are the way forward (Hughes and Batey 2017). That is, researchers should measure the Affect-related Personality traits that are relevant to their study. Although for slightly different reasons, this recommendation echoes recent calls from the pioneers of the personality based approach to EI (Petrides et al. 2016).

3.2.3 Pathway 3: Ability EI → Emotion Regulation

As noted above, Emotion Regulation refers to the strategies used to adapt emotions (e.g., suppress or exacerbate) experienced by the self and others in order to facilitate goal-attainment (Gross 2015; Niven, Totterdell and Holman 2009; Niven et al. 2011). If you want to achieve the goal of increasing your positive emotions, you might remind yourself of a positive memory. If you want to reduce someone else's anxiety before a test, you might reassure them. Emotion Regulation consists of three main stages (Gross 2015). First, a person must select if/which emotions need to be regulated in any given situation (identification). Next, the person must choose which broad regulation strategies (i.e., which of the Emotion Regulation classes, see Table 2.7), should be utilised (selection). Finally, in the implementation phase, the person must enact the regulation by translating the broad Emotion Regulation strategy (e.g., cognitive change or situation modification) into specific cognitive or behavioural strategies (e.g., positive reappraisal or conflict resolution). These three stages were recently espoused and understanding these phases of Emotion Regulation are likely to address the current lack of information accounting for consistent patterns of individual differences in the frequency and style of Emotion Regulation (Gross 2015).

The recency with which the identification, selection, and implementation phases were espoused means that there is no specific theory, model, or empirical evidence that breaks down the relationship between Ability EI and Emotion Regulation. However, there is mounting evidence and increasing theoretical rationale to support a reliable link between the two (e.g., Hughes and Evans 2016; Joseph and Newman 2010; Mestre et al. 2016; Peña-Sarrionandia, Mikolajczak and Gross 2015). For example, a recent meta-analysis found a number of strong and reliable relationships between Ability EI and Emotion Regulation strategies spanning the five major Emotion Regulation classes (Peña-Sarrionandia, Mikolajczak and Gross 2015). As an indication of the degree of the relationship, Ability EI reliably predicted the use of 19 of the 22 Emotion Regulation strategies investigated (i.e., 95% confidence intervals not crossing 0). Importantly, the strength and direction of the relationships was not uniform, that is, those high in Ability EI do not simply regulate more and/or use a greater number of strategies. The pattern of relationships suggests that individuals high in Ability EI systematically adopt more of the strategies typically seen as adaptive (e.g. social support seeking), and fewer of those typically seen as maladaptive (e.g. rumination; Peña-Sarrionandia, Mikolajczak and Gross 2015). Furthermore, individuals high in Ability EI appear to regulate emotions earlier, using a wider range of strategies (Peña-Sarrionandia, Mikolajczak and Gross 2015). Previous findings suggest that antecedent-based Emotion Regulation strategies lead to more effective regulation than response-focused strategies (Wranik, Feldman-Barrett and Salovey 2007). These theoretical and empirical arguments therefore suggest that Ability EI (the cognitive capacity to process emotion-laden information) is likely to be one

of the key determinants of the characteristic patterns of Emotion Regulation displayed by individuals (Mestre et al. 2016).

Experimental research in the field is mostly convergent, with Ability EI linked to effective mood maintenance and repair following mood induction through film clips (positive and negative respectively; Ciarrochi, Chan and Caputi 2000). Similarly, Ability EI has been associated with lower worry and avoidance coping during stressful tasks (but not a more positive task-induced stress response; Matthews et al. 2006). Furthermore, Schneider, Lyons and Khazon (2013) conducted analyses at facet level to report that for men, greater emotion recognition was associated with lower negative affect during pseudo-experimental stressors, greater emotion understanding was linked to more positive affect across the different stressors, and higher emotion management was reported with greater challenge appraisals, all relative to their lower counterparts. Lack of such relationships for female participants was purported to be due to the choice of stressors (mental arithmetic and speech tasks). Furthermore, indicating relevant attentional processes, Davis (2018) adopted eye-tracking equipment during an experimental protocol and found a general orienting preference whereby emotion management was associated with avoidance of negative emotion (anger). High Ability EI was not always considered positive however, with some relationships to higher cortisol reactivity and thus slower recovery from stress (Bechtoldt and Schneider 2016). In sum, whilst experimental studies are rare, those available are broadly consistent with survey based studies and support the notion that Ability EI may be one antecedent of Emotion Regulation.

The relationship between Ability EI and Emotion Regulation has not yet been fully untangled and is likely to be complex due to the multifaceted nature of EI, the multitude of relevant and interrelated factors, such as attention as highlighted by the above review of experimental literature, and lack of coherent integrative strategy or theory (Peña-Sarrionandia, Mikolajczak and Gross 2015). A key driver in this process is emotion knowledge which facilitates a "richer understanding of the emotional experience, which should in turn influence which regulation strategies are considered appropriate in a particular situation" (Wranik, Feldman-Barrett and Salovey 2007: 398). Indeed, it would be surprising if an individual's knowledge, and thus abilities pertaining to the perception, understanding, and management of emotions, were not related to Emotion Regulation. Although highly speculative here, it might be expected that meaningful relationships might emerge between the perception factor of Ability EI and the identification stage of Emotion Regulation, between understanding and selection, and between management and implementation (see Figure 3.2, further discussed in Section 3.2.4).

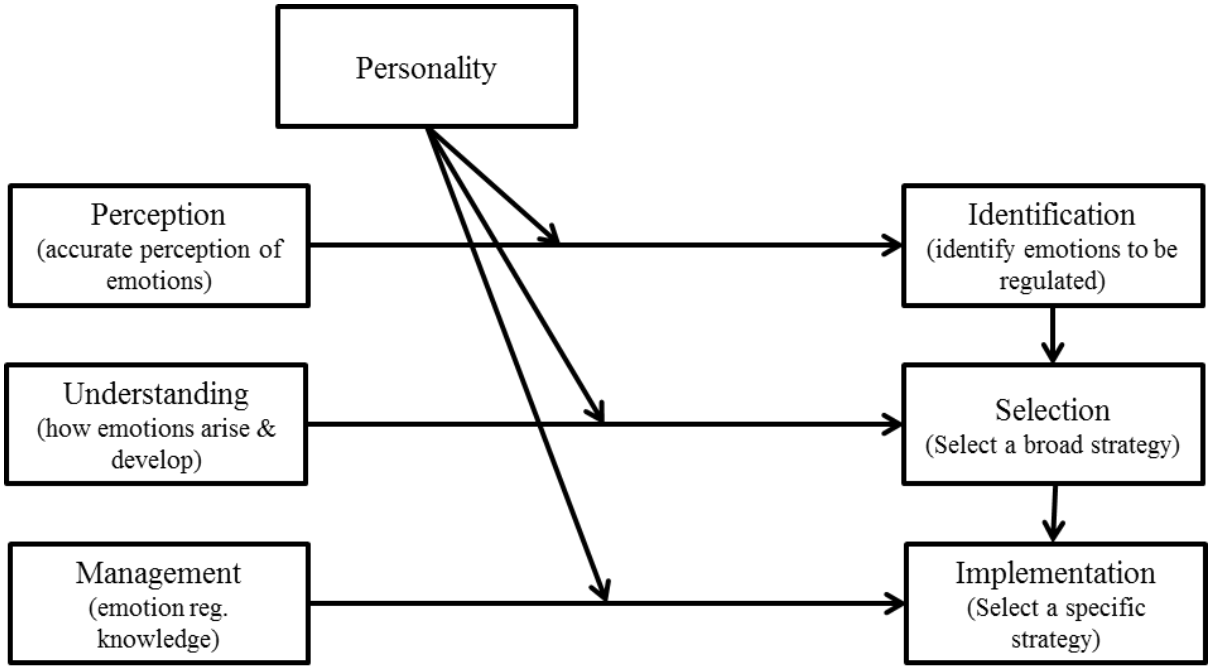

Figure 3.2 Possible interactions between the sub-factors of Ability EI and Personality traits in explaining the identification, selection, and implementation of Emotion Regulation strategies

3.2.4 Pathway 4a and 4b: Affect-related Personality → Emotion Regulation

Whilst Ability EI correlates with Emotion Regulation, it alone does not explain Emotion Regulation (Mayer, Caruso and Salovey 2016). There is a well-documented gap between ability and behaviour/achievement and individuals with similar levels of Ability EI adopt diverse Emotion Regulation strategies, some of which can be unproductive (e.g., Côté et al. 2011). Both theory and empirical evidence suggest that personality also plays a role in guiding individual's Emotion Regulation (Connor-Smith and Flachsbart 2007; Côté et al. 2011; Davis and Humphrey 2014; Fiori 2015; Hughes and Evans 2016; Peña-Sarrionandia, Mikolajczak and Gross 2015; Rothbart and Sheese 2007). Personality traits shape individuals' preferences, attentional focus, and interpersonal behaviour, all of which are likely to influence one's choice of Emotion Regulation strategy (e.g., Côté et al. 2011; Peña-Sarrionandia, Mikolajczak and Gross 2015). Furthermore, the link is evident early in the life course. For example, in 8-12-year-old children, traits associated with anxiety and irritability lead to greater use of threat appraisals (Lengua and Long 2002). As such, developmental trends are also evident whereby Affect-related Personality can influence the ease with which individuals learn and then execute specific regulatory strategies (John and Gross 2004; Carver and Connor-Smith 2010). For example, see John and Gross (2004) for a discussion as to how extraversion leads to developmental changes in suppression and neuroticism influences reappraisal. One of the key drivers of the proposed relationship between Affect-related Personality and Emotion Regulation is therefore the body of

evidence examining how temperament shapes early Emotion Regulation and how later emerging personality dimensions shape effortful regulation and coping (Carver and Connor-Smith 2010; Gross and John 2003; Rothbart and Sheese 2007).

Meta-analytic estimates suggest that Affect-related Personality is associated with Emotion Regulation in a similar fashion to Ability EI. That is, there is a consistent relationship (i.e., 35 of 37 effect sizes calculated presenting 95% confidence intervals not including 0; Peña-Sarrionandia, Mikolajczak and Gross 2015), whereby those high in Affect-related Personality tend to use strategies typically considered earlier in the process, and thus adaptive, more, and maladaptive strategies less, than individuals lower in Affect-related Personality (e.g. Schutte, Manes and Malouff 2009). In addition, effect sizes are, on average, larger than those reported for Ability EI (Peña-Sarrionandia, Mikolajczak and Gross 2015). These findings are not hugely surprising, in fact, it would be more surprising if those high in trait optimism did not frequently use positive reappraisals and those high in trait anxiety did not frequently ruminate.

Experimental results also support the link between Affect-related Personality and Emotion Regulation. With respect to mood, Affect-related Personality has been associated with greater susceptibility to mood induction, moderating the impact of experimental stressors on subsequent mood deterioration (Mikolajczak et al. 2009; Petrides and Furnham 2003). There is a significant body of experimental work adopting this mood perspective and examining susceptibility to mood deterioration and improvement. For example, Fernández-Berrocal and Extremera (2006) reported self-reported tendencies to discriminate between and regulate moods (called ‘Clarity’ and ‘Repair’) as key drivers of such findings and Ramos, Fernández-Berrocal and Extremera (2007) found similar results in context of intrusive thoughts. Furthermore, Salovey et al. (2002) found significant negative relationships between Repair and passive coping, threat appraisals and rumination, and positive relationships to active coping. Clarity was related to greater negative mood but lower cortisol release during stress and trait ‘Attention’ (attending to moods) was associated with lowered cortisol and blood pressure responses to acute laboratory challenges. These physiological findings are partially consistent with Mikolajczak et al. (2007) who reported trait EI negatively related to psychological and physiological reactivity when exposed to a stressor, and are divergent with Thomas, Fuchs and Klaperski (2018) whom report positive links with cortisol reactivity associated with stress induced by the Trier Social Stress Test. Contradictions are also evident in the attentional literature whereby Lea et al. (2018) reported higher TEIQue scores predicted greater fixation on positive emotional stimuli whereas Davis (2018) reported high trait sociability and emotionality related to a bias for negative emotions. Trait

wellbeing also corresponded to avoidance of negative emotion (sadness). There were however some consistent findings in the experimental literature, as individuals with high TEIQue scores typically exhibit greater self-efficacy and appraise stressful situations as challenges rather than threats (Mikolajczak and Luminet 2008). In sum, whilst there are a number of early contrasting findings likely due to the diversity in experimental methods and differences in Affect-related Personality content domain captured, the experimental literature is consistent in indicating an important relationship between Affect-related Personality and Emotion Regulation.

Above, it was hypothesised that there might be meaningful relationships between the three primary EI abilities (perception, understanding, management) and the identification, selection, and implementation phases of Emotion Regulation. It is also likely that certain Affect-related Personality traits will predispose individuals to think and act in specific ways within these phases. For example, certain traits (e.g., emotion perception and empathy) might predispose individuals to invest more effort in monitoring one's own and others' emotions (the *identification* phase). Other traits (e.g., anxiety or optimism or emotional expression) might predispose individuals to *select* certain classes of Emotion Regulation (e.g., situation selection or cognitive change or response modulation) and to *implement* them using specific strategies (e.g., avoidant coping or positive reappraisal or venting). It is also likely that intrapersonal Affect-related Personality traits (e.g., stress management) will predict the regulation of one's own emotions, whilst the interpersonal traits (e.g., social awareness) will predict the regulation of others' emotions.

Affect-related Personality traits are also likely to influence patterns of Emotion Regulation through goals and motives (Figure 3.1). Emotion Regulation is often, if not always, goal-driven (Gross 2015) and personality shapes values, goals and motives (Grant and Mayer 2009; Parks-Leduc, Feldman and Bardi 2015), with Affect-related Personality traits likely to influence motives and goals within affect-related settings (see Hughes and Evans 2016). A recent taxonomy linking goals and motives to Emotion Regulation has articulated six main motives in Emotion Regulation, broadly differentiated into hedonic or instrumental motives (Tamir 2016). This appears to represent a particularly useful framework for guiding examinations between personality, goals, and Emotion Regulation (Bhullar, Schutte and Malouff 2013). For example, one might expect links between social (instrumental) goals, social orientated personality traits, and Emotion Regulation strategies such as social support searching, humour, and venting. Similarly, links between positive-reappraisal, prohedonic (hedonic) motives, and neuroticism seem likely (Wang, Shi and Li 2009).

3.2.5 Pathway 5: Interaction between personality and ability → Emotion Regulation

In addition to independent relationships, it is also possible that Ability EI and Affect-related Personality interact in explaining Emotion Regulation (Côté et al. 2011; Fiori 2015; Hughes and Evans 2016). For example, Côté et al. (2011) found that when individuals were high in both Ability EI and moral identity they were more likely to behave in a prosocial manner, but if they were high in Ability EI and Machiavellianism, they were more likely to display interpersonal deviance. Importantly here, higher Ability EI was associated with greater performance (prosociality and deviance) but the direction of the performance (prosociality or deviance) was explained by Machiavellianism-based personality traits. Similarly, Foster and Roche (2014) found that Ability EI and self-rated EI assessed through the EQ-i (which has a large personality component; Austin, Saklofske and Egan 2005) interacted to explain other-rated leadership. In a third example, Fiori (2015) found that Ability EI interacts with the personality trait of emotionality (similar to neuroticism, marked by fearfulness, anxiety, sentimentality and a dependence on social support) to predict interpersonal effectiveness as assessed through a presentation task. Here, those high in Ability EI and low in emotionality (i.e., emotionally stable) were the best performers, whilst those high in Ability EI and emotionality were average performers.

The above evidence demonstrates that both Ability EI and Affect-related Personality traits are needed to explain behaviour. However, all of these studies omit the important mediating mechanism of Emotion Regulation and thus likely underestimate the effects of EI-related constructs and reduce their ability to explain how the EI-related constructs influenced the outcomes. As noted above, Ability EI and Affect-related Personality traits are expected to interact to drive the identification, selection and implementation of differing Emotion Regulation strategies. For example, two individuals equally high in Ability EI with differing levels of trait optimism (an Affect-related Personality trait; Petrides, Pita and Kokkinaki 2007) might differ in the speed and frequency with which they engage in positive interpretations (see Hughes and Evans 2016 for further discussion). Some preliminary evidence for this comes from Davis and Humphrey (2014) who found divergent roles for the EI approaches. Firstly, Ability EI moderated the relationship between stressors and coping strategies, evidencing its role as a driver of Emotion Regulation, by influencing emotional attention and arousal (Farrelly and Austin 2007; Martin and Thomas 2011; Salovey et al. 1999). Secondly, Affect-related Personality moderated the relationship between coping strategy and depression, evidencing its role for facilitating successful implementation of coping strategies (Petrides, Perez-Gonzalez and Furnham 2007). Whilst these results are not a direct test of the interactions proposed here, it does suggest that EI-related constructs do interact with some Emotion Regulation strategies and showed that being high in both Ability EI and Affect-related Personality facilitated effective coping whilst being high in one or the another was insufficient. Considering these potential interactions further, what might be expected is perhaps a

pattern whereby Ability EI accounts for differences in knowledge/ability related to Emotion Regulation, personality accounts for differences in style, and the interaction between these two elements provides a meaningful insight into individual differences in Emotion Regulation. Furthermore, whilst it is beyond the scope of the current thesis, a range of developmental interactions may be expected, whereby changes in certain traits may facilitate development of abilities (or vice-versa) with impacts for regulation preferences, implementation and success (John and Gross 2004; Rothbart and Sheese 2007). A graphical representation of the main proposed interaction is contained in Figure 3.2.

The key pathways of the Integrated Model of Affect-related Individual Differences discussed thus far provides a framework to begin addressing numerous important questions facing Emotion Regulation:

> "What leads a person to use one rather than another of the various emotion regulation strategies described by the process model? … the model is silent as to how these various emotion regulation strategies are actually started or stopped. What initiates emotion regulation? What directs specific emotion regulation strategies? And why do some people regulate emotions successfully while others fail to regulate emotions as they should?" (Gross 2015, p. 9)

One interesting additional question concerns the extent to which the identification, selection, and implementation of Emotion Regulation strategies occurs via conscious or implicit (automatic) processes (Fiori 2009). There is a growing body of evidence demonstrating the various automatic and deliberate components underpinning affect-related cognitive processing, with nuances yet unexplored in the EI literature including the role of cognitive load and sensitivity to affective information (see Ybarra, Kross and Sanchez-Burks 2014). The Integrated Model of Affect-related Individual Differences provides a framework that could guide initial experimental examinations into the relationships between different elements of EI and Emotion Regulation and the nature of the various processes underlying them (Fiori 2009).

3.2.6 Pathway 6: Emotion Regulation → Outcomes

Finally, Emotion Regulation is expected to influence meaningful intrapersonal (i.e., calming oneself before an exam) and interpersonal (i.e., conflict resolution within a team) outcomes. There is a wealth of empirical evidence to support this claim (c.f., Gross 2015), with Emotion Regulation playing "a core role in everyday social life" (Niven et al. 2012: 247) with utility demonstrated across social, health, educational, and occupational outcomes (Gross 2002; Peña-Sarrionandia, Mikolajczak and Gross 2015). Indeed, robust associations with outcomes have been established using Emotion Regulation, EI

competency, and regulation-competency hybrid scales (e.g. Austin, Saklofske and Mastoras 2010). Thus, this pathway is well supported by previous evidence. The novelty here is that Emotion Regulation does not simply occur (Gross 2015), there are drivers of Emotion Regulation and those drivers are likely to include affect-related abilities and personality traits. For example, (trait) emotional reactivity and Emotion Regulation interact to predict conflict and co-operation in 24-month-old toddlers (Calkins et al. 1999). From this perspective, Emotion Regulation is presented as the principal mediating mechanism through which Ability EI and Affect-related Personality traits influence outcomes (Hughes and Evans 2016; Joseph and Newman 2010; Mestre et al. 2016).

3.3 Discussion

The key contribution of the current chapter was to present a meaningful theoretical framework to address the pervasive questions surrounding the current conceptualisations of EI content domain. By drawing upon extant theories and the growing evidence base exploring their relevance, a coherent account of the theory behind EI as a component of cognitive ability, a collection of affect traits, and as Emotion Regulation, was presented. These theoretical considerations provide robust and replicable structures from which to explore affective individual differences. Adopting the three perspectives presented, and synthesising an extensive body of work, the current chapter has outlined the basis for an Integrated Model of Affect-related Individual Differences. Theoretically, the model delineates how affective components of cognitive ability and personality interact to influence important emotion-relevant outcomes through the identification, selection, and implementation of Emotion Regulation. On this basis, the Integrated Model of Affect-related Individual Differences represents a significant contribution – a practical framework to structure future examinations of the content, interactions between, and implications of, affective individual differences.

The Integrated Model of Affect-related Individual Differences proposed is clearly exploratory, and needs systematic, rigorous, and detailed empirical scrutiny. For example, some of the pathways proposed (e.g., interaction between ability and personality vs. separate pathways) could be argued to represent competing explanations for the same empirical effect. Hopefully, future research will examine these competing pathways and provide evidence regarding if/when each pathway is most pertinent. The goal of the remainder of this thesis is to start this body of evidence by empirically examining the main tenets of the model in explaining common EI 'outcomes', such as well-being and job performance. The extant evidence discussed strongly supports the major premise of the model, namely, that both Ability EI and Affect-related Personality traits influence the selection and implementation of Emotion Regulation strategies (Côté, et al. 2011; Davis and Humphrey 2014; Fiori

2015; Hughes and Evans 2016; Peña-Sarrionandia, Mikolajczak and Gross 2015). Accordingly, the review presented and the model proposed lead to a number of implications for future research.

First, calls to completely abandon all EI research (e.g., Locke 2005) seem misguided. However, concerns regarding construct proliferation and redundancy do hold some merit. Equally, no aspect of EI is the magical silver bullet often claimed (Goleman 1996) instead, elements of the EI literature can be seen as extensions of existing ability, personality, and Emotion Regulation frameworks.

Second, the review of research surrounding the Integrated Model of Affect-related Individual Differences suggests that piecemeal assessment of EI related constructs will give misleading findings. Future research interested in explaining Emotion Regulation or broader outcomes needs to incorporate measures of ability *and* personality, and consider the interactions between these variables. Equally, studies which estimate direct effects between outcomes and Ability EI or Affect-related Personality traits are likely to obfuscate the strength of relationship due to the omission of Emotion Regulation as a mediator.

Third, the research reviewed and the pathways proposed in this chapter suggest that focussing upon global Ability EI, broad factors containing multiple Affect-related Personality traits, and/or broad Emotion Regulation measures is likely to hide important nuanced relationships. Accordingly, future researchers should adopt a more specific approach measuring theoretically relevant abilities, personality traits (or facets), and regulation strategies. This call echoes similar calls in other applied domains (e.g., individual differences at work, Hughes and Batey 2017) and calls made from prominent EI and Emotion Regulation researchers (e.g., Gross 2015; Mestre et al. 2016; Petrides et al. 2016).

Fourth, although the focus of this chapter is not on measurement tools, the arguments presented have several implications for the nature of the constructs referred to under the EI banner and how they are operationalized. With regard to Ability EI, a number of psychometric misgivings with existing measures (i.e., lack of reliability, inconsistent factor structure, etc.) were previously noted that need to be addressed through future measure development. Interested readers should read the critiques and guidance offered by Mestre et al. (2016) in their recent review on this subject.

Regarding Affect-related Personality trait measures, there is an important need for further refinements. The review of item level content, combined with a number of empirical studies, shows clear overlap between existing personality measures and Affect-related Personality trait measures.

What we now need is a systematic study from the facet level that can identify which Affect-related Personality trait facets are unique and which are redundant duplications. In addition, it would be of interest to know which affect-related facets, if any, currently included within broad measures of personality (e.g., the NEO-PI-R) have been missed by specific measures (e.g., the TEIQue). These two lines of research would allow for the identification of much more comprehensive lists of Affect-related Personality facets (see also Laborde and Allen 2016; Petrides et al. 2016), which would be of great use to researchers and practitioners.

The concept of EI competencies (e.g., Boyatzis 2009) was deemed redundant. Models and measures stemming from this perspective capture personality traits already accounted for, self-estimates of ability that are relevant here, and some broad Emotion Regulation strategies which are better considered within existing Emotion Regulation frameworks. Thus, researchers interested in emotional skill or competencies should adopt measures of Emotion Regulation rather than problematic measures of social and emotional competence.

Fifth, the clear delineation of constructs raises the issue of nomenclature. Noted at the outset of the previous chapter, logically speaking any construct labelled EI should consist of both emotion and intelligence. Currently, only the Ability EI perspective meets this criterion and thus the label 'EI' should be reserved exclusively for this perspective. This is not the first call to make such recommendations (e.g. Gignac 2010), yet, despite previous calls, other EI-related characteristics have been resistant to change. Nevertheless, appropriate nomenclature is crucial for effective scientific communication and for reducing inconsistencies. Thus from now on, the current thesis refers to Ability EI (for affect-related intelligence), Affect-related Personality traits (for affect-laden personality measures such as those currently referred to as Trait EI), and Emotion Regulation (for measures that concern goal-oriented use of emotions).

The following two chapters of the current thesis adopt the three approaches to EI presented, and empirically explore the validity of the Integrated Model of Affect-related Individual Differences. The first adopts a cross-sectional questionnaire method to explore all key pathways proposed by the Integrated Model of Affect-related Individual Differences. The second adopts a pseudo-experimental cold pressor paradigm to explore the manner in which Ability EI and Affect-related Personality coalesce to predict Emotion Regulation in context.

3.4 Chapter conclusion

Building upon the theoretical clarity presented in the previous chapter established through three theoretical perspectives on EI, the current chapter proposed a theoretically driven Integrated Model of Affect-related Individual Differences. The Integrated Model of Affect-related Individual Differences is presented as a stepping-stone towards building a greater understanding of EI-related individual differences and subsequent affective phenomena. This model posits that despite often being pitted against each other, the different perspectives could be meaningfully entwined and may coalesce to drive emotion-relevant behaviour. Whilst we should continue to be sceptical of EI, and actively criticise extreme claims based on atheoretical models and measures, this chapter provides a structure with opportunities to address many of the questions surrounding the scope and value of EI-related constructs highlighted by the previous chapter. Evidencing the value of the Integrated Model of Affect-related Individual Differences to structure future research, theoretical developments, and applications, the following two chapters present empirical data to explore the pathways proposed.

Chapter 4: Testing the integrated model – Part 1: Questionnaire

This fourth chapter presents the first empirical examination of the Integrated Model of Affect-related Individual Differences proposed in the previous chapter. Whilst the extant literature reviewed provided initial support for some of the relationships hypothesised, the current chapter presents data collected by questionnaire from 830 individuals to examine all central tenets of the model. The contribution Ability EI, Affect-related Personality, and Emotion Regulation, can make to the understanding and prediction of important affective outcomes is explored, considering psychological well-being, life satisfaction, aggressive behaviour, friendship quality, and job performance. Results are discussed in the context of the literature adopted to construct the model, and conclusions are drawn as to whether the model proposed represents a useful framework to explore the effects of the different EI-related constructs. Limitations to the approach adopted are presented, alongside a list of key priorities to inspire and structure future exploration of the Integrated Model of Affect-related Individual Differences.

4.1 Introduction

Chapter 2 differentiated between three distinct theoretical positions on EI-related affective individual differences. In contrast to previous, and often theoretically ambiguous, definitions of EI, they draw from the theories, models, and principles of existing affective individual differences. The first, Ability EI, was defined as the cognitive processing of affective information, situated as a second-stratum factor of intelligence within the Cattell-Horn-Carroll model (MacCann et al. 2014). The second, Affect-related Personality (formerly Trait EI), was defined as a compound construct containing Affect-related Personality traits, such as those commonly found within existing personality models like the Big Five (McCrae and John 1992). The third, Emotion Regulation, was presented as an alternative (and more robust) approach for constructs formerly considered under EI competency models. Specifically, Emotion Regulation refers to the cognitive or behavioural strategies used to influence the emotions of the self or others towards the achievement of a goal.

The three affective individual differences are closely linked through their relevance to the explanation of affective behaviour. The Integrated Model of Affect-related Individual Differences introduced in the previous chapter (see Figure 4.1 below), aimed to integrate the three approaches in a theoretically salient manner. Analogous to findings across psychology (e.g. Poropat 2009), the main premise of the model is that the interaction between personality and intelligence will predict behaviour, and behaviour will subsequently predict outcomes. Specifically, exploring this within affective domains, it

is hypothesised that Ability EI and Affect-related Personality will interact to predict the identification, selection, and implementation, of Emotion Regulation strategies, and that this Emotion Regulation will predict an individual's affective outcomes within a situation.

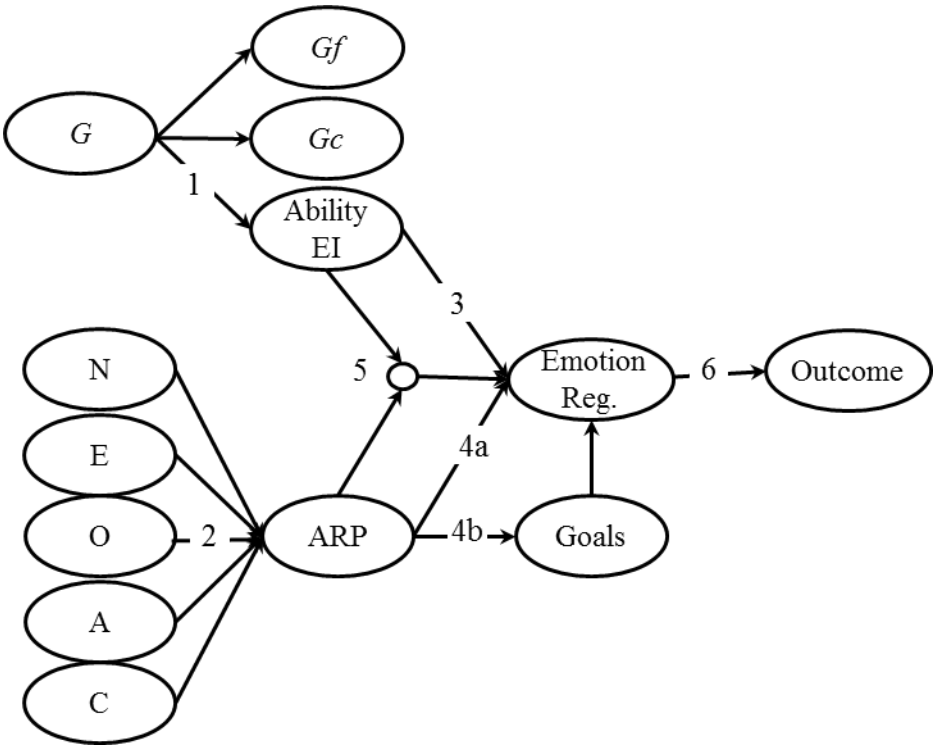

Figure 4.1 The Integrated Model of Affective Individual Differences

Although based upon current empirical and theoretical evidence, the model proposed is clearly exploratory. Some of the refinement in content domain of EI, as well as some aspects of the integrated framework, may well fail to hold to empirical scrutiny. Similarly, there may be contextual considerations (Davis and Humphrey 2012b; Ybarra, Kross and Sanchez-Burks 2014). For example, emotion labour may determine the need for Emotion Regulation strategies and thus the relationship between Emotion Regulation and job performance (Joseph and Newman 2010). Nevertheless, the evidence presented in the previous chapter shows that both Ability EI and Affect-related Personality influence choice of Emotion Regulation strategies (Côté, et al. 2011; Hughes and Evans 2016; Peña-Sarrionandia, Mikolajczak and Gross 2015) and their successful application (Davis and Humphrey 2014; Fiori 2015). Emotion Regulation influences affective performance and successful Emotion Regulation is best understood through the interaction of personality and intelligence variables, with value added through exploration of the emotion-specific components of cognitive ability and personality. However, there is yet no evidence that has systematically and convincingly evidenced all the proposed

relationships and interactions. Such work is vital to evidence the theoretical structure and interactive relationships proposed, and thus promote understanding and appropriate application of EI.

The current chapter intends to evaluate the proposed Integrated Model of Affect-related Individual Differences using Structural Equation Modelling with data collected through an extensive questionnaire battery. The study presents stands as the first to empirically capture the three conceptualisations of EI, exploring the theoretical context and interactions of the various individual differences proposed. To ensure adoption of the best measurement practices feasible, the rationale behind the measurement approach to each key construct is justified below.

4.1.1 Measuring EI

Historically the field of EI measurement has received strong critique as "a good deal of EI research has been conducted without particularly advanced psychometrics" (Matthews, Zeidner and Roberts 2007: 24). These critiques have often captured four key themes. Firstly, EI measures have been critiqued due to misunderstanding surrounding the theoretical background of EI. For example, the theoretically meaningless mixed EI model title was often used to combine diverse approaches to EI, creating a great deal of misunderstanding surrounding measurement for both academics and practitioners (Ashkanasy and Daus 2005; Daus and Ashkanasy 2003; Mayer, Salovey and Caruso 2000; Locke 2005; Zeidner, Roberts and Matthews 2008). Subsequently, there are a number of measures for which the theoretical background is ambiguous (Miners, Côté and Lievens 2018). More work is needed to clarify and refine the theoretical positions of such measures created without theoretical guidance, and ensure that future use is theoretically sensitive.

Second, as a result of the lack of theoretical guidance, there have been substantial critiques surrounding content domain (Gignac 2006). There is a concern that many measures have been labelled as EI, but do not capture EI content domain (Gignac 2006; 2010). Known as the jingle fallacy (Thorndike 1904), this has been well exemplified by the inclusion of self-motivation within personality models of EI (e.g. Petrides and Furnham 2001). As discussed in Section 3.5.4, motivation is at least partially driven by traits, but is not considered a component of personality (Grant and Mayer 2009; Parks-Leduc, Feldman and Bardi 2015). Similarly, to reject the theoretically ambiguous 'EI' title, many measures of relevant constructs have been given other titles e.g. trait emotional awareness (Ciarrochi, Caputi and Mayer 2003). This 'jangle fallacy' (Kelley 1927) is also exemplified by the field of Trait EI, which itself represents a rebranding of various existing personality traits. These issues surrounding content domain have led to ambiguity and inconsistencies surrounding the extent to which EI measures capture intelligence or personality, which has led to multitudes of papers examining incremental

predictive validity of a single approach, or competitively comparing each of the perspectives predictive validity (e.g. Brackett and Mayer 2003). This has led to contradictory and inconsistent findings, with much confusion surrounding the most appropriate theory and measure to be adopted for future research projects. For example, when conducting a meta-analysis on the impact of EI teaching upon medical students, Cherry et al. (2012) widened the definition of EI to include empathy, mindfulness, empathetic communication style, compassion, and sensitivity, leading to ambiguous conclusions as to what could be attributable to EI.

Third, many measures have been conflated with theories, meaning any critiques, whether appropriate or unfounded, have often been associated with both the theory and the measurement tools used to represent it (Austin 2010; Matthews, Zeidner and Roberts 2007). This is problematic not only as the theoretical grounding of many of the current measures is problematic, but also because it becomes difficult to differentiate test effects from construct effects (MacCann and Roberts 2008). This has been especially true for the MSCEIT and Ability EI, which are considered analogous to many (Fiori et al. 2014). In the case of Ability EI theory, this has become particularly problematic as alternative structures have been suggested (e.g. Fan et al. 2010 for a meta-analytically driven three-branch structure), and it is often unclear which are optimum explanations of Ability EI theory, with few alternative tests to help clarify.

Fourth, the psychometric properties of the data produced by some EI measures has been poor (Conte 2005), raising doubts surrounding their practical use (MacCann et al. 2003). The aim of the current thesis is not to review the quality of data any one EI measure produces: there have been many reviews of current measures (Petrides 2011; Brackett and Geher 2006), however it is worth acknowledging that many researchers have consistently highlighted issues with reliability and validity (e.g. Cartwright and Pappas 2008; Ciarrochi, Chan and Caputi 2000; Davies, Stankov and Roberts 1998; Miners, Côté and Lievens 2018). Furthermore, the involvement of test publishers appears to have limited the comprehensive evaluation of many measures (Cartwright and Pappas 2008). Without public non-proprietary databases that can receive independent reanalysis, replication or verification, many of the claims and psychometric qualities attributed to measures, especially the MSCEIT, EQ-I, and ECI, are questionable (Landy 2005). The extent of these psychometric-based issues is that some have concluded that “serious concerns remain for all of the EI measures” (Conte 2005), with the state of domain described as “primitive” (Salovey, Woolery and Mayer 2001).

These critiques should be considered inter-related, likely due to a lack of theoretical grounding to facilitate measure development and use. Because of these critiques, and general concern surrounding the substance of EI, there are few, if any, EI measures which are well-validated and understood by the

academic community (Conte 2005). As such, it seems worthwhile clarifying the measurement methods adopted to evaluate the proposed integrated model, and the rationale for their use in context of the theory discussed in the previous chapter.

4.1.2 Ability EI

Ability EI has most frequently been associated with the MSCEIT (Mayer et al. 2003; formerly the MEIS). As noted, this measure has frequently been conflated with EI theory, occasionally produces data with poor psychometric qualities, and is controlled by test publishers and thus has been associated with significant costs. As such, alternative non-proprietary EI measures were adopted to capture the three Ability EI domains for the current study. To capture emotion perception, the Reading Mind in the Eyes test (Baron-Cohen et al. 2001) was adopted. Participants look at cropped images of eyes to specify the emotion being portrayed (see Figure 4.2). As such, this measure has been entwined with Theory of Mind: the ability to infer what another may be thinking or feeling (Premack and Woodruff 1978; Schlinger 2009). The test has been moderately to strongly related with other measures of emotion perception ability (Henry et al. 2009; Petroni et al. 2011) and as such, some researchers have used it as a proxy measure of emotion perception ability (e.g., Guastella et al. 2010). Adopting recommendations from Olderbak et al. (2015), an Ant Colony Optimised version of the Reading Mind in the Eyes test was adopted to capture the emotion perception ability component of Ability EI.

Figure 4.2 Example Reading Mind in the Eyes question stimulus (item 8)

There were very few validated alternatives to the MSCEIT when exploring the measurement of emotion understanding and management. Often measures lack sufficient theoretical guidance and thus fail to represent the cognitive ability background required. For example, the Children's Emotion Management Scale captures Emotion Regulation strategies rather than the cognitive processing of information surrounding affective change (Zeman, Shipman and Penza-clyve 2001). As such, the Systematic Test of Emotion Understanding and Systematic Test of Emotion Management (MacCann and Roberts 2008) were adopted as theoretically-appropriate measures of emotion understanding

and measurement. The scales have not received as comprehensive validation as the MSCEIT, however have been designed based upon Appraisal theory (Roseman 2001), and been explicitly situated within cognitive ability frameworks (MacCann and Roberts 2008). Accordingly, the STEM and STEU have been strongly linked to other Ability EI measures and correlations to personality are to a similar extent to other cognitive abilities (Ackerman and Heggestad 1997; Austin 2010, Libbrecht and Lievens 2012, MacCann and Roberts 2008). The STEM and STEU have also demonstrated acceptable internal reliability (Austin 2010) and have demonstrated predictive validity for affective clinical outcomes like anxiety, stress, and depression (MacCann and Roberts 2008).

4.1.3 Affect-related Personality

Affect-related Personality, formerly 'Trait EI', is often captured through measures developed by domain sampling, whereby items are taken from "relevant" content domain and amalgamated. Problematically, few measures acknowledge the personality background to Affect-related Personality when designing measures. For example, the EQ-i is often reported to capture Affect-related Personality, however it represents mixed content domain not just behavioural preferences/dispositions, and should thus be considered problematic for representing affect-related traits. The most popular measure, and that which has been based most explicitly upon personality theory, is the TEIQue (Petrides 2009). The TEIQue has drawn upon domains from multiple fields to derive fifteen factors and four key themes – well-being, self-control, emotionality, and sociability. As it was originally developed under a mixed model approach, the TEIQue does include some items surrounding self-perceived abilities (e.g. I believe I am full of personal strengths), and has drawn in other competency-based content domain (e.g. I would describe myself as a good negotiator). However, data collected using the TEIQue demonstrates acceptable reliability (Petrides 2009), consistently provides incremental predictive validity over higher-order personality dimensions (Andrei et al. 2016) and findings from factor-analytical studies are consistent with the theoretical proposition that Affect-related Personality represents a collection of affect-related traits (e.g. Petrides, Pita and Kokkinaki 2007). Thus, the TEIQue-SF was adopted as a concise measure of affect related traits for the current study, acknowledging item-level analyses will not be possible due to the domain-sampling based method of development (Petrides 2009).

4.1.4 Emotion Regulation

There have been a diverse range of Emotion Regulation measures developed. The most well-known is the Emotion Regulation Questionnaire (Gross and John 2003) which considers the up-regulation of positive emotions and down-regulation of negative emotions. The ERQ scales demonstrates adequate reliability, a stable factor structure, and provides prediction of numerous socially important outcomes (e.g., depression, anxiety, stress, interpersonal functioning, well-being, social adjustment, and

decision-making; see Spaapen et al. 2014). As Emotion Regulation has been defined as a collection of cognitive strategies and behaviours however, it seems most appropriate to adopt a behavioural approach and capture a range of specific Emotion Regulation strategies rather than general styles. There are many existing measures which could have been used (e.g. the Cognitive Emotion Regulation Questionnaire: Garnefski, Krassij and Spinhoven 2001; Interpersonal Emotion Regulation Questionnaire: Hofmann, Carpenter and Curtiss 2016; COPE Inventory: Carver, Scheier and Weintraub 1989; FEEL-KJ: Grob and Smolenski 2005; Regulation of Emotion Systems Survey: De France and Hollenstein 2017) however none capture strategies from across the five stages of the Process Model of Emotion Regulation (Gross 1998; 2015). As such, addressing the need to capture a more comprehensive range of specific strategies, various scales from across these measures were compiled. As detailed in Section 4.2.3 below, the subsequent questionnaire draws items from many of the aforementioned measures, where appropriate, to capture 10 Emotion Regulation strategies from across the Process Model of Emotion Regulation.

4.1.5 Selecting outcomes

Historically there have been a wide range of outcomes associated with the fields of EI and Emotion Regulation, ranging from orgasm and masturbation frequency (Burri, Cherkas and Spector 2009) to alcohol consumption, illegal drug use, and deviant behaviour (Brackett, Mayer and Warner 2004). To explore the Integrated Model of Affect-related Individual Differences, EI outcomes to be explored were selected from a systematic examination of a number of key individual and social domains. Outcomes chosen were often commonly explored by the extant literature, allowing a number of empirical and meta-analytic works to inform interpretations of the value of the proposed theoretical and integrative work, thus minimising the chance of drawing erroneous conclusions from type one or two errors.

Generally, both cognitive ability- and personality-based conceptualisations of EI have been moderately associated with health ($r = .17$; $r = .34$, respectively), with meta-analytic data consistently linking Affect-related Personality to psychological health ($r = .36$; Martins, Romalho and Morin 2010). This link is unsurprising given that one key component of the most popular Affect-related Personality measure is labelled ‘Well-being’ (Petrides 2009). As such, correlations up to .69 between Affect-related Personality and well-being indicators such as depression have been reported (Brackett and Mayer 2003; Mavroveli et al. 2007), with consistent links to underlying concepts such as mood, optimism, self-acceptance, and self-esteem (Augusto-Landa, Pulido-Martos and Lopez-Zafra 2011; Carmeli, Yitzhak-Halevy and Weisberg 2009; Schutte et al. 2002; 2007). Furthermore, there have been many who have theoretically modelled various underlying regulation processes behind the

relationship between EI and well-being (Zeidner, Matthews and Roberts 2012). In preliminary empirical support for such claims, Gallagher and Vella-Brodrick (2008) demonstrated that when Affect-related Personality is low, social support moderates the relationship between Affect-related Personality and well-being. Similar mediation findings were replicated in a sample of 678 Chinese students with Affect-related Personality (Kong, Zhau and You 2012b) and 358 Israeli students with Ability EI (Zeidner, Matthews and Olnick-Shemesh 2016; Zeidner and Matthews 2016). Furthermore, avoidant coping has mediated the relationship between social support and well-being (Zeidner, Matthews and Olnick-Shemesh 2016). Such a finding is consistent with the significant body of evidence to associate avoidance of negative emotions, or situations that could cause them, with lower levels of subjective well-being (DeNeve and Cooper 1998; Machell, Goodman and Kashdan 2015). In sum, well-being has previously been linked to Ability EI, Affect-related Personality, and Emotion Regulation (e.g. Sánchez-Álvarez, Extremera and Fernández-Berrocal 2016), and thus seems a relevant outcome to explore the proposed Integrated Model of Affect-related Individual Differences, particularly in reference to avoidance and social support seeking Emotion Regulation strategies.

EI and Emotion Regulation have also commonly been linked to subjective well-being captured under the guise of life satisfaction. Consensus within the field is that Affect-related Personality is moderately linked whereby Ability EI does not meaningfully correlate (Brackett and Mayer 2003; Extremera and Fernández-Berrocal 2005; Schutte et al. 2010; Zeidner and Olnick-Shemesh 2010). Like well-being, there is preliminary evidence for the value of Emotion Regulation, with a modest evidence-base demonstrating the mediating role of social support seeking (Kong, Zhao and You 2012a; Koydemir et al. 2013; Runcan and Iovu 2013; Quoidbach et al. 2010). In addition, rumination has also been strongly associated with life satisfaction (Eldelekioglu 2015; Harrington and Loffredo 2010; Sütterlin et al. 2012; Ysseldyk, Matheson and Anisman 2007; Zanon et al. 2016), alongside a more modest evidence base for positive re-appraisal (Esmaeilinasab, Khoshk and Makhmali 2016; Mitrofan and Ciuluvică 2012; Yiğit, Özpolat and Kandemir 2014), and fault-finding (Nelis et al. 2011). As such, life satisfaction will be the second outcome explored.

To ensure outcomes of positive and negative valence were captured, aggression was included within the outcomes explored. Ability EI has been modestly linked to bullying (Kokkinos and Kipritsi 2012; Lomas et al. 2012) and physical aggression ($r = -.27$, however only for males: $r = -.40$; females: $r = -.03$; Brackett, Mayer and Warner 2004). It has been proposed that Emotion Regulation strategies behind friendships, such as rumination, may impact aggression (Castillo et al. 2013; Peled and Moretti 2007). Castillo et al. (2013) evaluated an intervention on 361 adolescents based upon Ability EI and adaptive Emotion Regulation. Significant decreases in physical aggression, verbal aggression, anger, and hostility were reported, in comparison to a control group. In addition to rumination, substance (both

alcohol and drug) use as a method of coping has been particularly well explored in relation to aggressive and violent behaviour. Reviews from across the last three decades have consistently highlighted the causal impact of substance use upon likelihood to engage in aggressive behaviour (Bushman and Cooper 1990; Doran et al. 2012; Ito, Miller and Pollock 1996; Moss and Tarter 1993; Tomlinson, Brown and Hoaken 2016).

Within the literature discussed, friendships and relationships appear important, whether considered a mechanism to support outcomes such as well-being, or an outcome itself. There is strong longitudinal evidence to suggest that EI-related constructs and Emotion Regulation plays a key role in building and maintaining friendships (Niven, Holman and Totterdell 2012; Niven et al. 2015; Parkinson, Simons and Niven 2016). Individuals high in Ability EI are more likely to report positive relationships with others (Brackett, Mayer and Warner 2004; Lopes, Salovey and Straus 2003). Furthermore, Brackett, Warner and Bosco (2005) found that dyads where both had low Ability EI scores had the lowest ratings of relationship quality. Smith, Ciarrochi and Heaven (2008) suggests Affect-related Personality, as measured by the TEIQue Short-Form, has a consistent effect on relationship satisfaction and a meta-analysis has estimated this relationship at .32 (95% CI .22, .41; Malouff, Schutte and Thorsteinsson 2014). Similarly, Mavroveli et al. (2007; 2009) found Affect-related Personality also related to ratings of greater co-operation and kindness, and to greater adaptive coping strategy use e.g. social support seeking. Similarly, research has found that positive re-appraisal is perceived to impact relationship quality (López-Pérez, Sanchez and Parkinson 2017), with preliminary evidence for direct and indirect (through positive affect) relationships to friendship quality (English et al. 2012; Gross and John 2003; Zaccagnini and Ruiz-Aranda 2013). A 21-minute reappraisal intervention has also been evidenced as effective in supporting the maintenance of marital relationship quality (Finkel et al. 2013). In the current study, these findings will be integrated to demonstrate how Ability EI, Affect-related Personality, and Emotion Regulation interact to predict relationship quality.

Finally, one of the most popular contexts in which EI has been applied is the workplace, where various cross-sectional and intervention-based works have explored EI and job performance. A meta-analysis concluded the relationship between various EI perspectives and job performance to vary between .24 and .30 (O'Boyle et al. 2011). In agreement with Newman, Joseph and MacCann (2010), the current thesis argues that if such a relationship is found, it is likely due to Emotion Regulation. Although there is not much literature consistently exploring the impact of specific Emotion Regulation strategies on an individual's ability to perform within the workplace, research conducted within the field of emotional labour provides strong support for the importance of regulating one's own, and others, emotions within the workplace (Grandey 2000). The coping literature presents a range of negative

workplace outcomes moderately related to avoidant-coping, including emotional exhaustion, cynicism, lower professional efficacy (Li et al. 2014), burnout (Montero-Marin et al. 2014), role ambiguity, stress (Skogstad et al. 2014), lower work engagement, lower well-being (Cheng, Mauno and Lee 2014), and ultimately, lower job performance (r = .07; Nandkeolyar, et al. 2004). In contrast, planning one's approach to emotional demands within the workplace is likely to be a positive predictor of affect-related job performance. Whilst there is no literature examining this specifically, the broader literature base evidences the importance of planning for job performance and business success (Brinckmann, Grichnik and Kapsa 2010; Frese et al. 2007; Mumford and Frese 2015). As such, job performance appears a relevant outcome to explore this premise in the context of the Integrated Model of Affect-related Individual Differences.

4.1.3 Hypotheses

In line with the Integrated Model of Affect-related Individual Differences outlined within the previous chapter, the following pathways will be explored:

1. When explored alongside crystalised and fluid intelligence, Ability EI, formed of emotion recognition, management and understanding sub-factors, will represent a unique but related factor of intelligence (MacCann et al. 2014)
2. Affect-related Personality (formerly Trait EI) will significantly correlate with affective traits from across broad-band-width personality models (Petrides, Pérez-González, and Furnham 2007)
3. Ability EI will explain significant variance in Emotion Regulation (Peña-Sarrionandia, Mikolajczak and Gross 2015)
4. Affect-related Personality will explain significant variance in Emotion Regulation (Peña-Sarrionandia, Mikolajczak and Gross 2015)
5. The interaction between Ability EI and Affect-related Personality will explain significant variance in Emotion Regulation (Côté et al. 2011; Davis and Humphrey 2014; Fiori 2015; Foster and Roche 2014)
6. Emotion Regulation will explain significant variance in well-being, life satisfaction, aggression, friendship quality, and job performance

4.2 Method

4.2.1 Design

Given the broad aims of the current study to explore the central pathways proposed by the Integrated Model of Affect-related Individual Differences, a quantitative cross-sectional questionnaire design was adopted. Whilst this cross-sectional design precludes strong conclusions surrounding causality, and

longitudinal or experimental methodology would have been preferable, the broad study aims, likelihood of high attrition with limited follow-up opportunities (Cotter et al. 2005), and project timeframes dictated the necessity for a large cross-sectional study.

All participants completed a battery of self-report psychometric tests online. Online participation was considered preferable to physical participation (Evans and Mathur 2005) as it typically captures a more diverse sample (Gosling et al. 2004) and thus could test the broad tenets of the model across a wider range of demographics. The battery took roughly 1 hour to complete, and captured multiple facets of intelligence, personality, Emotion Regulation, and various outcomes including well-being, friendship quality, and job performance. Self-report measures were considered fundamental for facets of intelligence and non-observable Emotion Regulation strategies (Baldwin 2000). Due to a) a lack of well-validated other-rated measures for others facets such as Affect-related Personality and well-being (Lepper 1998), b) likelihood of low response rates to other-rated measures (Cotter et al. 2005), and c) practical and financial constraints surrounding the current project, all measures adopted were self-report.

The current study captures many psychological attributes that are not fixed and can only be measured in context of social praxis (Guyon et al. 2018). For example, Neuroticism, or the ability to recognise facial emotions, results from transactions of the body with its social and biological environment (Dewey 1998) and thus cannot be observed as entities independent of social context. However, it must be assumed that these attributes 'exist' for any measurement to be considered valid (Borsboom, Mellenbergh and Van Heerden 2004). For example, for IQ tests to be a valid assessment of intelligence, one must assume that intelligence can be found in reality and that this measure represents it. Accepting psychological attributes exist, but are embedded in social praxis, the current study most closely aligns to a pragmatic-realist epistemology (Guyon et al. 2018; Maul, Wilson and Irribarra 2013). This approach accepts that some form of reality exists where psychological attributes are not seen directly (denying direct access to a single fixed truth) but accessed through "our various substantive and methodological theories and pragmatic concerns that cause us to organize and prioritize experience in a particular way" (Maul, Wilson and Irribarra 2013: 5).

4.2.2 Participants

Participants were required to be over 18 and to have English as their first language. Five-hundred and twenty-seven participants were convenience sampled through Qualtrics and a further 303 participants were recruited through a University research participation scheme and through convenience sampling of friends, family and social network contacts. All participants were screened to ensure they were above 18, and those sampled by Qualtrics were also required to be currently employed to capture job performance data. In total, 556 females and 274 males participated, with 368 aged between 18 and

30, 204 aged between 31 and 45, 254 aged between 46 and 70, and 4 that were 71 or older. 595 participants from the final sample were currently employed, and 500 were in a relationship at the time of questionnaire completion.

4.2.3 Materials

Intelligence - Intelligence was measured by subscales of the ICAR (Condon and Revelle 2014). To capture fluid intelligence, the 9-item Letter and Number Series task was adopted. To capture crystallised intelligence, the 16-item verbal reasoning task was administered. Participants responded using one of eight responses scored as either correct (1) or incorrect (0). Although relatively new, internal reliability scores of .77 and .76 respectively have previously been reported, in addition to theoretically-relevant moderate-to-strong correlations with measures of cognitive ability and achievement (Condon and Revelle 2014).

Personality – Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism were captured by the Big Five Inventory (John and Srivastava 1999), through 44 items responded to on a five-point likert scale. Cronbach's alpha scores typically lie between .7 and .8 (Li et al. 2015) and scores typically show high convergent validity with other self-report and peer-rated trait measures (Gosling, Rentfrow and Swann 2003).

EI abilities – Emotion recognition was captured by the Ant-Colony Optimised Reading Mind in the Eyes Test (Baron-Cohen et al. 2001; Olderbak et al. 2015). Ten images of eyes were presented and participants chose from 4 options each to identify the emotion being experienced, scored as correct (1) or incorrect (0) as judged by raters (Baron-Cohen et al. 1997). Unlike the original measure, this optimised-version appears to support data collection with acceptable internal reliability, and moderately relates to emotional perception as captured by The DANVA 2 Faces subscale (Nowicki and Duke 1994). Emotion management was captured by the Situational Test of Emotion Management Short Form (Allen et al. 2015). The scale involves 18 items answered by the choice of one of four options, each scored between 0 and 1 based upon percentage agreement with an expert sample (MacCann and Roberts, 2008), and has a reported internal reliability of .84 (Allen et al. 2015). Emotion Understanding is captured by the Situational Test of Emotion Understanding Brief with a similar 19-item format with five response options scored as 0 or 1 based upon Appraisal theory, and a reported Cronbach's Alpha of .63 (Allen et al. 2014). Both tests have demonstrated theoretically-appropriate convergent and discriminant validity, correlating with measures of cognitive ability but not personality (MacCann and Roberts 2008).

Affect-related Personality – Affect-related Personality was captured by the Short-Form Trait Emotional Intelligence Questionnaire (Petrides 2009). The scale has 30 items that are responded to using a 7-

point likert scale, and has a reported cronbach's alpha of .88 for men and .87 for women (Cooper and Petrides 2010). The full scale has demonstrated modest yet consistent incremental predictive validity for relevant affective outcomes beyond higher-order personality dimensions (ΔR2= .06, SE = .0116; 95% CI: .03–.08; Andrei et al. 2016). Collapsing the fifteen subscales of the full-length measure, four broader subscales of well-being, self-control, sociability and emotionality have been suggested.

Emotion Regulation - Use of ten Emotion Regulation strategies were captured. Two strategies were chosen to exemplify each stage of the Process Model of Emotion Regulation (Gross 1998), with five items developed to capture each. With a focus on specific behaviours, representing the behavioural competency theoretical approach adopted, participants were asked how frequently they used such behaviours within the last month on a 7-point likert scale ranging from 1 (I haven't done this at all) to 7 (I have done this a lot).

For the representation of such a broad range of behaviours, where existing measures were appropriate, items with a factor loading above .7 were incorporated and those of less than .5 were not considered. To be considered appropriate, existing measures had to be a) clearly aligned to a definition, b) clearly aligned to the theoretical stage of Emotion Regulation, and c) to be of specific behavioural or cognitive focus.

1. Situation Selection: Chosen to represent the approach and avoidant distinction within the literature, avoidant coping and perseverance/confrontation were chosen to epitomise the positive and negative situation selection Emotion Regulation strategies.

Avoidant coping: Numerous avoidant coping measures exist e.g. the Coping Styles Questionnaire (Roger, Jarvis and Najarian 1993), however fail to represent the behavioural or situation-selection emphasis required e.g. "Trust in fate – that things have a way of working out for the best". As such, five new items were developed based upon the definition of avoidant coping as "the escape of the situation as a whole" (Peña-Sarrionandia, Mikolajczak and Gross 2015: 2).

Perseverance/Confrontation: Defined as "choosing to face a situation in spite of the negative emotions it might potentially elicit… particularly efficient if the situation is likely to bring long-term benefits" (Peña-Sarrionandia, Mikolajczak and Gross 2015: 2), there currently exists no measures of confrontation behaviours. As such, five items to capture these behaviours were developed by the current author based upon the definition provided.

2. Situation Modification: Chosen for representing the two most popularly explored (Peña-Sarrionandia, Mikolajczak and Gross 2015) and specific behavioural Emotion Regulation strategies of this model component, two positive strategies: planning and social support searching were chosen.

Planning: The scale was developed by adapting the two highest-loading questions from the Cognitive Emotion Regulation Questionnaire (Garnefski, Krassij and Spinhoven 2001) and COPE Inventory (Carver, Scheier and Weintraub 1989) Planning subscales, alongside an additional question written to reflect the content domain.

Social Support Search: This measure adapted the two highest-loading questions of the Interpersonal Emotion Regulation Questionnaire (Hofmann, Carpenter and Curtiss 2016), and the three highest-loading questions from the COPE Inventory (Carver, Scheier and Weintraub, 1989) emotional social support scale.

3. Attention Deployment: Rumination and Distraction were chosen to represent attentional deployment as they reflect both positive and negative attentional engagement, and have previously been associated with many clinical outcomes (Augustine and Hemenover 2009; Rood et al. 2009; Webb, Miles and Sheeran 2012).

Rumination: The scale was developed by adapting the two highest-loading questions of the Cognitive Emotion Regulation Scale (Garnefski, Krassij and Spinhoven 2001), and the three highest-loading questions of the Reflection-Rumination Questionnaire (Trapnell and Campbell 1999) rumination subscales.

Distraction: As the COPE Inventory (Carver, Scheier and Weintraub 1989) distraction subscale items had low factor loadings and did not reflect the attentional deployment component of distraction, five new items were written based specifically around attentional deployment.

4. Cognitive Change: Positive Reappraisal was chosen as it is a positive strategy that has been well researched through many existing measures. Catastrophic thinking was explored as it represents a new 'negative hopelessness' addition to the field that has not yet been explored in relation to EI (Peña-Sarrionandia, Mikolajczak and Gross 2015).

Positive Reappraisal: Defined as changing the way you think about an event to be more positive (Garnefski, Krassij and Spinhoven 2001), the three highest loading items of the Emotion Regulation Questionnaire (Gross and John 2003), and two of the COPE Inventory (Carver, Scheier and Weintraub, 1989) were adapted.

Catastrophic Thinking: To match the definition of explicitly emphasizing the terror of the experience (Sullivan, Bishop and Pivik 1995) and inability to suppress or divert attention away from negative or painful thoughts, rather than rumination, new items inspired by The Refraining from Catastrophic Thinking Scale (Sugiura, Sugiura and Tanno 2013) were developed.

5. Response Modulation: Two negative Emotion Regulation strategies were adopted: venting and substance abuse. Venting was chosen as it represents behaviour that is positive for the self but likely to be negative for others, and subsequently has differential relationships to Ability and Trait conceptualisations of EI (Peña-Sarrionandia, Mikolajczak and Gross 2015). Substance abuse was decided upon as it is the most popularly explored Emotion Regulation strategy within this model stage, and has been well established as a maladaptive Emotion Regulation strategy.

Venting: The two highest-loading items of the COPE Inventory (Carver, Scheier and Weintraub 1989) venting subscale were adapted, in addition to writing three additional items to cover content domain.

Substance Use: Capturing use of drugs or alcohol to regulate emotions, the full COPE Inventory (Carver, Scheier, and Weintraub 1989) substance abuse inventory was adapted, with an additional item written to represent use for coping.

Well-being – To capture health-related subjective well-being, the 5-item World Health Organization Well-being Index (WHO-5; World Health Organisation 1998) was adopted. Items were responded to on a 5-point likert, ranging from 'All of the time' to 'At no time'. The scale is unidimensional with an internal reliability often reported above .9 (e.g. Hajos et al. 2013), and each item adds unique information regarding the level of well-being (Blom et al. 2012). Topp et al. (2015) conducted a systematic review of the WHO-5, concluding it to be a simple and sensitive measure of well-being, evidencing key practical utility through its use as an outcome measure in clinical trials, and predictive validity with depression (Topp et al. 2015). The scale is particularly relevant for the current study given its recent use as an outcome measure for an emotional regulation intervention within the work context (Buruck et al. 2016).

Life Satisfaction - The Satisfaction With Life Scale (Diener et al. 1985) is a 5-item questionnaire scored on a 7-point likert ranging from 'strongly agree' to 'strongly disagree'. The scale is unidimensional (Atienza, Balaguer and García-Merita 2003) is mostly comparable across cultures (Whisman and Judd 2016) and considered a 'gold-standard' (Kaczmarek, Bujacz and Eid 2015) in life-satisfaction measurement due to its psychometric qualities and predictive validity (Pavot and Diener 2008). All 17 papers referenced on life satisfaction in Section 4.1.2 above utilised the Satisfaction with Life Scale (SWLS; Diener et al. 1985) which has been extensively validated and is predictive of many key behaviours such as suicide (Pavot and Diener 2008).

Aggression: The Brief Aggression Questionnaire (Webster et al. 2014) is a 12-item measure of physical aggression, verbal aggression, anger, and hostility, scored using a 5-point likert. Although fairly new, the psychometric properties seem reasonable with both internal and test-retest reliability reported

over .6, consistent structure loading, strong relationships to rumination and planning Emotion Regulation scales reported, and convergent validity with both self-report and behavioural measures of aggression (Webster et al. 2014; 2015). The measure is particularly relevant to the current study given the successful use of a previous version in an Ability EI and Emotion Regulation-based intervention by Castillo et al. (2013).

Relationship (Friend) Quality: Friendship quality was measured by 4 items of the Inventory of Parent and Peer Attachment (Armsden and Greenberg 1987). The four highest loading items capturing the peer trust scale were adopted (Wilkinson and Goh 2014), rated on a 5-point likert. This seemed appropriate given that it would tap into an underlying 'secure attachment' factor, and that the communication scale was analogous to social support searching and thus inappropriate (Wilkinson and Goh 2014). Internal reliability of the original scales has varied from .48 to .96 with 3-week test-retest reliability ranging from .86 to .93 (Wilson and Wilkinson 2012). It is the most commonly used peer/parent attachment measure (Gorrese and Ruggieri 2012), has been cited over 3500 times thus far, and has continued to be considered relevant and applicable to this day (e.g. Chen et al. 2017).

Self-rated job performance: Job performance was measured by a bespoke 7-point likert rating of the great eight competencies (Kurz and Bartram 2002) which were articulated by the Universal Competency Framework (Bartram 2005) originally compiled from job analyses of a range of roles. Whilst many alternative conceptualisations and measures of job performance exist (Barrick and Mount 1991), capturing competencies seemed an especially beneficial assessment strategy given the interactions and divergent roles of personality and intelligence for the prediction of the great eight competencies (Bartram 2005).

4.2.4 Procedure

All participants, regardless of recruitment method, completed the study online, either through Bristol Online Survey or Qualtrics. Participants were provided a participation information sheet (Appendix 8.2) then completed the consent form (Appendix 8.3) and battery of questionnaires (Appendix 8.6) before being debriefed (Appendix 8.4). Participation typically took around 60 minutes.

4.3 Results

4.3.1 Analysis strategy

Analyses were conducted using MPlus 6.0 and SPSS 16. First, using roughly half of the data set (N = 400), Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) was conducted upon the items of each scale to identify a reliable factor structure for each latent variable. The EFA conducted examined whether each variable was unidimensional or whether the variance in item responses could be attributed to multiple factors. The CFA helped to determine whether the factor

structure determined by the EFA was consistent, and whether all items could be retained. Second, the factors and factor structures identified were cross-validated using CFA on the second half of the data set (N= 430). Third, the pathways and hypotheses presented above are explored sequentially using a combination of Structural Equation Modelling (SEM) and path analysis within the whole sample (N = 830). An iterative and in some instances exploratory modelling approach was adopted, in line with general model building guidelines (Anderson and Gerbing 1988). We consider the exploratory use of structural equation modelling employed here to be justified given the relative infancy of theoretical work. In addition, this approach allowed: a) all hypotheses to be tested systematically for clarity without too much interference from high inter-variable correlations, b) to limit the impact of model complexity which can influence fit statistics and thus conclusions drawn (Myung 2000), and c) practicality in that the most complex models examined took over twenty-four hours to estimate. To mitigate concerns that findings are not similar when analysed holistically however, full SEM models incorporating pathways 3-6 were produced to provide a more comprehensive exploration of the Integrated Model of Affect-related Individual Differences.

The Exploratory Factor Analyses conducted adopted the Weighted Least Squares Means and Variances (WLSMV) estimation method, with oblique Geomin rotation. The likert-type data collected is theoretically appropriate for WLSMV which makes no assumptions based upon distribution or levels of measurement (Browne 1984; Muthén and Muthén 2010), and as many of the facets captured in the current study are expected to be correlated, the oblique geomin rotation method was adopted to allow factor indicators to meaningfully cross load (Muthén and Muthén 2010). The number of factors to extract was determined by scree test and parallel analysis. Scree tests (Cattell 1966) plot the number of variables in a solution with the eigenvalue in descending order. At the 'point of inflection' where the slope in scores flattens, the factor number is taken as the greatest possible number of distinct factors within the data. As the scree test is over-sensitive, typically identifying too many factors (Velicer, Eaton and Fava 2000; Hayton, Allen and Scarpello 2004), it was used to determine the maximum number of factors to explore (Velicer, Eaton and Fava 2000; Hayton, Allen and Scarpello 2004). Parallel analysis was used to determine the minimum, conducted using the syntax codes provided by O'Connor (2000: 398). Parallel analysis compares eigenvalues from the sample with that of 1000 random data sets representing different permeations of the current data set. It has been recommended that when eigenvalues from the sample are larger than 95% of the randomly generated eigenvalues, the factors should be retained.

When deciding on the number of factors to retain from the range indicated by scree plot and parallel analyses, three key criteria were considered. First, each factor needed to be identified by at least 3 items, with standardised loading coefficients at 0.3 or greater. Second, solutions were preferred when

the number of items cross loading was minimised. Finally, solutions needed to produce theoretically coherent and interpretable factor structures. Where relevant to compare fit of similarly preferable models, various fit indices were considered.

Confirmatory Factor Analyses were then conducted with each of the aforementioned scales, to ensure the proposed factor structures suggested by the exploratory analyses were robust. Models were evaluated with respect to the degree to which they approximate the data (i.e., model fit). As there are various methods to predict model fit, often based on different metrics and to various levels of effectiveness, the range of well-respected goodness of fit indices offered by MPlus are presented (Jackson, Gillaspy, and Purc-Stephenson 2009). Fit to the data is considered adequate with values of ≤ .08 for the RMSEA (Browne and Cudeck 1993), ≤ .08 for the SRMR (Spence 1997), and ≥ .90 for the CFI and TLI (Bentler and Bonnett 1980) with values above .95 preferred (Hu and Bentler 1999). MPlus also presents WRMR, which is an experimental fit statistic. Whilst WRMR is also presented in the current thesis for completeness and to support further study on its efficacy, model fit is not judged by WRMR. Indeed, there is very little empirical evidence for its value (Hsu 2009), and Muthén recommends "I would not use it… I would ignore it" (Muthén 2010) and "I would not give it much weight" (Muthén 2013). This practice is consistent with others such as Olderbak et al. (2015). Finally, these cut-offs are evaluated in conjunction with the standardised factor loadings, as where relevant, slight violations of fit indices cutoffs may be permissible where factor loading is especially high (McNeish, An and Hancock 2018).

4.3.2 Step 1: EFA and CFA

4.3.2.1 Intelligence

Fluid Intelligence

An initial scree test and parallel analysis strongly suggested a single factor solution, consistent with the proposed structure of the measure (Condon and Revelle 2014). The single factor solution fit the data well (RMSEA = 0.051; CFI = 0.982; TLI = 0.977; SRMR = 0.063). All nine items had a significant loading above .3. In contrast, a two-factor solution appeared incoherent and two of the six items in the second factor demonstrated significant cross-loading. Thus, a single factor model was deemed most appropriate, had a Cronbach's alpha of .826, and in line with the scale design, represented Fluid Intelligence. When tested using CFA, the single-factor model achieved good fit (RMSEA = 0.051; CFI = 0.982; TLI = 0.977; WRMR = .891) with items loading on a range between .548 and .844.

Crystallised Intelligence

An initial scree test and parallel analysis strongly suggested a single factor solution, consistent with the proposed structure of the measure (Condon and Revelle 2014). The single factor solution fit the data well (RMSEA = 0.030; CFI = 0.979; TLI = 0.976; SRMR = 0.086). In contrast, a two-factor solution

appeared incoherent and three of the five items in the second factor demonstrated cross-loading. Thus, a single factor model was deemed most appropriate, had a Cronbach's alpha of .807, and in line with the scale design, represented Crystallised Intelligence. CFA confirmed the acceptability of a single factor solution, demonstrating good fit (RMSEA = 0.030; CFI = .979; TLI = .976; WRMR = .885) with all items loading above .3 on a range between .342 to .785, except item 11 (.286) which loaded slightly lower than is desirable.

Emotion Recognition

The scree plot and parallel analysis suggested a single factor may be extracted from the data. The single factor model fit the data well (RMSEA = 0.000; CFI = 1.000; TLI = 1.016; SRMR = 0.057). Consistent with Olderbak et al. (2015), the single factor model was deemed as the most appropriate solution. The data produced a Cronbach's alpha of .59, and in line with the original scale design, represented emotion recognition. The single factor model fit well when examined by CFA (RMSEA = 0.000; CFI = 1.000; TLI = 1.016; WRMR = 0.659). In total, 9 of the 10 items loaded greater than .30 (Item 36 = .259).

Emotion Management

An initial scree test and parallel analysis suggested a single factor solution, with is consistent with the proposed structure (Allen et al. 2015). The single factor solution fit the data well (RMSEA = 0.030; CFI = 0.959; TLI = 0.953; SRMR = 0.067). Sixteen of the 18 items loaded greater than .3 (Item 10 = .293; Item 12 = .266; others ranging .316 to .867) and all items had a significant loading. In contrast, a two-factor solution provided marginally better fit but yielded a second factor that was incoherent, where only two items were significantly loaded. Thus, consistent with Ferguson and Austin (2011), a single factor model was deemed most appropriate, and in line with the scale design, represented Emotion Management. When examined using CFA, item fit was sub-optimal (RMSEA = .037; CFI = .890; TLI = .875; SRMR = 0.045). Item 14 was associated with three of the six modification indices over 10 and was thus removed. Fit was still not acceptable (RMSEA = 0.033; CFI = .898; TLI = .883; SRMR = 0.044). Items 9 and 10 were associated with all three remaining modification indices, and as ten had a lower loading (STDYX = .282; R^2 = 0.079) it was removed. Fit was subsequently satisfactory (RMSEA = .027; CFI = .933; TLI = .923; SRMR = 0.040) with a Cronbach's alpha of .703, however six items loaded less than .3 (Item 02 = .218; Item 07 = .287; Item 09 = .291; Item 12 = .198; Item 15 = .190; Item 16 = .287) with the remainder loading from .300 to .544.

Emotion Understanding

An initial scree test suggested a single factor solution, which is consistent with the proposed structure (Allen et al. 2014), whilst the parallel analysis indicated two possible factors. The single-factor model fit the data well (RMSEA = 0.027; CFI = 0.948; TLI = 0.942; SRMR = 0.079). In total, 13 of the 19 items

loaded greater than .30 (ranging .339 to .775) where three items (03, 05 and 18) had a non-significant loading. In contrast, a two-factor solution provided marginally better fit (RMSEA = .018; CFI = .979; TLI = .974; SRMR = .067) but yielded a second factor that was incoherent, where only four of the six loading items loaded greater than .3, and three cross-loaded on both factors. Thus, consistent with Ferguson and Austin (2011), a single factor model was deemed most appropriate, and in line with the scale design, represented Emotion Understanding. The initial model driven by the EFA achieved good fit to the data when examined using CFA (RMSEA = 0.027; CFI = 0.948; TLI = .942; WRMR = .920). Once the three items with non-significant loadings were removed, model fit was still good (RMSEA = .029; CFI = .961; TLI = .955; WRMR = .890), with a Cronbach's alpha of .676 and item loading ranging from .343 to .775, except three items loading weakly (Item 04 = .194; Item 13 = .249; Item 16 = .256).

4.3.2.2 Personality

Big Five

Personality data modelled using CFA rarely meets conventional fit targets (Booth and Hughes 2014; Marsh et al. 2010) however item-level analyses were attempted. Both parallel analysis and scree plot indicated a six-factor solution, however this was uninterpretable despite presenting acceptable fit (RMSEA = .046; CFI = .934; TLI = .910; SRMR = .036). The five-factor EFA solution was interpretable based upon the proposed structure of the measure and Five Factor Theory of Personality, however did not fit satisfactorily (RMSEA = 0.070; CFI = 0.840; TLI = 0.794; SRMR = 0.055). Forty-two of the 44 items had a significant loading above .3 on their intended factor (ranging from .405 to .864), except items 35 and 41 (-0.020, 0.069). Several items were cross-loading, as to be expected from the nature of the constructs being captured (Bernstein and Teng 1989; Booth and Hughes 2014; Cooper and Petrides 2010). Using CFA, the five-factor structure did not meet fit requirements (RMSEA = 0.087; CFI = .696; TLI = .678; WRMR = 2.711) where six items (2, 8, 12, 37, 35, 41) had a weak loading (otherwise ranging .549 to .839). Item 43 was associated with 58 modification indices greater than 10, however once removed, fit did not appear much better (RMSEA = .088; CFI = .700; TLI = .682; WRMR = 2.652). The iterative process of removing the item with the greatest number of large modification indices did not improve fit. Removing items 21, 19, 31, 14, 2 and 37, all associated with over 40 modification indices greater than 10, failed to provide any meaningful improvement of fit (RMSEA = 0.084; CFI = .753; TLI = .735; WRMR = 2.159). This process was continued however no feasible model of the data was derived. As such, similar to the typical response to the well-reported levels of misfit within CFA analysis of personality data, a scale-scored five-factor solution will be adopted for further analyses (Booth and Hughes 2014; Marsh et al. 2010; McCrae et al. 1996).

Affect Related Traits

The scree plot suggested up to seven factors may be extracted from the Affect-related Personality data, whereby the Parallel analysis suggested five. The single factor solution had poor fit to the data (RMSEA = 0.120; CFI = 0.689; TLI = 0.666; SRMR = 0.150) however was interpretable as a single higher-order representative of Affect-related Personality. In total, 29 of the 30 items loaded greater than .30 ranging .317 to .669 (Item23 = .163). Multiple factor solutions did modestly increase fit to the data, however loading was often weaker, there was much cross-loading, and factor structure was not interpretable. For example in the two-factor solution, 5 items cross-loaded, with no reasonable interpretation of the two factors generated. The fit for a four-factor solution, consistent with the four sub-scales proposed by the original authors, still did not meet acceptable targets (RMSEA = .090; CFI = .861; TLI = .812; SRMR = .050), with an uninterpretable factor structure. Similar conclusions were drawn for the five-factor (RMSEA = .082; CFI = .893; TLI = .843; SRMR = .042), six-factor (RMSEA = .073; CFI = .924; TLI = .877; SRMR = .034), and seven-factor (RMSEA = .064; CFI = .946; TLI = .905; SRMR = .027) structures.

The TEIQue was designed to be factor analysed at the facet level to avoid the aforementioned problems associated with item-level factor analysis of personality data (Bernstein and Teng 1989; Booth and Hughes 2014; Cooper and Petrides 2010). Petrides (2009) adopted two items from each of the fifteen subscales within the original TEIQue scale to create the short-form, meaning the short-form measure represents numerous highly-related traits, each with only two indicators. Given that item-level analyses produced unsatisfactory models and fit, the current data was scale-scored as proposed: four factor scores were aggregated and loaded them upon a global Affect-related Personality factor as suggested by Petrides (2009), to acknowledge the likely factor overlapping and item cross-loading. Using CFA, fit was acceptable for three of the four indices (RMSEA = .089; CFI = .984; TLI = .951; SRMR = .023). Alternatives were sought to ensure optimum modelling. When loading all thirty items onto a single global factor, fit was problematic (RMSEA = .120; CFI = .689; TLI = .666; WRMR = 3.349). Fit was similarly poor when accounting for bloated specifics by analysing the mean of each two item pairs taken from the original 15 scales. When loading the fifteen scores upon a global Affect-related Personality factor, fit was similarly problematic (RMSEA = .137; CFI = .694; TLI = .643; SRMR = .085). As such, the scale scored four factor-solution was adopted for further analysis.

4.3.2.3 Emotion Regulation

For all Emotion Regulation scales, only one factor was possible to fulfil the minimum requirements of three items per factor. As such, a single factor solution for each Emotion Regulation strategy was calculated, consistent with scree plots and parallel analyses, see Table 4.1. Across the scales, RMSEA was often problematic, likely due to its propensity to over-reject models when degrees of freedom

are low (Kenny, Kaniskan and McCoach 2015), as was the case in the current models, however the other fit indices and high factor loadings were often indicating acceptable fit.

Table 4.1 Exploratory Factor Analysis of Emotion Regulation scales

Factor	RMSEA	CFI	TLI	SRMR	Factor Loading
Avoidance	.093	.986	.973	.029	.532 to .764
Perseverance	.200	.972	.944	.040	.681 to .858
Planning	.099	.991	.983	.025	.684 to .877
Social Support Searching	.402	.952	.904	.103	.822 to .898
Rumination	.206	.972	.944	.045	.673 to .857
Distraction	.121	.989	.978	.024	.654 to .848
Positive Re-appraisal	.228	.973	.947	.040	.747 to .838
Catastrophic Thinking	.180	.984	.968	.034	.757 to .856
Venting	.119	.993	.986	.017	.742 to .886
Substance Use	.089	1.000	.999	.005	.943 to .972

When examined using CFA, the single factor model driven by the EFAs violated fit requirements in all scales, see Table 4.2 below. As fit was not acceptable, for each scale sequentially the item associated with the greatest number of large modification indices or lowest loading item was removed and the scale was remodelled. All final factor loadings ranged from .663 to .968.

Table 4.2 Confirmatory Factor Analysis of Emotion Regulation scales

Factor	RMSEA	CFI	TLI	WRMR	Factor Loading	Cronbach's Alpha
Avoidance	.093	.986	.973	.486	.532 to .764	-
Adj (-Item 01)	.007	1.000	1.000	.168	.672 to .782	.766
Perseverance	.200	.972	.944	.870	.681 to .858	-
Adj (-Item 11)	.201	.987	.961	.614	.769 to .870	.852
Planning	.099	.991	.983	.481	.684 to .877	-
Adj (-Item 02)	.000	1.000	1.003	.025	.687 to .899	.837
Social Support Searching	.952	.952	.904	2.499	.822 to .898	-
Adj (-Item 57)	.256	.987	.961	.658	.708 to .909	.883
Rumination	.206	.972	.944	.987	.673 to .857	-
Adj (-Item 03)	.302	.972	.917	1.038	.773 to .874	.841
Distraction	.121	.989	.978	.529	.654 to .848	-
Adj (-Item 08)	.000	1.000	1.001	.102	.663 to .868	.827
Positive Re-appraisal	.228	.973	.947	.991	.747 to .838	-
Adj (-Item 49)	.092	.998	.993	.291	.742 to .860	.860
Catastrophic Thinking	.180	.984	.968	.816	.757 to .870	-
Adj (-Item 59)	.096	.997	.991	.307	.771 to .863	.849
Venting	.119	.993	.986	.420	.742 to .886	-
Adj (-Item 50)	.000	1.000	1.002	.047	.710 to .906	.862
Substance Use	.089	1.000	.999	.005	.943 to .972	-
Adj (-Item 65)	.000	1.000	1.000	.002	.946 to .968	.954

4.3.2.4 Outcomes

Well-being

Only a single factor solution could be calculated for well-being, consistent with scree test, parallel analysis, and the proposed structure of the measure (Blom et al. 2012). The single factor solution fit the data well (RMSEA = 0.192; CFI = 0.988; TLI = 0.975; SRMR = 0.036). All five items had a significant loading ranging from .774 to .934, and in line with the scale design, represented well-being. When examined using CFA, fit was not acceptable however (RMSEA = .192; CFI = .988; TLI = .975; WRMR = .870). Item 02 was implicated in three modification indices over 50, and eight indices over 10, and was thus removed. Fit was subsequently acceptable (RMSEA = .058; CFI = .999; TLI = .997; WRMR = .223) with a Cronbach's alpha of .880 and factor loadings ranging .781 to .859.

Life Satisfaction

An initial scree test and parallel analysis strongly suggested a single factor solution, consistent with the proposed structure of the measure (Atienza, Balaguer and Garcia-Merita 2003; Diener et al., 1985). The single factor solution fit the data well in three of the four indices (RMSEA = 0.116; CFI = 0.996; TLI = 0.992; SRMR = 0.023). The five items had a significant loading ranging from .694 to .948. Thus a single factor model was accepted, with a Cronbach's alpha of .900, and in line with the scale design represented Life Satisfaction. The initial model driven by the EFA did not achieve close fit in CFA (RMSEA = 0.116; CFI = .996; TLI = .992; WRMR = .471) Removal of any one item did not improve fit significantly, and each item had a significant loading (.694-.948), and thus to retain as much of the original measure as possible, the slight violation of RMSEA statistic was accepted.

Aggression

An initial scree test and parallel analysis suggested up to four factors may be identifiable within the aggression data. The four-factor solution fit the data well (RMSEA = 0.030; CFI = 0.998; TLI = 0.994; SRMR = 0.016). All twelve items had a significant loading above .3, with three items cross-loading (Items 06, 07 and 12). Only one of these cross-loadings passed the .3 threshold however, as seen in the factor loadings presented in Table 4.3.

An alternative five-factor solution was not calculable. The three-factor solution was incoherent with 9 of 12 items cross-loading, with two items (06 and 07) loading on all three factors. Similar findings were drawn for the two-factor solution, where 8 items demonstrated cross-loading. Finally, the one-factor solution had all items loading on a range between .325 to .857, however presented poor fit to the data (RMSEA = 0.203; CFI = 0.761; TLI = 0.708; SRMR = 0.129). Given the interpretability of the four-factor structure, it was deemed most appropriate to adopt. The four subscales have Cronbach's alphas of .676, .676, .712 and .841, and in line with the original scale design, represent physical aggression, verbal aggression, anger, and hostility. The four-factor model driven by the EFA did not achieve close

fit in CFA however (RMSEA = 0.118; CFI = .929; TLI = .902; WRMR = 1.371). Items 4, 5, and 6 were each associated with three modification indices over 100. As removal of one item would lead to an under-identified factor, all three items and thus factor were removed. The subsequent three-factor solution fit the data well (RMSEA = .070; CFI = .985; TLI = .977; WRMR = .749), with item loadings ranging .420 to .918.

Table 4.3 Factor Loading of Brief Aggression Questionnaire data

Item	Factor 1	Factor 2	Factor 3	Factor 4
1	**0.570***	-0.021	0.015	-0.013
2	**0.792***	-0.124	0.041	-0.016
3	**0.646***	0.135	-0.030	0.072
4	-0.038	**0.830***	-0.026	-0.072
5	-0.018	**0.752***	0.030	0.096
6	0.046	**0.515***	0.435*	0.021
7	-0.026	-0.129*	**0.495***	-0.007
8	0.091	0.039	**0.777***	-0.013
9	-0.037	-0.005	**0.909***	0.039
10	-0.060	-0.050	0.033	**0.968***
11	0.026	0.010	-0.065	**0.863***
12	0.215*	0.177*	0.034	**0.655***

Friendship Quality

An initial scree test and parallel analysis suggested a single factor solution, which is consistent with the proposed structure (Armsden and Greenberg 1987). The single-factor model fit the data well (RMSEA = 0.081; CFI = 0.999; TLI = 0.997; SRMR = 0.010). All items had acceptable loadings, ranging from .798 to .950. A two-factor solution was not calculable. Thus, a single factor model was adopted, had a Cronbach's alpha of .907, and in line with the scale design, represented Friendship Quality. The initial model driven by the EFA did not achieve perfect fit in CFA (RMSEA = 0.081; CFI = 0.999; TLI = 0.997; WRMR = 0.297) however each item had a significant loading (ranging .798 to .950). Given that minor violations of fit targets may be acceptable when loading is high (McNeish, An and Hancock 2018), and removal of any one item did not improve fit, the minor violation of RMSEA statistic was accepted to retain as much of the original measure as possible.

Job Performance

Only 287 participants of the 400 tested were employed at the time of completing the questionnaire. The scree plot and parallel analysis strongly suggested a single factor solution, consistent with the proposed theoretical structure (Bartram 2005). The single-factor model fit the data well (RMSEA = 0.117; CFI = 0.969; TLI = 0.957; SRMR = 0.042). The item loadings ranged from .706 to .829. In contrast, a two-factor solution provided marginally better fit but yielded a second factor that was incoherent,

and was identified by only two items where one fell below the .3 loading cut-off (.298) and significantly cross-loaded on both factors. Thus, a single factor model was deemed most appropriate, and in line with the scale design, represented job performance. Examined with CFA, each item had a significant loading (.706 to .829) however the model did not achieve close fit (RMSEA = 0.117; CFI = .969; TLI = .957; WRMR = 0.742). Item 5 was implicated in six modification indices over 10, and was thus removed. The subsequent model fit was still not acceptable (RMSEA = .096; CFI = .982; TLI = .973; WRMR = .580). Item 7 was implicated in three of the six modification indices above 10, and was thus removed. Fit was still not acceptable (RMSEA = .091; CFI = .987; TLI = .979; WRMR = .501). Finally, removing item 6 as it was implicated in all three modification indices over 10, the five-item model achieved good fit to the data (RMSEA = 0.051; CFI = .997; TLI = .994; WRMR = .297) had a Cronbach's alpha of .859, and each item had a significant loading (.653 to .811).

4.3.3 Step 2: CFA

Confirmatory Factor Analyses were conducted with each of the scales, using data from the remaining 430 participants, to ensure the proposed factor structures suggested by the exploratory analyses were robust. Models were evaluated with respect to the degree to which they approximate the data. The same goodness of fit indices and cut-offs are presented. Fit to the data is considered adequate with values of ≤ .08 for the RMSEA (Browne and Cudeck 1993) and SRMR where relevant (Hu and Bentler 1999), and ≥ .90 for the CFI and TLI, (Bentler and Bonnett 1980) with values above .95 preferred (Hu and Bentler 1999). Standardised factor loadings are again presented, as where relevant, slight violations of fit indices cut-offs may be permissible where factor loading is especially high (McNeish, An and Hancock 2018).

4.3.3.1 Intelligence Facets

The initial models driven by the EFAs represented acceptable fit, as seen in Table 4.4 below.

Table 4.4 Confirmatory Factor Analysis of Intelligence scales

Scale	RMSEA	CFI	TLI	WRMR	Loading
Fluid Intelligence	0.067	0.982	0.975	1.029	.598 to .872
Crystallised Intelligence	0.034	0.979	0.975	0.916	.410 to .843
Emotion Recognition	0.000	1.000	1.024	0.627	.414 to .603
Emotion Management	0.038	0.889	0.872	0.044 (SRMR)	.165 to .520
Emotion Understanding	0.020	0.981	0.979	0.819	.191 to .784

4.3.3.2 Personality and Emotion Regulation

Affect-related Personality

Testing the scale-scored model proposed in the first CFA and recommended by Petrides (2009), fit was acceptable (RMSEA = 0.000; CFI = 1.000; TLI = 1.007; SRMR = 0.005), with the four factors loading between .675 to .821.

Emotion Regulation

Model fit was acceptable in three of the ten Emotion Regulation models, see Table 4.5. Several deviations from cut-off targets were deemed permissible given the high factor loadings (McNeish, An and Hancock 2018) and low degrees of freedom which meant removal of further items was not possible (Kenny, Kaniskan and McCoach 2015).

Table 4.5 Confirmatory Factor Analysis of Emotion Regulation scales

Factor	RMSEA	CFI	TLI	WRMR	Factor Loading
Avoidance	.088	.992	.977	.358	.606 to .759
Perseverance	.087	.997	.991	.303	.716 to .824
Planning	.000	1.000	1.000	.132	.742 to .884
Social Support Searching	.344	.980	.939	1.129	.765 to .903
Rumination	.290	.963	.888	.908	.699 to .832
Distraction	.063	.998	.994	.232	.638 to .859
Positive Re-appraisal	.048	.999	.998	.174	.697 to .913
Catastrophic Thinking	.116	.994	.982	.330	.734 to .858
Venting	.123	.996	.988	.337	.741 to .890
Substance Use	.153	.999	.996	.373	.915 to .966

4.3.3.3 Outcomes

Seen in Table 4.6, fit was acceptable for aggression and job performance. For well-being, life satisfaction, friendship quality and relationship quality, the RMSEA fit cut-off was violated. Given that violations of fit targets may be acceptable when loading is high (McNeish, An and Hancock 2018), RMSEA is over-sensitive to modes with low degree of freedom (Kenny, Kaniskan and McCoach 2015), and removal of any one item did not improve fit significantly, the slight violations of RMSEA statistic were accepted to retain as much of the original measures as possible.

Table 4.6 Confirmatory Factor Analysis of outcome scales

Factor	RMSEA	CFI	TLI	WRMR	Factor Loading
Well-being	0.098	0.998	0.993	0.388	.826 to .884
Life Satisfaction	0.179	0.990	0.980	0.644	.678 to .928
Aggression	0.044	0.994	0.992	0.585	.382 to .941
Friendship Quality	0.203	0.995	0.985	0.762	.825 to .945
Job Performance	0.087	0.999	0.998	0.320	.892 to .947

4.3.4 Step 3: Path analysis and SEM

To explore the key tenets of the Integrated Model of Affect-related Individual Differences proposed (see Figure 4.3), path analysis and SEM were employed. Addressing several calls for more robust analysis (e.g. Fiori and Antonakis 2011), SEM was considered preferable to traditional regression analyses by facilitating the modelling of measurement error, thus producing more accurate parameter estimates (Marsh, Hau and Wen 2004). First, using item-level scores, Ability EI was modelled as a second-stratum factor of cognitive ability, alongside crystallised and fluid intelligence, with three sub-factors: emotion recognition, emotion understanding, and emotion management. Second, Affect-related Personality was modelled alongside the big five (both scale scored), consistent with the definition as a collection of affect-related traits.

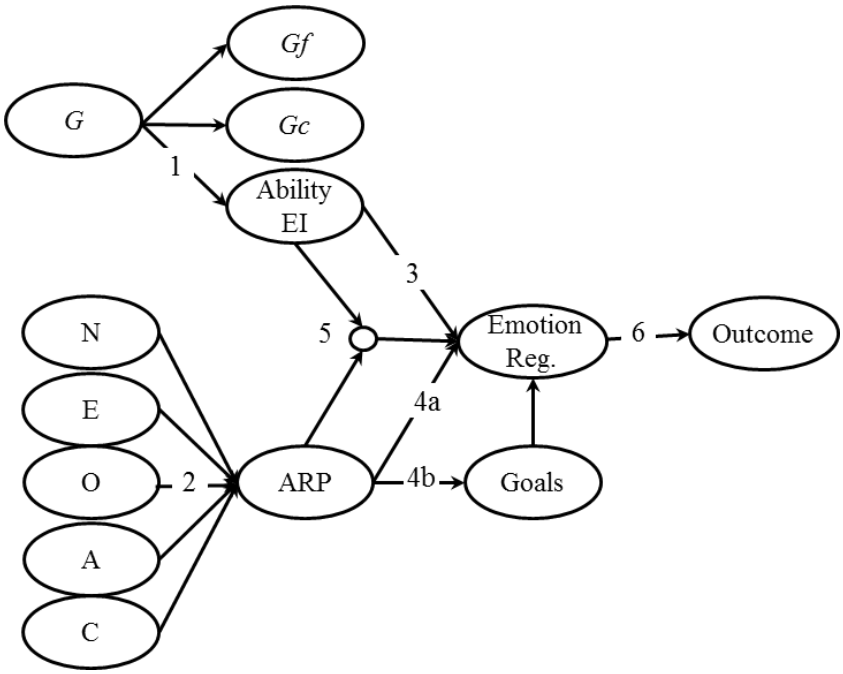

Figure 4.3 The Integrated Model of Affective Individual Differences

Pathways 3 and 4 are explored simultaneously, first through correlational analyses, and then through SEM. Having established the measurement models, in these latter analyses Affect-related Personality and Ability EI were modelled using scale scores to facilitate a more meaningful analysis of the structural model, rather than measurement model. As such, the SEM conducted used a combination of CFA-adjusted scale- (Affect-related Personality/Ability EI) and item-level (Emotion Regulation) scores, addressing each Emotion Regulation subscale sequentially. In addition to the aforementioned fit statistics, the R-squared (R^2) statistic is presented with latent variable regression analyses to represent the percentage of variance in outcome explained by the predictors. R^2 varies between 0 and 1, and greater variance explained is typically considered beneficial. Unstandardised relationships are reported as B, and standardised relationships are presented as β.

The SEM strategy for the testing of pathways 5-6, to explore the Affect-related Personality*Ability EI interaction and the relationships between Emotion Regulation and outcomes, was the same: a combination of scale (Affect-related Personality/Ability EI) and item-level (ER/outcome) scores. For models featuring interactions, log likelihood and information criteria are also provided. Whilst log-likelihood (specifically, H0 representing the log likelihood from the model ran in the analysis) and correction factor are presented in the current thesis for completeness, they are not used to evaluate model fit. Instead, Akiake (AIC), Bayesian (BIC) and Sample-Size Adjusted BIC (SSBIC) information criteria are used, whereby a smaller figure represents greater model fit. Within information criteria, the number of free parameters is also noted, representing the number of parameters estimated in the model. Once all pathways are explored separately, a holistic evaluation of the model proposed (pathways 3-6) was presented through ten example models.

4.3.4.1 Assumptions, Descriptive Statistics and Sex/Age Differences

The data set was first checked to explore the required assumptions for SEM testing (Kline 2012). Univariate outliers were explored through z-scores (see range in Table 4.7). In sum, there were very few extreme outliers, and indeed some are to be expected in large data sets (Selst and Jolicoeur 1994; Seo 2006). Univariate normality was assessed through skew and kurtosis (see Table 4.7). Many of the latent variables presented high skew/kurtosis scores (Wright and Herrington 2011), indeed deviation from normal distribution was expected for many outcomes, for example, positive skew for substance use (e.g. Thoma et al. 2011). Multivariate outliers were examined through Mahalanobis Distance, where 17 participants scores were below the acceptable threshold (.001). Finally, multicollinearity was calculated (see Table 4.7) and no meaningful multicollinearity was identified. The minor violation of assumptions was considered acceptable, and thus no data was removed, due to large sample size, use of WLSMV which is robust against distribution (Browne 1984; Muthén and Muthén 2010) and to preserve important characteristics of the data set, making use of all possible information (von Hippel 2013). Descriptive statistics for all measures are presented in Table 4.8.

Using independent t-tests, statistically significant ($p < .05$) sex differences were observed in 20 of the 29 variables. Predominantly differences replicate the existing literature e.g. women score higher than men on neuroticism and agreeableness (Schmitt et al. 2008). Some exceptions were noted however, for example the expected gender difference in Emotion Recognition was not observed (Olderbak et al. 2018), however this finding is consistent with previous reports using the same measure ($t(481) = 1.29$, $p = .020$; Olderbak et al. 2015). Similarly, age differences in all variables were examined through multiple ANOVAs. As only four participants were in the '71 years or older' category, this group was excluded from the analyses. Significant age differences were reported for 24 of the 29 variables tested. Again, findings were mostly consistent with the existing literature e.g. Neuroticism decreasing and

Agreeableness increasing over the life-course (Soto et al. 2011). As the relationships between latent variables were not hypothesised to differ by sex or age, and no age- or gender-specific processes were proposed, these are not examined further. Whilst beyond the scope of the current thesis to explore, future research should endeavour to examine, identify the scope of, and subsequently control for sex and age differences within analyses.

Table 4.7 Data assumptions

Variable	Z-scores (range)	Z scores (#>3.29)	Skew	Kurtosis	VIF
Fluid Intelligence	-1.584, 1.636	0	.918	-6.682	1.647
Crystallised Intelligence	-2.537, 1.850	0	-5.024	-3.435	2.023
Emotion Recognition	-3.590, 1.321	1	-11.447	3.729	1.515
Emotion Understanding	-3.396, 1.626	1	-10.682	3.335	2.010
Emotion Management	-3.576, 1.860	2	-8.279	1.118	1.772
Ability EI Total	-3.524, 1.825	2	12.976	6.024	-
Agreeableness	-3.234, 2.091	0	-2.376	-1.247	1.710
Extraversion	-2.567, 2.565	0	-0.035	-1.912	1.713
Neuroticism	-2.398, 2.407	0	-0.812	-2.076	3.177
TEIQue Self Control	-3.194, 2.522	0	-2.176	.800	3.039
TEIQue Well-Being	-3.231, 1.831	0	-6.376	.882	3.590
TEIQue Sociability	-3.480, 2.428	2	-0.976	.776	2.141
TEIQue Emotionality	-2.767, 2.471	0	.941	-1.347	2.201
TEIQue Total	-3.157, 2.614	0	-.082	.688	-
Avoidance	-1.886, 2.590	0	.459	-1.318	2.120
Perseverance	-2.475, 1.801	0	-5.176	.282	2.995
Planning	-2.559, 1.853	0	-4.459	-.842	3.013
Social Support Searching	-1.771, 1.904	0	-0.459	-4.994	2.613
Rumination	-2.262, 1.788	0	-3.200	-2.488	3.152
Distraction	-2.503, 1.910	0	-4.871	-0.594	2.829
Positive Re-appraisal	-2.406, 1.921	0	-3.906	-1.247	3.210
Catastrophic Thinking	-1.731, 2.018	0	.471	-4.594	3.256
Venting	-1.881, 1.929	0	-.141	-4.806	2.620
Substance Use	-0.826, 2.321	0	10.588	-3.053	1.415
Well-being	-2.654, 2.311	0	0.541	-2.735	1.963
Life Satisfaction	-2.226, 1.899	0	-4.129	3.776	2.219
Aggression	-1.892, 3.020	0	4.153	-2.471	1.861
Friendship Quality	-3.459, 1.251	10	-10.776	5.818	1.384
Job Performance	-3.663, 1.683	4	-5.860	3.090	1.789

Table 4.8 Descriptive statistics

		Total	**Female**	**Male**		**Age 18-30**	**Age 31-45**	**Age 46-70**	
Variable	α	Mean SD	Mean SD	Mean SD	Gender Difference T-test	Mean SD	Mean SD	Mean SD	Age Difference ANOVA
Fluid Intelligence	.826	4.427 (2.795)	4.281 (2.737)	4.723 (2.892)	$t(828) = 2.148$, $p = .032$	4.473 (2.844)	3.824 (2.747)	4.847 (2.693)	$F(2, 823) = 7.780$, $p < .001$, $\eta p^2 = .019$
Crystallised Intelligence	.807	9.253 (3.647)	8.800 (3.538)	10.172 (3.699)	$t(828) = -5.172$, $p < .001$	9.228 (3.442)	8.603 (4.032)	9.795 (3.549)	$F(2, 823) = 6.117$, $p = .002$, $\eta p^2 = .015$
Emotion Recognition	.590	7.311 (2.036)	7.387 (2.010)	7.157 (2.086)	$t(828) = 1.530$, $p = .126$	7.419 (2.061)	7.152 (2.233)	7.295 (1.823)	$F(2, 823) = 1.141$, $p = .320$, $\eta p^2 = .003$
Emotion Understanding	.676	10.143 (2.987)	10.306 (2.889)	9.814 (3.157)	$t(828) = 2.236$, $p = .026$	10.204 (3.152)	9.858 (3.223)	10.299 (2.527)	$F(2, 823) = 1.347$, $p = .261$, $\eta p^2 = .003$
Emotion Management	.703	8.911 (2.422)	9.086 (2.319)	8.557 (2.586)	$t(828) = 2.971$, $p = .003$	9.206 (2.215)	8.408 (2.726)	8.899 (2.424)	$F(2, 823) = 7.220$, $p = .001$, $\eta p^2 = .017$
Ability EI Total	n/a	0.000 (2.450)	.164 (2.356)	-.332 (2.604)	$t(497.730) = 2.660$, $p = .008$	.195 (2.497)	-.381 (2.745)	.039 (2.091)	$F(2, 823) = 3.677$, $p = .026$, $\eta p^2 = .009$
Agreeableness	.770	33.218 (5.634)	33.619 (5.731)	32.405 (5.349)	$t(828) = 2.932$, $p = .003$	32.902 (5.587)	32.677 (6.008)	34.083 (5.285)	$F(2, 823) = 4.559$, $p = .011$, $\eta p^2 = .011$
Extraversion	.842	24.007 (6.236)	24.099 (6.238)	23.821 (6.240)	$t(828) = .603$, $p = .547$	24.147 (6.062)	23.750 (6.172)	23.925 (6.451)	$F(2, 823) = .282$, $p = .754$, $\eta p^2 = .001$
Neuroticism	.851	23.972 (6.236)	25.182 (6.482)	21.522 (6.345)	$t(828) = 7.701$, $p < .001$	25.704 (6.317)	24.064 (6.260)	21.490 (6.655)	$F(2, 823) = 32.420$, $p < .001$, $\eta p^2 = .073$
TEIQue Self Control	.664	26.000 (5.948)	25.192 (5.989)	27.639 (5.522)	$t(828) = -5.676$, $p < .001$	24.761 (6.036)	25.760 (5.747)	27.925 (5.484)	$F(2, 823) = 22.560$, $p < .001$, $\eta p^2 = .052$
TEIQue Well-Being	.814	29.702 (6.716)	29.603 (6.989)	29.905 (6.133)	$t(611.161) = -.638$, $p = .524$	29.329 (7.171)	28.647 (6.517)	30.964 (5.939)	$F(2, 823) = 7.706$, $p < .001$, $\eta p^2 = .018$
TEIQue Sociability	.726	27.207 (6.093)	26.826 (6.125)	27.982 (5.965)	$t(828) = -2.579$, $p = .010$	27.563 (6.146)	25.853 (5.917)	27.752 (6.024)	$F(2, 823) = 6.768$, $p = .001$, $\eta p^2 = .016$
TEIQue Emotionality	.663	37.602 (7.445)	38.237 (7.527)	36.314 (7.116)	$t(828) = 3.524$, $p < .001$	37.457 (7.498)	36.951 (7.215)	38.307 (7.514)	$F(2, 823) = 1.994$, $p = .137$, $\eta p^2 = .005$

TEIQue Total	.894	139.486 (23.911)	138.854 (24.403)	140.766 (22.871)	$t(828) = -1.083$, $p = .279$	137.658 (24.283)	136.078 (22.737)	144.563 (23.540)	$F(2, 823) = 9.039$, $p < .001$, $\eta p^2 = .021$
Avoidance	.766	14.112 (5.362)	14.146 (5.212)	14.044 (5.664)	$t(828) = .257$, $p = .797$	14.655 (5.087)	14.765 (5.605)	12.874 (5.353)	$F(2, 823) = 10.397$, $p < .001$, $\eta p^2 = .025$
Perseverance	.852	17.892 (5.613)	18.113 (5.571)	17.442 (5.680)	$t(828) = 1.623$, $p = .105$	19.049 (5.210)	17.402 (5.642)	16.618 (5.859)	$F(2, 823) = 15.629$, $p < .001$, $\eta p^2 = .037$
Planning	.837	17.918 (5.440)	18.036 (5.335)	17.679 (5.650)	$t(828) = .889$, $p = .374$	18.440 (5.200)	17.632 (5.525)	17.362 (5.661)	$F(2, 823) = 3.318$, $p = .037$, $\eta p^2 = .008$
Social Support Searching	.883	15.568 (6.529)	16.419 (6.458)	13.839 (6.339)	$t(828) = 5.445$, $p < .001$	16.579 (6.515)	15.995 (6.493)	13. 776 (6.177)	$F(2, 823) = 14.972$, $p < .001$, $\eta p^2 = .035$
Rumination	.841	17.405 (5.926)	17.871 (5.860)	16.460 (5.959)	$t(828) = 3.243$, $p = .001$	18.813 (5.446)	17.264 (6.050)	15.480 (5.961)	$F(2, 823) = 25.225$, $p < .001$, $\eta p^2 = .058$
Distraction	.827	17.613 (5.439)	17.932 (5.389)	16.967 (5.492)	$t(828) = 2.409$, $p = .016$	18.459 (5.252)	17.123 (5.371)	16.772 (5.620)	$F(2, 823) = 8.454$, $p < .001$, $\eta p^2 = .020$
Positive Re-appraisal	.860	17.346 (5.547)	17.648 (5.655)	16.734 (5.277)	$t(578.355) = 2.291$, $p = .022$	17.995 (5.294)	17.064 (5.874)	16.598 (5.578)	$F(2, 823) = 5.117$, $p = .006$, $\eta p^2 = .012$
Catastrophic Thinking	.849	15.082 (6.401)	15.685 (6.214)	13.858 (6.607)	$t(828) = 3.901$, $p < .001$	16.552 (6.031)	15.373 (6.494)	12.780 (6.212)	$F(2, 823) = 28.042$, $p < .001$, $\eta p^2 = .064$
Venting	.862	15.848 (6.299)	16.725 (6.215)	14.069 (6.102)	$t(828) = 5.823$, $p < .001$	16.432 (6.386)	16.696 (6.171)	14.315 (5.958)	$F(2, 823) = 11.291$, $p < .001$, $\eta p^2 = .027$
Substance Use	.954	10.301 (7.624)	9.853 (7.495)	11.212 (7.814)	$t(828) = -2.422$, $p = .016$	10.571 (7.820)	11.191 (7.826)	9.276 (7.095)	$F(2, 823) = 3.932$, $p = .020$, $\eta p^2 = .009$
Well-being	.880	12.829 (4.833)	12.448 (4.828)	13.602 (4.760)	$t(828) = -3.254$, $p = .001$	11.160 (4.451)	13.711 (5.079)	14.461 (4.366)	$F(2, 823) = 44.146$, $p < .001$, $\eta p^2 = .097$
Life Satisfaction	.900	21.192 (7.273)	21.408 (7.262)	20.752 (7.289)	$t(828) = 1.223$, $p = .222$	21.620 (7.271)	20.529 (7.319)	20.957 (7.172)	$F(2, 823) = 1.608$, $p = .201$, $\eta p^2 = .004$
Aggression	.790	22.094 (6.922)	22.065 (6.836)	22.153 (7.107)	$t(828) = -.173$, $p = .863$	23.413 (6.511)	23.191 (7.101)	19.406 (6.572)	$F(2, 823) = 30.490$, $p < .001$, $\eta p^2 = .069$
Friendship Quality	.907	15.751 (3.397)	16.032 (3.390)	15.179 (3.345)	$t(828) = 3.426$, $p = .001$	16.315 (3.259)	15.211 (3.522)	15.347 (3.392)	$F(2, 823) = 9.628$, $p < .001$, $\eta p^2 = .023$
Job Performance	.858	25.521 (5.602)	25.158 (5.651)	26.170 (5.467)	$t(589) = -2.111$, $p = .035$	25.055 (5.824)	25.388 (5.603)	25.896 (5.466)	$F(2, 588) = 1.117$, $p = .328$, $\eta p^2 = .004$

4.3.4.2 Pathway 1

To assess the feasibility of pathway 1, Ability EI was modelled as a second-stratum factor of 'g', alongside fluid and crystallised intelligence. Ability EI was loaded by three sub-facets: perception, understanding, and management. A similar variant of this structure was previously explored using the MSCEIT Ability EI measure (Mayer, Salovey and Caruso 2002), and when compared to various other unidimensional, hierarchical, and bifactor models, previously produced preferable fit using SEM (MacCann et al. 2014). Using item-level analyses for all variables, the model explored produced good fit to the data (RMSEA = 0.017; CFI = .943; TLI = .941; WRMR = .975), with Ability EI loading onto g with a similar weighting to that of fluid intelligence (see Figure 4.4).

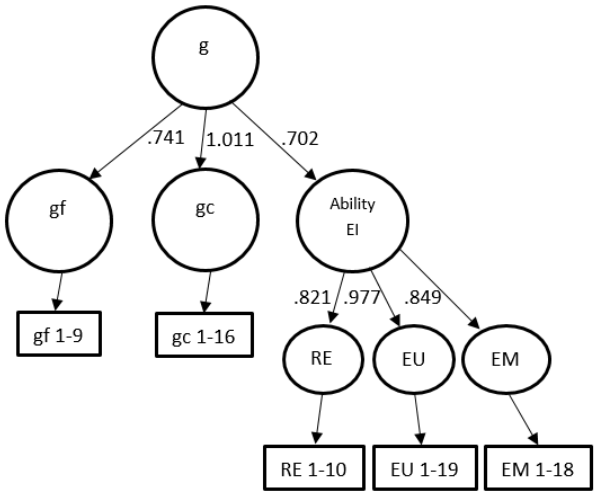

Figure 4.4 Ability EI modelled as a second-stratum factor of Intelligence; gf = fluid intelligence; gc = crystallised intelligence; RE = Emotion Recognition; EU = Emotion Understanding; EM = Emotion Management

4.3.4.3 Pathway 2

To address pathway 2, Affect-related Personality was modelled as a collection of affect-related traits. A latent total Affect-related Personality score was modelled using scale-scores of the four TEIQue subfacets. As neuroticism, extraversion, and agreeableness are the most commonly related domains, these were modelled as the basis of the TEIQue total latent variable. Fit was poor (RMSEA = .263, CFI = .718, TLI = .538; SRMR = .085). Upon inspection of the modification indices, additional pathways were needed for the relationships between personality and the TEIQue subfacets. Based upon the facet level analyses of Marjanović and Dimitrijević (2014) and subfacet-level analysis of Perez-Gonzalez and Sanchez-Ruiz (2014) and Petrides, Pita and Kokkinaki (2007), eight additional parameters were modelled between personality and the TEIQue facets (see Figure 4.5 below). Once added, model fit was excellent (RMSEA = 0.000; CFI = 1.000; TLI = 1.003; SRMR = 0.005). A third model was ran without the Affect-related Personality total, as a total score from diverse components could be

deemed theoretically problematic, however fit was poor (RMSEA = .278; CFI = .885; TLI = .482; SRMR = .115).

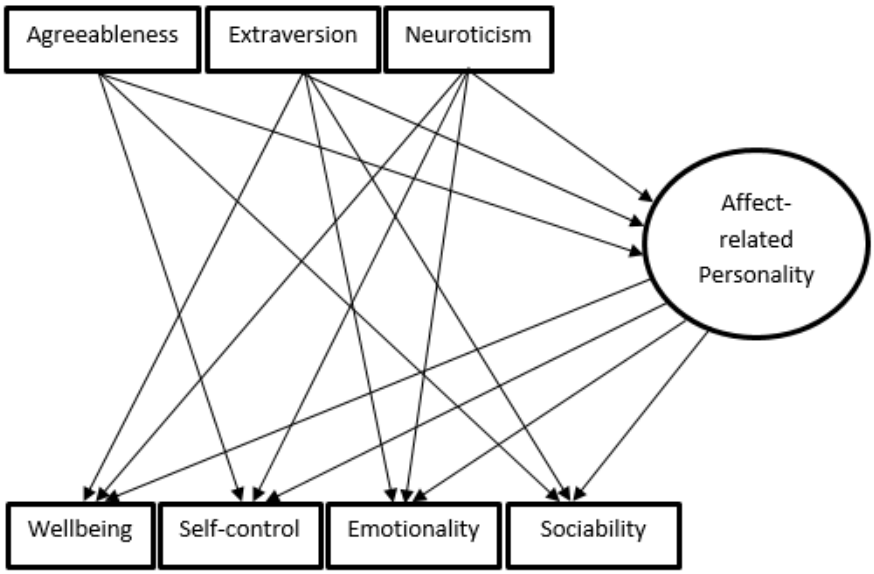

Figure 4.5 Affect-related Personality modelled as Agreeableness, Extraversion, and Neuroticism

4.3.4.4 Pathways 3 and 4

All individual difference variables captured were correlated together to examine patterns of relationships between Emotion Regulation strategies and the various personality and cognitive ability components (see Table 4.9). Of primary importance, correlations between the three conceptualisations of EI appeared modest, supporting conclusions that they likely represent distinct but related constructs. For example, the correlation between Ability EI and Affect-related Personality (r = .185) was weak.

Supporting pathway 3 of the Integrated Model of Affect-related Individual Differences proposed, 60% of relationships between Ability EI and Emotion Regulation were statistically significant. Similarly, and in support of pathway 4, 80% of the relationships between Affect-related Personality and Emotion Regulation were significant. These results are somewhat lower than the 86% and 95% of relationships reported meta-analytically by Peña-Sarrionandia, Mikolajczak and Gross (2015). Where there is available data to examine, many of the specific correlation coefficients are comparable to those reported within the extant literature. For example, the relationship between avoidance and Ability EI, -.202 in the current study, was reported as -.21 by MacCann et al. (2011). Similarly, the relationship between venting and Affect-related Personality was .043 in the current study and reported as .05 by Bastian, Burns and Nettelbeck (2005). Noting the presence of exceptions to this general trend is also important however, as some relationships were of a substantially different magnitude. For example, the relationship between Social Support Searching and Affect-related Personality reported here (r = -

.029), has previously ranged from .07 (Shah and Thingujam 2008) to .32 (Goldenberg, Matheson and Mantler 2006). In general, the majority of Emotion Regulation strategies modestly correlated with Affect-related Personality, and are consistent with their theoretical role in driving Emotion Regulation (Compas, Connor-Smith and Jaser 2004) and the direction of relationships expected from their typical 'adaptive' or 'maladaptive' nature – positive and negative respectively. In contrast, fewer Emotion Regulation strategies were linked with Ability EI, and the general trend of findings highlighted stronger relationships where the Emotion Regulation strategy is typically highly maladaptive (i.e. avoidance, venting, and substance use; Davis 2013).

Table 4.9 Correlation coefficients

	IQ	**O**	**C**	**E**	**A**	**N**	**Affect-related Personality**	**Ability EI**
Avoidance	-.177**	.005	-.280**	-.083*	-.170**	.307**	-.374**	-.199**
Perseverance	.049	.339**	.123**	.250**	.080*	.029	.274**	.087*
Planning	.098**	.336**	.234**	.257**	.113**	-.055	.344**	.085*
Social Support Searching	-.115**	.118**	-.029	.172**	.022	.285**	-.029	-.066
Rumination	-.051	.175**	-.192**	-.062	-.186**	.472**	-.305**	.026
Distraction	.005	.276**	.069*	.205**	.117**	.019	.228**	.020
Positive Re-Appraisal	-.029	.283**	.133**	.292**	.192**	-.086*	.359**	-.025
Catastrophic Thinking	-.161**	.071*	-.295**	-.083*	-.231**	.559**	-.477**	-.085*
Venting	-.167**	.115**	.028	.187**	-.005	.249**	.043	-.113**
Substance Use	-.197**	.091**	-.241**	.078*	-.177**	.189**	-.248**	-.242**

O = Openness; C = Conscientiousness; E = Extraversion; A = Agreeableness; N = Neuroticism;

* = $p < .05$; ** = $p < .01$

Further testing the nature of pathways 3 and 4 by acknowledging shared variance, the relationships between Ability EI/Affect-related Personality and Emotion Regulation were modelled simultaneously using SEM. Ten latent variable regressions were conducted. Here, Ability EI and Affect-related Personality were modelled as latent predictor variables, represented by three and four facets respectively. Each Emotion Regulation strategy was modelled consecutively as the criterion variable, using item-level scores. The results, reported in Table 4.10, suggest that model fit was generally good and that Affect-related Personality was significantly related to nine of the ten Emotion Regulation strategies captured. As to be expected from the weak relationships noted in the correlation matrix above (Table 4.9), Ability EI was only significantly related to avoidance, positive re-appraisal, venting,

and substance use. Thus for these correlational and regression analyses, in sum, 68% of the relationships identified are supportive of pathways 3 and 4 proposed.

Table 4.10 Modelling Ability EI and Affect-related Personality as predictors of Emotion Regulation

ER Strategy	β Ability EI -> Emotion Regulation	β Affect-related Personality -> Emotion Regulation	RMSEA	CFI	TLI	WRMR	R^2
Avoidance	-.169*	-.440*	.071	.943	.924	1.194	.256
Perseverance	.024	.345*	.070	.965	.954	1.193	.124
Planning	.011	.424*	.064	.969	.959	1.112	.182
Social Support Searching	-.073	-.043	.129	.941	.920	2.292	.009
Rumination	.121	-.416*	.119	.904	.871	2.025	.166
Distraction	-.054	.288*	.081	.947	.929	1.403	.079
Positive Re-appraisal	-.153*	.475*	.058	.981	.975	1.052	.218
Catastrophic Thinking	-.022	-.609*	.084	.953	.937	1.385	.366
Venting	-.157*	.083*	.108	.936	.915	1.920	.026
Substance Use	-.229*	-.255*	.068	.996	.994	1.128	.144

* = $p < .05$;

To determine the relevance of affect-specific individual differences, rather than cognitive ability or personality more broadly, the previous models were re-ran with IQ, neuroticism, extraversion and agreeableness. These four variables were tested simultaneously but due to the issues with item-level analysis of personality data, were captured through scale scores. Seen below in Table 4.11, all Emotion Regulation strategies captured were related to at least one component of personality. Consistent with the definition of Affect-related Personality as a collection of affect-related traits, the pattern of relationships reported with Affect-related Personality were not similar to any one of the three personality traits modelled.

IQ was related to 70% of the Emotion Regulation strategies captured, with a similar trend of stronger relationships for Emotion Regulation strategies typically considered maladaptive. Six of the ten relationships reported with IQ followed a similar pattern to those reported above in Table 4.10, with Ability EI typically correlating with Emotion Regulation to a similar or greater extent than IQ. There were some theoretically-divergent results however, whereby positive-reappraisal was negatively predicted by Ability EI but not IQ, and perseverance, planning and catastrophic thinking were predicted by IQ but not Ability EI.

Table 4.11 Modelling Personality and Intelligence as predictors of Emotion Regulation

ER Strategy	β E	β N	β A	β IQ	RMSEA	CFI	TLI	WRMR	R^2
	-> Emotion Regulation								
Avoidance	-.007	.317*	-.069	-.164*	.057	.980	.968	.837	.158
Perseverance	.305*	.140*	.082*	.082*	.027	.998	.997	.451	.100
Planning	.291*	.050	.088*	.126*	.048	.993	.989	.653	.105
Social Support Searching	.273*	.423*	.127*	-.074*	.110	.981	.971	1.217	.193
Rumination	.085*	.517*	-.034	.007	.121	.955	.929	1.497	.262
Distraction	.238*	.141*	.134*	.012	.070	.985	.976	.854	.074
Positive Re-appraisal	.293*	.048	.182*	-.031	.050	.995	.992	.649	.128
Catastrophic Thinking	.084*	.603*	-.046	-.115*	.045	.992	.988	.680	.388
Venting	.278*	.371*	.094*	-.127*	.046	.995	.992	.608	.179
Substance Use	.154*	.191*	-.142*	-.172*	.055	.999	.998	.432	.118

E = Extraversion; N = Neuroticism; A = Agreeableness; * = $p < .05$;

The consistency in strength of relationships reported across analyses, for both personality and intelligence components, suggest that the broader measures may currently be as good, or potentially better, predictors of Emotion Regulation than the measures adopted to capture Ability EI and Affect-related Personality in the current study. Such a conclusion is not especially problematic however, given that they have received more comprehensive validation and capture theoretically salient content (cognitive abilities or personality traits) and thus are supporting pathways 3 and 4 in highlighting the various trait and ability predictors of Emotion Regulation.

4.3.4.5 Pathway 5

Pathway 5 representing the interaction between Ability EI and Affect-related Personality, and the subsequent relationship to Emotion Regulation, was next considered. Interaction terms were added to the models used to explore pathway 4, using monte carlo interaction terms to facilitate timely analysis. As can be seen from Table 4.12 below, the interaction between Ability EI and Affect-related Personality was a significant predictor of catastrophic thinking only. This effect could be attributed to the size of relationship between Affect-related Personality and catastrophic thinking identified throughout the previous analyses, and thus the current findings provide little support for the interaction pathway proposed.

Table 4.12 Modelling Ability EI, Affect-related Personality, and the Ability EI*Affect-related Personality interaction as predictors of Emotion Regulation

ER Strategy	B Ability EI	B Affect-related Personality	B Ability EI* Affect-related Personality	Log Likelihood	Information Criteria (Free parameters = 53)
	-> Emotion Regulation				
Avoidance	-.277*	-1.050*	-.107	H0 = -15308.688 Correction Factor = 1.084	AIC = 30723.377 BIC = 309973.613 SSBIC = 30805.303
Perseverance	.013	.929*	.055	H0 = -14974.171 Correction Factor = 1.087	AIC = 30054.343 BIC = 30304.578 SSBIC = 30136.269
Planning	.006	.883*	.021	H0 = -.14972.824 Correction Factor = 1.082	AIC = 30051.648 BIC = 30301.884 SSBIC = 30133.574
Social Support Search	-.177	-.173	.008	H0 = -15050.394 Correction Factor = 1.099	AIC = 30206.789 BIC = 30457.024 SSBIC = 30288.715
Rumination	-.059	-.965*	-.178	H0 = -15174.790 Correction Factor = 1.105	AIC = 30455.580 BIC = 30705.816 SSBIC = 30537.507
Distraction	-.113	.665*	-.116	H0 = -15128.340 Correction Factor = 1.096	AIC = 30362.680 BIC = 30612.916 SSBIC = 30444.606
Positive Re-appraisal	-.222*	1.088*	-.056	H0 = -14897.958 Correction Factor = 1.097	AIC = 29901.916 BIC = 30152.152 SSBIC = 29983.842
Catastrophic Thinking	-.160	-1.515*	-.232*	H0 = -15227.656 Correction Factor = 1.121	AIC = 30561.313 BIC = 30811.548 SSBIC = 30643.239
Venting	-.229*	.216	.032	H0 = 15223.742 Correction Factor = 1.085	AIC = 30553.485 BIC = 30803.720 SSBIC = 30635.411
Substance Use	-.903*	-1.092*	-.250	H0 = -13181.563 Correction Factor = 1.189	AIC = 26469.125 BIC = 26719.361 SSBIC = 26551.052

* = $p < .05$;

4.3.4.6 Pathway 6

To evidence the utility of the Integrated Model of Affect-related Individual Differences, the relationship between Emotion Regulation and various outcomes were explored. To test pathway 6, two Emotion Regulation strategies were modelled together to predict each outcome captured, with each variable captured using item-level analyses. The two Emotion Regulation strategies presented were chosen based upon the extant literature discussed within the introduction (see 4.1.2). As noted below in Table 4.13, all relationships were significant as hypothesised, with the single exception of the relationship between social support searching and well-being.

Table 4.13 Modelling Emotion Regulation strategies as predictors of outcomes

Outcome	RMSEA	CFI	TLI	WRMR	*β* Emotion Regulation -> outcome	R^2
Well-being	.081	.979	.973	1.256	Avoidance = -.131, *p* = .002; Social Support Searching = .072, *p* = .064;	.014
Life Satisfaction	.091	.979	.973	1.466	Social Support Searching = .335, *p* = .000; Rumination = -.404, *p* = .000;	.132
Aggressive Behaviour	.080	.984	.981	1.655	Rumination = .488, *p* = .000; Substance Use = .337, *p* = .000;	.485
Friendship Quality	.089	.983	.978	1.369	Social Support Searching = .144, *p* = .003; Positive Re-Appraisal = .321, *p* = .000;	.161
Job Performance	.085	.953	.941	1.468	Avoidance = -.305, *p* = .000; Planning = .615, *p* = .000;	.345

4.3.4.7 Holistic Model Evaluation (Pathways 3-6)

To provide a less fragmented evaluation of the model proposed, pathways 3 to 6 were examined concurrently. Ten models were explored, focussing sequentially upon each of the ten relationships between Emotion Regulation and outcomes examined above. As no interaction effects were captured for the Emotion Regulation strategies under examination, pathway 5 was not examined. Direct relationships between Ability EI/Affect-related Personality and Emotion Regulation were added to minimise large modification indices and to acknowledge that the Emotion Regulation strategy captured only represents one of many possible contributing strategies. A combination of scale-score (Affect-related Personality /Ability EI) and item-level (ER/outcome) analyses were adopted. Analyses involving the aggressive behaviour outcome used a scale-scored aggressive behaviour score due to modelling issues with hierarchical item-level analysis of this outcome. A diagrammatic example of the full design of the model is presented in Figure 4.6, which presents the results relating to friendship quality and positive re-appraisal.

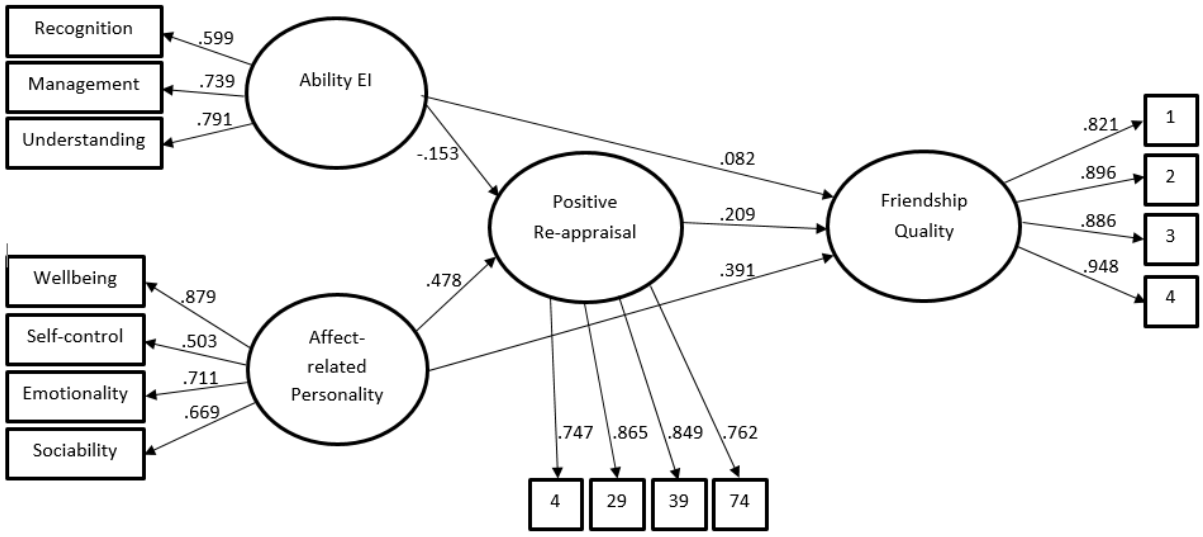

Figure 4.6 Example of holistic model

As can be seen in Table 4.14 below, and consistent with the individual analyses reported above, five of the ten tested models provided support for all three of the explored pathways proposed by the Integrated Model of Affect-related Individual Differences. Nine of the ten models evidenced at least one significant relationship for pathway 3, 4, or 6, providing partial support for the Integrated Model of Affect-related Individual Differences. The only model providing no support for the model explored social support searching and well-being, and these findings replicated the consistently non-significant relationships for these variables presented above. Thus, in sum, the results provide modest support for the central tenets of the Integrated Model of Affect-related Individual Differences.

4.4 Discussion

The current study aimed to explore the proposed Integrated Model of Affect-related Individual Differences using a combination of factor analytic and SEM models estimated using data collected through an extensive questionnaire battery. This chapter adopted the three conceptualisations of EI proposed in Chapter 2 and systematically studied each pathway proposed by the Integrated Model of Affect-related Individual Differences in Chapter 3. Following the holistic examination of the theory proposed, this discussion now aims to review the findings in context of the literature adopted to construct the model. The current discussion aims to determine whether the Integrated Model of Affect-related Individual Differences proposed presents a useful structure to guide further exploration and theoretical development in the domain of affect-related individual differences.

4.4.1 Key findings

Before relationships between constructs were examined, the measures adopted underwent EFA and CFA analyses with 400 randomly selected participants, then CFA using the remainder of the sample, to determine factor structure. Whilst the factor structures were not the main focus for the current study, EI measurement has been considered problematic historically, and many of the measures adopted were adapted or fairly recently developed and thus psychometric examination was considered key to providing the most accurate estimates of relationships possible.

Table 4.14 Modelling the full Integrated Model of Affect-related Individual Differences

ER strategy	Outcome	β Affect-related Personality -> Emotion Regulation	β Ability EI -> Emotion Regulation	β Emotion Regulation -> outcome	β Affect-related Personality -> outcome	β Ability EI -> outcome	Fit Statistics	R^2
Avoidance	Well-being	-.427*	-.178*	.127*	.698*	-.347*	RMSEA = .076, CFI = .947; TLI = .934; WRMR = 1.456;	.462
Social Support Searching	Well-being	-.052	-.071	.024	.641*	-.363*	RMSEA = .107; CFI = .939; TLI = .924; WRMR = 2.024;	.448
Social Support Searching	Life Satisfaction	-.034*	-.078	.135*	.682*	-.231*	RMSEA = .100; CFI = .956; TLI = .946; WRMR = 1.946;	.471
Rumination	Life Satisfaction	-.390*	-.108*	.037	.696*	-.248*	RMSEA = .096; CFI = .950; TLI = .939; WRMR = 1.849;	.459
Rumination	Aggression	-.423*	.120*	.365*	-.348*	-.161*	RMSEA = .136; CFI = .769; TLI = .732; WRMR = 3.188;	.402
Substance Use	Aggression	-.266*	-.225*	.288*	-.419*	-.055	RMSEA = .118; CFI = .946; TLI = .938; WRMR = 2.783;	.357
Social Support Searching	Friendship Quality	-.012	-.077	.293*	.494*	.071	RMSEA = .103; CFI = .959; TLI = .948; WRMR = 1.995;	.339
Positive Re-appraisal	Friendship Quality	.478*	-.153*	.209*	.391*	.082*	RMSEA = .057; CFI = .985; TLI = .981; WRMR = 1.108;	.288
Avoidance	Job Performance	-.431*	-.173*	.244*	.779*	-.045	RMSEA = .066; CFI = .941; TLI = .927; WRMR = 1.299;	.480
Planning	Job Performance	.425*	.013	.287*	.550*	-.088	RMSEA = .056; CFI = .967; TLI = .959; WRMR = 1.104;	.501

Three of the five cognitive ability measures required no alteration and formed consistent factors as reported within the literature. Personality measurement was somewhat more problematic however, with no item-level models achieving desired fit indices targets or presenting interpretable factor structures. Items within both BFI and TEIQue personality measures showed many cross-loadings, suggesting that items are multidimensional or alternative factor structures may be necessary. This is consistent with the existing literature which claims sub-optimal personality measurement quality as problematic for meeting fit indices cut-off targets (Booth and Hughes 2014; Marsh et al. 2010). As a result, consistent with typical practice within personality research, subsequent analyses including personality adopted scale-scores to ensure interpretable findings. Whilst the use of scale-scores is normally sub-optimal, this practice is common for personality and in context of the substantive base of research which has validated and evidenced the utility of the BFI and TEIQue measures, was considered an acceptable compromise. Whilst the results surrounding Affect-related Personality should be interpreted with slight caution on this basis, future works should prioritise the development of psychometrically-superior measures, with a comprehensive body of evidence for their accuracy and appropriateness (see Hughes 2017, for a valuable framework to structure such works).

Six of the ten Emotion Regulation strategies captured were adaptations of existing measures, and four were custom-designed based on theoretical definitions of the Emotion Regulation strategies. Development or adaption of measures is often problematic as it can change the constructs captured or psychometric properties of the data the measure produces, but this was deemed necessary given the inconsistencies in theory, item content, and response format of existing measures. As such, the design and adaption of new Emotion Regulation items enabled greater consistency surrounding the definition, theoretical stage, and specific behavioural or cognitive focus of each Emotion Regulation strategy captured. Upon analyses most data conformed to unidimensional structures with high factor loadings, however all ten scales required modest changes to present satisfactory fit. In future, new or adjusted measures should be fully validated before being applied to provide more reliable and accurate estimates (Miners, Côté and Lievens 2018). Again, the accuracy and appropriateness frameworks by Hughes (2017) is a useful resource to support comprehensive evaluation of validity. Across all EFA and CFA analyses of the EI-related data, robust factor structures were identified for further analyses and in the most part, very small changes were required to ensure most fit indices targets were satisfied.

The first pathway proposed by the Integrated Model of Affect-related Individual Differences posited a relationship between the global cognitive ability (‘g’) and Ability EI. Replicating MacCann et al.

(2014), Ability EI, formed from three sub-facets: emotion recognition, emotion understanding and emotion management, was successfully modelled as a second-stratum factor of cognitive ability. Fit was above the minimum indices standards, and Ability EI loaded upon 'g' to a comparable weight to that of fluid intelligence. Beyond simply replicating the findings of MacCann et al. (2014), the current findings are a meaningful contribution to the field. The current study had a larger sample of participants and used different measures for all intelligence and Ability EI facets captured. Given the intimate links between the MSCEIT (used by MacCann et al. 2014) and the development of Ability EI theory, the replication of these findings using alternative measures provides crucial evidence that such findings do not represent test effects. The validation of Ability EI as a robust second stratum factor of intelligence, separate to fluid or crystallised intelligence, that can be confidently contextualised within intelligence frameworks directly replicates MacCann et al. (2014). Together, they provide convincing support for contextualising Ability EI as a sub-factor of general cognitive ability and thus for pathway 1 of the Integrated Model of Affect-related Individual Differences.

The second pathway of the Integrated Model of Affect-related Individual Differences proposed a relationship between Affect-related Personality and extraversion, neuroticism, and agreeableness. Defining Affect-related Personality as a compound construct of affect-related traits, such pathways were expected as Affect-related Personality would likely encompass the affective components of the aforementioned traits. When modelled to Affect-related Personality and the four sub-facets in accordance with Marjanović and Dimitrijević (2014), Perez-Gonzalez and Sanchez-Ruiz (2014) and Petrides, Pita and Kokkinaki (2007), fit was excellent. Such findings suggest that the TEIQue captures content domain heavily saturated by personality, however the quality of measures obfuscates concrete conclusions on the exact nature of the relationship. In sum, the current data suggests Affect-related Personality is heavily entwined with personality, especially neuroticism, in support of pathway 2 of the Integrated Model of Affect-related Individual Differences.

The third pathway of the Integrated Model of Affect-related Individual Differences proposed a relationship between Ability EI and Emotion Regulation. Based upon the meta-analysis of Peña-Sarrionandia, Mikolajczak and Gross (2015) Ability EI was expected to relate to roughly 86% of Emotion Regulation strategies. Findings of the current study fell below this, with 60% correlating significantly. This figure dropped to 40% when Affect-related Personality was modelled alongside Ability EI as predictors of Emotion Regulation, however there has been little concurrent examinations of both EI perspectives to determine the extent to which this was to be expected. The pattern of relationships between Ability EI, IQ, and Emotion Regulation were occasionally unexpected. Theoretically, Ability EI and other cognitive abilities are likely to be associated with the same outcomes as they are intimately

related by ‘g’. Similarly, Ability EI would be expected to be more strongly related to Emotion Regulation than IQ, as it represents more affect-related cognitive abilities. However, this pattern of relationships was reflected in only six of the ten Emotion Regulation strategies tested. For three of the four strategies violating this assumption (perseverance, planning and catastrophic thinking), IQ was a significant predictor whereby Ability EI was not. Considering all analyses, three strategies (avoidance, venting and substance use) consistently linked to Ability EI, and two (social support searching and distraction) consistently held non-significant relationships with Ability EI. Inconsistent findings were reported for the remaining five strategies. As such, the current study suggests Ability EI is most meaningfully related to maladaptive Emotion Regulation strategies such as substance use, and only very weakly related to the implementation of neutral or adaptive strategies. Such findings are consistent with the broader coping literature whereby high Ability EI has been associated with less avoidant or emotion-focussed (maladaptive) strategies but not consistently more problem-focussed (adaptive) coping (Gohm, Corser and Dalsky 2005; Davis 2013; Goldenberg, Matheson and Mantler 2006; MacCann et al. 2011; Peters, Kranzler and Rossen 2009). For example, low drug and alcohol use has been consistently associated with greater Ability EI scores (Brackett, Mayer and Warner 2004; Rossen and Kranzler 2009). Comprehensive comparisons with the literature are not currently possible because few break down all results for specific strategies (e.g. Bastian, Burns and Nettelbeck 2005) and the context-specific nature of Emotion Regulation blurs the boundaries of where each Emotion Regulation strategy stands upon the adaptive-maladaptive continuum. Furthermore, some of these relationships have not been explored by previous research and thus no direct comparisons can be made. For example, there is no literature linking Ability EI to perseverance, distraction, or catastrophic thinking Emotion Regulation strategies. There were some divergent findings reported however. For example, the non-significant relationship between Ability EI and rumination reported ($r = .026$) was stated as large ($r = -.44$) by Lanciano et al. (2012). It is possible that the self-report typical-performance measurement of both Emotion Regulation and personality led to underestimations of the relationship between Ability EI and Emotion Regulation. Underestimations, or even erroneous results, cannot account for all the non-significant relationships however. For some strategies, the non-significant relationships are similar to previous works. For example, the relationship between Ability EI and social support searching ($r = -.066$) was similar to the findings of Bastian, Burns and Nettelbeck (2005). Bastian et al. used the COPE measure, which was the basis for many of the adjusted Emotion Regulation measures within the current study, and found a correlation of .06. In a similar study, Goldenberg, Matheson and Mantler (2006) found a correlation of .04 between Ability EI measured by

the MSCEIT and social support searching[1]. Indeed, the meta-analysis by Peña-Sarrionandia suggests not all Ability EI-Emotion Regulation relationships are likely to be strong. The current study expands these conclusions by tentatively postulating that Ability EI may be an early driver against use of maladaptive Emotion Regulation strategies, but not necessarily a driver of 'adaptive' strategy implementation (Davis 2013). Given these findings, it seems suitable to suggest that a direct relationship between Ability EI and Emotion Regulation cannot be assumed, and should not be considered consistently stable, nor equal, for each Emotion Regulation strategy. Potential explanations for these findings are discussed in context of model developments shortly. In reference to the Integrated Model of Affect-related Individual Differences, it can be concluded that the current study presents modest support for the relationship between Ability EI and Emotion Regulation, and thus pathway 3 proposed.

Pathway 4 of the Integrated Model of Affect-related Individual Differences proposed a relationship between Affect-related Personality and Emotion Regulation. Based upon the theoretical role of personality to drive Emotion Regulation (Compas, Connor-Smith and Jaser 2004) and meta-analysis of Peña-Sarrionandia, Mikolajczak and Gross (2015), Affect-related Personality was expected to relate to roughly 95% of Emotion Regulation strategies. Correlational and SEM analyses were consistent, with 80% and 90% of relationships significant between Affect-related Personality and Emotion Regulation respectively. The only consistently non-significant relationship was between Affect-related Personality and venting (r = .043), which was similar to that reported by Bastian, Burns and Nettelbeck (2005; r = .05), but divergent from Zomer (2012; r = -.27). For nearly all of the relationships explored, the existing literature has demonstrated great variance in relationship strength, likely due to variable sample size and quality of measurement (Peña-Sarrionandia, Mikolajczak and Gross 2015). For example, distraction has been linked to Affect-related Personality both weakly (r = -.11; Saklofske et al. 2012) and moderately (r = .41; Mikolajczak et al. 2008). Most often, results from the current analyses were within the range reported within this extant literature (in this case: r = .228). Further consideration surrounding the theoretical relevance of many Affect-related Personality measures, and that greatest convergence in relationship strength was reported when the same measure was adopted, suggests relationship strength was expected to vary and that this should not be considered problematic. As such, whilst the strength of some relationships were occasionally somewhat different to that reported within the extant literature, the current study presents strong support for the relationship between Affect-related Personality and Emotion Regulation, and thus pathway 4 of the Integrated Model of Affect-related Individual Differences.

[1] This was misread and mistakenly reported as .42 by Peña-Sarrionandia et al. 2015.

The fifth pathway of the Integrated Model of Affect-related Individual Differences proposed the interaction between Ability EI and Affect-related Personality would relate to Emotion Regulation (Côté et al. 2011; Fiori 2015; Hughes and Evans 2016). Tentatively proposed based upon empirical works demonstrating interaction effects by Côté et al. (2011), Foster and Roche (2014), and Fiori (2015), a significant relationship between Emotion Regulation and the Ability EI*Affect-related Personality interaction was only recorded when explored with catastrophic thinking. This finding seems likely to be attributable to the strong relationship reported between Affect-related Personality and catastrophic thinking, and thus the current study provided no convincing support for this pathway. As the first to directly examine the Ability EI*Affect-related Personality interaction, the current study provides preliminary evidence to suggest there may be no direct interaction. For most (if not all) of the Emotion Regulation strategies captured in the current study, intelligence and personality played separate roles in determining the implementation of Emotion Regulation, akin to the conclusions surrounding divergent roles drawn by Davis and Humphrey (2012a). However, these results may also suggest greater complexity is needed when modelling the Emotion Regulation process. Consideration of the different stages and roles each or both may be relevant to, looks to be a key area for development in understanding, and thus the current study represents a crucial impetus to explore more complex and nuanced models including convergent roles, divergent roles, and interactions between Ability EI and Affect-related Personality. In sum, the current study provides little, if any, support for the relationship between Emotion Regulation and the Ability EI*Affect-related Personality interaction, and thus pathway 5 of the Integrated Model of Affect-related Individual Differences.

The sixth and final pathway of the Integrated Model of Affect-related Individual Differences proposed a relationship between Emotion Regulation and affective outcomes. In order to contextualise and evidence the utility of the model proposed, five Emotion Regulation outcomes were selected from a systematic examination of a number of key individual, social, and negative domains: well-being, life satisfaction, aggression, friendship quality, and job performance. Each outcome was modelled with two of the ten Emotion Regulation strategies captured, chosen using the existing literature discussed in the introduction. Consistent with the substantial body of general literature (Gross 2002; Niven et al. 2012; Peña-Sarrionandia, Mikolajczak and Gross 2015), Emotion Regulation strategies appeared to be strong predictors of outcomes. In-line with the range of studies referenced in Section 4.1.2, nine of the ten relationships proposed were significant. The non-significant relationship ($r = .037$) between well-being and social support searching is surprising given the number of studies exploring the impact of social support on well-being (Gallagher and Vella-Brodrick 2008; Kong, Zhau and You 2012b; Zeidner, Matthews and Olnick-Shemesh 2016; Zeidner and Matthews 2016; Zeidner, Matthews and Olnick-Shemesh 2015). The lack of a meaningful relationship is surprising but could be a result of

diverging from the extant literature either by capturing social support seeking as an Emotion Regulation strategy, rather than capturing the level of social support available to an individual, or by using a well-being measure orientated towards psychological health, rather than the majority of the existing literature which explores positive/negative affect or life satisfaction measures (e.g. Gallagher and Vella-Brodrick 2008). Excluding this final result, the current study provides further support to a robust body of evidence which links Emotion Regulation and emotional outcomes, thus providing strong support for pathway 6 of the Integrated Model of Affect-related Individual Differences.

4.4.2 Model conclusions

All six pathways proposed by the Integrated Model of Affect-related Individual Differences were sequentially examined using a combination of path and SEM analyses and, as reviewed above, the findings were broadly supportive of the Integrated Model of Affect-related Individual Differences (see Table 4.15 for a summary).

Table 4.15: Support for the Key Pathways Explored Across All Analyses

Pathway	**Relationship**	**% of Analyses with Significant Findings**	**Support**
1	G -> Ability EI	100	Strong
2	FFM -> Affect-related Personality	100	Strong
3	Ability EI -> Emotion Regulation	50	Moderate
4	Affect-related Personality -> Emotion Regulation	85	Strong
5	Ability EI*Affect-related Personality -> Emotion Regulation	10	Weak
6	Emotion Regulation -> Outcomes	90	Strong

When pathways 3-6 were modelled simultaneously, the models provided mostly good fit to the data, with five of the ten models evidencing all key relationships proposed, and four of the remaining five providing support for some but not all pathways. Validation of the model can thus be considered successful having provided predominantly encouraging support for the Integrated Model of Affect-related Individual Differences. The two components receiving the most inconsistent support is that of the link between Emotion Regulation and Ability EI (pathway 3) and the Ability EI* Affect-related Personality interaction (pathway 5). Important nuances underlying these results are certainly worth greater discussion in context of the future development and refinement of the Integrated Model of Affect-related Individual Differences, and will now be discussed.

Within the current study, Social Support Searching and Distraction were never significantly related to Ability EI, with five other Emotion Regulation strategies showing weak or inconsistent relationships across the range of analyses conducted. These relationships are mostly consistent with the existing literature, as reviewed above (e.g. Bastian, Burns and Nettelbeck 2005; Goldenberg, Matheson and Mantler 2006), with a similar pattern of non-significant relationships in accordance with Peña-Sarrionandia, Mikolajczak and Gross (2015) reported elsewhere (e.g. humour; Yip and Martin 2006). As such, where relationships hypothesised were not significant, many seem to be replicating the extant literature, and appear to represent meaningful nuances in the complex drivers of affective behaviour. Contradicting Pathway 3 proposed, these non-significant results appear a fruitful avenue of exploration for the development of the Integrated Model of Affect-related Individual Differences.

Weak or non-significant findings between Ability EI could represent no relationship, and thus a poorly justified pathway, or a moderated relationship. Using humour as an example, individuals "high in both ability EI and Affect-related Personality might use adaptive humour often whereas those high in Ability EI but low in Affect-related Personality might use it less. Equally, those low in both Ability EI and Affect-related Personality might use maladaptive humour more often than those high in Ability EI but low in Affect-related Personality." (Hughes and Evans 2016: 332). Applying these principles to the current data, one might expect to see significant Ability EI*Affect-related Personality interactions for the prediction of Emotion Regulation strategies. Indeed there are many empirical works to suggest success in Emotion Regulation, and thus outcomes, can be attributable to the interaction between affective personality traits and cognitive abilities (Côté et al. 2011; Fiori 2015; Foster and Roche 2014). It was on this basis, and to explain non-significant findings as suggested above, that Pathway 5 of the Integrated Model of Affect-related Individual Differences was proposed. In the current study, the Ability EI*Affect-related Personality interaction was only related to one of the ten Emotion Regulation strategies explored however. Thus, one simple explanation for both results is that the manner in which affect-related individual differences coalesce is more complex than has been modelled.

Three nuances surrounding this specific study are worth noting. Firstly, it is quite possible that measurement error has influenced the conclusions surrounding model nuances and value. The use of new and adjusted measures will have likely distorted estimates, especially given the pivotal role of Emotion Regulation in the models tested, and thus these discussions should be approached in caution and in context of the available extant literature. A full discussion of the study limitations follows in Section 4.4.3. Second, the current study notes stronger correlations between Ability EI and implementation of highly maladaptive Emotion Regulation strategies (Gohm, Corser and Dalsky 2005; Davis 2013; Goldenberg, Matheson and Mantler 2006; MacCann et al. 2011; Peters, Kranzler and Rossen 2009). This is consistent with the theory of Ability EI presented, in that one would expect

knowledge of the negative impacts of such maladaptive strategies to lessen adoption of such behaviours, and thus with the existing literature which suggests Ability EI drives flexibility in choice of coping strategy (Davis and Humphrey 2012a). Third, some nuances in findings, such as the aforementioned relationships between Ability EI and maladaptive Emotion Regulation, may be accounted for by having captured only Emotion Regulation implementation. It is possible that concurrent exploration of identification, selection, and implementation could account for the inconsistencies identified in relationships between Ability EI and Emotion Regulation reported, potentially in a manner similar to predictions by Hughes and Evans (2016) or simply with different individual differences driving different stages of the Emotion Regulation process. For example, based upon the two common trends of relationships identified, one might predict that Affect-related Personality could be driving Emotion Regulation implementation and success (Petrides, Perez-Gonzalez, and Furnham 2007), with emotional attention and arousal, and thus the early choice of strategy, determined by Ability EI (Farrelly and Austin 2007; Martin and Thomas 2011; Salovey et al. 1999). Davis and Humphrey (2012a) have argued for a similar framework whereby Ability EI determined choice of coping strategies and Affect-related Personality determined the coping effectiveness. Indeed, it seems likely that cognitive ability and personality are likely to play numerous roles in the identification, selection, implementation, and thus success of Emotion Regulation, and that for different Emotion Regulation strategies they may play different roles at different stages in the Emotion Regulation process (Davis and Humphrey 2012a). Research to capture multiple aspects of this process will likely provide greater insight into the exact nature of the relationships underpinning these behaviours. The exact way a model could be structured is currently unclear given the dearth of research, however future research exploring different stages of the process could provide useful insights as to the extent to which differentiating and modelling these stages can improve understanding.

With respect to further model development, pathways 3 and 5 require particular attention to determine the various stages in the Emotion Regulation process (identification, selection, implementation) in which Ability EI and Affect-related Personality could have convergent and divergent roles (Davis and Humphrey 2012a). There is insufficient evidence to confidently propose changes to the pathways proposed by the Integrated Model of Affect-related Individual Differences based upon the current interpretations of findings, and as such it still represents a useful framework to explore such phenomena. The complexity of the behaviours being discussed suggests adjustments will be required as a growing evidence base builds a more concrete understanding of how the various affective individual differences coalesce to determine Emotion Regulation and thus outcomes.

4.4.3 Limitations and future research

The current study has made modest but important contributions to our understanding of affect-related individual differences and how they are related to each other and constructs from the wider individual differences domain. The current study utilised a large sample, wide coverage of the affect-related individual differences domain, and robust analyses. However, the study suffers from a number of notable limitations that should be kept in mind when forming conclusions.

One of the most noteworthy of concerns surround the validity of the Emotion Regulation measures adopted. Whilst the ten scales capturing style of Emotion Regulation implementation were predominantly adaptations of existing measures deemed necessary for consistency, they were not validated before use. Whilst consistent unidimensional factor structures, high factor loadings, and mostly acceptable fit indices would suggest acceptable psychometric properties, the true validity of the scales in accurately and appropriately capturing Emotion Regulation is unclear (Hughes 2017). When comparisons were possible, the results were broadly in-line with the existing literature, and thus general conclusions drawn are likely to be relatively robust. However, there is a significant likelihood that, consistent with the diversity in relationship strengths reported by Peña-Sarrionandia, Mikolajczak and Gross (2015), estimates of individual relationships have been distorted by measurement error and thus should be discussed with some caution. In this regard, the problematic fit indices and inconsistent findings of the social support searching subscale demands particular attention.

Broadly, the exclusive use of self-report questionnaires and subsequent implications drive various limitations to consider. Firstly, extensive questionnaire use has likely increased the amount of variance that could be attributed to the shared measurement method rather than underlying constructs. For example, the similarity in typical-report measurement types for Affect-related Personality and Emotion Regulation may have led to inflated estimates of their relationship and thus underrepresentation of the relationship between Ability EI and Emotion Regulation. This common method variance, or bias, should be deemed problematic (Podsakoff et al. 2003) and could have led to inflated parameter estimates (Brannick et al. 2010). In line with best-practice recommendations from Conway and Lance (2010), no statistical control strategies were adopted, clear justification was provided for adoption of self-report measurement and the specific measures adopted, the correlation matrix (Table 4.9) and analyses demonstrate a lack of overlap between items/constructs, and reasonable considerations were made, such as the separation of scales onto different pages within the online questionnaire (Podsakoff et al. 2003). Furthermore, there is evidence to suggest that relationships between highly-linked constructs in this field, such as Affect-related Personality and well-being, can be robust against criterion contamination (Williams et al. 2010).

Second, there are a number of self-report biases, including social desirability, of concern with questionnaire use. Socially desirable responding seems especially relevant for EI measurement given how EI is often described as a collection of positive self-perceptions (Kluemper 2008; Mesmer-Magnus et al. 2006). Broadly, EI measurement is considered problematic and thus there is a valid concern that the lack of objective outcomes and use of sub-optimal measurement tools have artificially inflated or distorted estimates of relationships and thus conclusions. As evidence to the contrary, the relationships reported within the current study represent no simple pattern and mostly replicate the extant literature, minimising concerns that the main conclusions drawn are driven by type 1/2 errors and thus questionable findings. Furthermore, there is modest evidence to suggest that partialling out social desirability does not yield any improvement of the predictive validity of self-report EI (Choi, Kluemper and Sauley 2011). Measurement is still however sub-optimal and recommendations for improvement follow shortly.

Third, the current study adopted a cross-sectional study design, and thus despite testing models including mediated relationships, conclusions surrounding causation cannot be made. It is possible that relationships could be bi-directional or of reverse causality. We might expect that an individual's emotional outcomes (e.g. friendships, jobs, etc.) may influence personality or selection/implementation of Emotion Regulation in the long-term (Lodi-Smith and Roberts 2007). For example, individuals who engage in an aggressive act may increase their use of rumination (Borders and Lu 2017). However, the relationships proposed were not specific to any one Emotion Regulation strategy or outcome, were in-line with previous theoretical and empirical works, and there are few empirical examinations of alternative models. A key priority of future research will be to generate data using longitudinal and experimental methods, capable of producing stronger conclusions surrounding the causal relationships inherent to the Integrated Model of Affect-related Individual Differences.

In general, use of a questionnaire was deemed the only appropriate method to capture a wide-range of variables on a large scale in the available timeframe. Many variables within the model are nearly always captured using this methodology, and for Ability EI and Affect-related Personality, no valid alternatives have been proposed. Whilst participation took roughly an hour and thus participant fatigue was possible, all key components of the Integrated Model of Affect-related Individual Differences were necessary to provide holistic evaluation. The most appropriate measures of each construct, given study constraints, were adopted which in sum dictated the size of the questionnaire. Furthermore, quality checks led to the removal of data where participants did not complete the questionnaire appropriately, to ensure all data represented meaningful responding. In sum, whilst a number of limitations surrounding study design and measurement require consideration when

drawing conclusions, the current study highlights a number of key relationships and trends of interest to the future study and integration of EI perspectives.

Based upon the limitations of the current study and the need for comprehensive evaluation of the Integrated Model of Affect-related Individual Differences, there are several key directions for future research to prioritise. Six recommendations to build the most robust body of evidence are presented. First, a diverse range of methodologies are necessary, beyond that of cross-sectional questionnaires. Use of innovative experimental paradigms could establish causal relationships and applied projects could establish the real-world contributions the Integrated Model of Affect-related Individual Differences can make to understanding. Second, a diverse range of measurement methods is needed. Using a wide range of questionnaires and other strategies to capture Ability EI, Affect-related Personality and Emotion Regulation can help ensure results do not reflect test effects. Third, greater exploration of alternative models, pathways or approaches will ensure optimal modelling of relationships and thus provide a more convincing body of evidence for the efficacy of the Integrated Model of Affect-related Individual Differences. Fourth, further consideration of interaction effects will establish whether there is a consistent pattern in which cognitive ability and personality interact during the Emotion Regulation process. As discussed above, this may help explain inconsistency in the relationship between Ability EI and Emotion Regulation. Fifth, Emotion Regulation should be explored further in context (Davis and Humphrey 2012b). In addition to capturing Emotion Regulation styles broadly, predicting use of specific Emotion Regulation strategies, whether that be when faced with a specific stressor (e.g. a certain task evoking negative emotions, such as an interview) or in a relevant context (e.g. the workplace, where some may be less likely to use aggression or venting in comparison to home-life). Such work will be vital in articulating the difference between strategies and styles, a point which has already been evidenced with humour (Evans and Steptoe-Warren OnlineFirst), and in establishing the applied value of the Integrated Model of Affect-related Individual Differences. Sixth, future works should adopt a diverse range of outcomes, ranging from broader subjective well-being questionnaires to objective performance in emotion-based tasks, to explore the full utility of the model.

4.4.4 Implications for EI theory

The Integrated Model of Affect-related Individual Differences, and subsequent empirical evaluation, was designed using the three approaches to affect-related individual differences proposed in the later half of Chapter 2. Adopting a purely theoretical stance, questionable atheoretical approaches to EI commonly disseminated including EI competencies, or similar commercialised models (e.g. JCAGlobal 2017), were not necessary. Instead, the various EI-related constructs were remodelled anew and considered as extensions of well-established affective individual differences. As the first empirical

work adopting this conceptualisation, the current study provides strong support. Ability EI was modelled within cognitive ability, and loaded upon 'g' to a comparable weight of that of fluid intelligence. Affect-related Personality was modelled as a collection of affect related traits, which linked to neuroticism, extraversion, and agreeableness as expected. Furthermore, modest relationships between the three EI conceptualisations were identified, with a weak relationship between Ability EI and Affect-related Personality replicating existing estimates, and a number of significant correlations between Emotion Regulation and Ability EI, Affect-related Personality, and the affective outcomes captured within the current study. As such, the pattern of relationships identified are consistent with the existing literature and theoretical rationale for their unique but related nature (Mavroveli et al. 2008; Peters, Kranzler and Rossen 2009; Saklofske, Austin and Minski 2003; Zeidner and Olnick-Shemesh 2010). Far from previous models which have difficulty differentiating and establishing the unique contribution of each perspective, the current results suggest the Ability EI/Affect-related Personality/Emotion Regulation approach to EI adopted can facilitate the development of a clear understanding of affect-related individual differences. The three approaches articulated present clear and theoretically-informed standpoints which could be differentiated from other EI conceptualisations and existing individual differences, and from which interpretation of results presented was enhanced and structured. Greater work is necessary to refine the content domain of each approach, however the current study provides support for the broad approach adopted, and is encouraging for supporting future researchers in the field of affect-related individual differences.

4.4.5 Model applications

Whilst the Integrated Model of Affect-related Individual Differences presented may be subject to various alterations as our understanding of EI becomes more sophisticated, the general model proposed looks to be a valuable structure for many theoretical, academic, and practical purposes. The model could be adopted to examine the structure of individual differences and the way they interact to predict outcomes, provide a framework to support measurement design, help structure examinations of affective outcomes, or inform interventions surrounding affect-related individual differences in any context. Given the early stage of the model proposal however, it seems most appropriate to encourage only further academic testing of the model veracity at this current time. Many EI theories have been proposed with very little, if any, evidence to support propositions, and whilst the current empirical evidence provides modest support for the Integrated Model of Affect-related Individual Differences, the current study represents only one method of evaluating what is a vast and complex model, attempting to explain diverse and complex phenomena. Caution is therefore

recommended when considering application of the Integrated Model of Affect-related Individual Differences without further empirical exploration.

4.5 Chapter conclusion

The current chapter aimed to empirically explore the Integrated Model of Affect-related Individual Differences, and the three-component conceptualisation of EI from which it was built, proposed in the previous chapters. Having justified the measures adopted to capture Ability EI, Affect-related Personality, Emotion Regulation, and five affect-related outcomes, analyses of empirical data collected from 830 participants were presented. Most central tenets of the model were supported, demonstrating how Ability EI and Affect-related Personality coalesce to predict Emotion Regulation, and thus affect-related outcomes. Ability EI was situated within a cognitive ability framework, Affect-related Personality was modelled alongside neuroticism, extraversion, and agreeableness, and Emotion Regulation was modelled as the manifestation of the two. Support was only modest for the relationship between Emotion Regulation and Ability EI, and was very weak for the interaction between Ability EI and Affect-related Personality. It was concluded that the Integrated Model of Affect-related Individual Differences is a useful framework to support understanding and modelling of affect-related individual differences. The degree to which all pathways proposed are relevant to all Emotion Regulation strategies is still unclear however, highlighting the need for greater empirical evaluation of the model proposed. Towards this outcome, the following chapter adopts the cold-pressor task paradigm to further explore the Integrated Model of Affect-related Individual Differences.

Chapter 5: Testing the integrated model - Part 2: Experiment

This fifth chapter will further empirically explore the Integrated Model of Affect-related Individual Differences proposed in the third chapter. The extant literature reviewed, and the previous study, have thus far provided support for situating EI constructs within existing individual difference frameworks and for the integration of perspectives as hypothesised. Based upon several key research priorities highlighted within the previous chapter, focussing upon different methodology, measurement, conceptualisations of Emotion Regulation, and outcomes, a pseudo-experimental study is presented to further explore the integration of perspectives. Using the cold pressor task paradigm to evoke negative emotions, the extent to which Ability EI and Affect-related Personality can predict the Emotion Regulation strategies adopted to deal with the emotions evoked, and the extent to which these strategies facilitate task success, is explored.

5.1 Introduction

The Integrated Model of Affective Individual Differences was proposed in Chapter 2, and builds upon the extant literature to present two key contributions. Firstly, it defines three different approaches to EI as extensions of well-established affective individual differences. Ability EI was considered a second-stratum cognitive ability, Affect-related Personality was considered a compound construct of affective personality traits, and Emotion Regulation was presented as a preferred approach to capture domain previously held within EI competency models. Secondly, in Chapter 3, these three approaches were modelled to posit how they could be integrated to better explain emotional phenomena. The key tenet of the model was to place Emotion Regulation as the goal-directed behavioural manifestation of Ability EI and Affect-related Personality.

The previous chapter was the first empirical evaluation of the Integrative Model of Affect-related Individual Differences. Building upon convincing evidence from MacCann et al. (2014), and using different measures and a larger sample, emotion recognition, management and understanding formed a clear Ability EI factor that loaded onto g as a second-stratum factor. Similarly, Affect-related Personality was strongly related to Extraversion, Neuroticism and Agreeableness, consistent with the definition as a compound personality construct (Petrides, Pita and Kokkinaki 2007). These findings provide support for situating EI as extensions of well-established affective individual differences.

The previous chapter also explored the manner in which different EI-related individual differences interact to predict affective outcomes. In-line with hypotheses, Emotion Regulation was significantly

related to the diverse range of outcomes captured (Gross 2002; Niven et al. 2012; Peña-Sarrionandia, Mikolajczak and Gross 2015). Of the ten relationships explored, nine provided support for the proposed pathway, with the single exception potentially explained by differences in measurement of both social support searching and well-being reported in the existing literature. Examining the affect-related individual differences related to such Emotion Regulation strategies, Affect-related Personality was significantly linked in 85% of analyses, similar to the percentage reported by Peña-Sarrionandia, Mikolajczak and Gross (2015). The relationship between Affect-related Personality and venting was the sole consistent exception, with similar non-significant results reported elsewhere (Bastian, Burns and Nettelbeck 2005). The relationship between Ability EI and Emotion Regulation was somewhat less consistent at 50%. Three Emotion Regulation strategies consistently linked, five strategies presented inconsistent findings across the range of analyses conducted, and two strategies demonstrated consistently non-significant relationships to Ability EI. Again, many relationships replicated those within the literature where available (Peña-Sarrionandia, Mikolajczak and Gross 2015) with a small number of divergent results. Finally, the Ability EI* Affect-related Personality interaction was only significantly related to one of the ten Emotion Regulation strategies captured, providing little support for the fifth pathway proposed.

5.1.1 The current study

As a whole, the previous study provided encouraging support for the Integrated Model of Affect-related Individual Differences. However, inconsistencies found in the latter two pathways discussed above, inspired six key recommendations to further explore the model:

1. Adopt a diverse range of methodologies
2. Adopt a diverse range of measurement methods
3. Explore alternative models, pathways, or approaches
4. Explore interactions between cognitive ability and personality
5. Explore Emotion Regulation in context, capturing styles and strategies
6. Adopt a diverse range of outcomes

The current study aims to build upon these recommendations. To address the first recommendation, alternative methodologies were explored. As discussed in sections 3.2.3 and 3.2.4 above, common experimental paradigms adopted to explore EI include mood induction tasks (e.g. Ciarrochi, Chan and Caputi 2000), eye-tracking (e.g. Davis 2010), physiological assessment, and stress tasks (e.g. Thomas, Fuchs and Klaperski 2018). As the aim of the current study was to evoke diversity in cognitive and behavioural Emotion Regulation strategy use, the latter approach was considered the most relevant.

One of the most popular methods is the Trier Social Stress Task (Kirschbaum, Pirke and Hellhammer 1993) however there has been little research exploring the use and impact of specific Emotion Regulation strategies evoked (see Lam et al. 2009 and Jamieson, Nock and Mendes 2012 as exceptions). As such, the current study adopts the cold pressor task as a common stress coping experimental paradigm. The cold pressor task is typically used to evoke pain or discomfort, and involves participants submersing a hand in very cold water for as long as they can tolerate. Whilst not especially common in the EI literature, the cold pressor methodology is a particularly useful paradigm for the current study as it can evoke a wide range of emotional responses and Emotion Regulation strategies, and there is convincing evidence to suggest that perceptions and expression of pain/comfort, and ability to tolerate pain is predicted by the Emotion Regulation strategy adopted (Edwards and Fillingim 2005). In the cold pressor task, the use of catastrophizing (Geisser, Robinson and Pickren 1993; Leong 2014; Lu et al. 2007), internalising (Lu et al. 2007), avoidant strategies (Zettle et al. 2005), and thus dysfunctional coping, have been associated with less successful endurance of the task. In contrast, use of positive self-statements (Lu et al. 2007), distraction (Weiss, Dahlquist and Wohlheiter 2011), positive re-appraisal (Denson et al. 2014) and perspective-taking (Leong et al. 2015) have been associated with greater endurance within the task.

To address the second recommendation, and thus counter the aforementioned issues surrounding self-report Emotion Regulation styles, the current study captures Emotion Regulation through a combination of observation and self-reported Emotion Regulation strategy use, structured by a checklist built from existing strategy taxonomies. The same Ability EI and Affect-related Personality measures used in the previous study were adopted however, as there were few theoretically-appropriate and financially-accessible alternatives and the measures demonstrated acceptable theoretical clarity, successfully evidencing pathways 1 and 2 of the Integrated Model of Affect-related Individual Differences. Supporting the fourth recommendation, the analysis strategy of the current study will also include the Ability EI*Affect-related Personality interaction effect as proposed by Pathway 5 of the Integrated Model of Affect-related Individual Differences.

Addressing the fifth recommendation, the current study adopts the cold pressor task, addressing the need for a pre-defined context to measure specific emotion-regulation strategies, rather than self-report questionnaires of Emotion Regulation styles (Mestre et al. 2016). This difference between style and strategy is meaningful as Emotion Regulation is contextual and whilst some strategies are generally more adaptive or maladaptive than others (Peña-Sarrionandia, Mikolajczak and Gross 2015), the success of a strategy can only be determined by context. For example, using aggressive humour is

often considered problematic, however this strategy can be useful to facilitate bonding (Hobbs 2007), and thus can be of significant benefit within the workplace (Evans and Steptoe-Warren OnlineFirst). This difference between style and strategy has been reported as especially important for the cold pressor paradigm. Hampton et al. (2015) found that active use of suppression or reappraisal Emotion Regulation strategies, but not trait suppression and reappraisal (measured by the ERQ), could predict automatic and cognitively mediated expressions of pain. This study reinforces the value of studying Emotion Regulation strategies rather than Emotion Regulation styles, and adds emphasis to the importance of context in determining the valence of outcomes of Emotion Regulation within use of this experimental paradigm.

To address the final recommendation, three outcomes were captured. Adopting the cold pressor task, performance is typically captured by measuring the length of time in which the participant can keep their hand in the icy water. Emotion Regulation use has been associated with other effects that could be considered outcomes with use of this experimental paradigm however. For example, pain intensity experienced during the task has been associated with suppression in a wide range of studies by Burns and Quartana (Burns, Elfant and Quartana 2010; Quartana and Burns 2007; Quartana, Yoon and Burns 2007; Quartana et al. 2010). Similarly, those with greater emotional repair, defined as the self-reported use of positive thinking to repair negative moods, experience less pain and a better mood post-test (Ruiz-Aranda, Salguero and Fernandez-Berrocal 2010). Biological indicators have also been used as a representation of performance in the task. For example, Kiecolt-Glaser et al. (2010) found that expert yoga practitioners experienced a lower heart rate during the cold-pressor task in comparison to novice yoga practitioners. The multifaceted nature of performance in the cold pressor task represents an opportunity to capture both subjective and objective outcome data. As such, the current study captures the amount of time with hand submersed, and self-reported pain and discomfort using a visual analogue scale. Such outcomes minimise the likely extent of common-method bias and could provide a more nuanced account of the complexity behind the regulation process in context.

In sum, findings from the large questionnaire study provided in the previous chapter are broadly supportive of the Integrated Model of Affect-related Individual Differences. The current study adopts the experimental cold pressor paradigm and in doing so, aims to address some of the limitations and suggested recommendations of the previous study, and thus adds further vital evidence for informing evaluation of the proposed Integrated Model of Affect-related Individual Differences. By adopting a novel methodological approach to capture Emotion Regulation strategies in context, exploring

interaction effects, and using objective and subjective outcomes, the current study aims to contribute towards a robust body of literature that can determine the extent to which the Integrated Model of Affect-related Individual Differences provides a fruitful structure to explore affect-related individual differences.

5.2 Method

5.2.1 Design

The current study adopted a within-participants pseudo-experimental trial. To further explore the Integrated Model of Affect-related Individual Differences (see Chapter 3), specifically Pathways 3-6, participants completed a battery of psychometric tests before completing the cold pressor task and undertaking an interview to determine the Emotion Regulation strategies adopted. Aiming to build a practical framework of knowledge informed by theory and using empirical observations of psychological attributes that cannot be removed from social praxis and thus must reflect an assumed reality, the current study therefore most closely aligns to a pragmatic-realist epistemology akin to the previous study (Borsboom, Mellenbergh and van Heerden 2004; Guyon et al. 2018; Maul, Wilson and Irribarra 2013).

5.2.2 Participants

54 participants were recruited via opportunity sampling through a research participation scheme at Coventry University. Participants were first- or second-year psychology undergraduates who volunteered to take part in exchange for research credits required for degree progression. Forty females and 14 males participated, with a mean age of 20 (SD = 2.78).

In line with best-practice principles and laboratory health and safety requirements, participants were screened to ensure they had no history of Raynaud's phenomenon, fainting or seizures, frostbite or cardiovascular disorder and had no fractures, open cuts or sores on the arm to be submersed (Birnie et al. 2012).

5.2.3 Materials

Ability EI, Affect-related Personality, Cognitive Ability, Neuroticism, Agreeableness and Extraversion - The battery of psychometric measures captured in Chapter 4 were again adopted for the current study:

Cognitive ability was measured by subscales of the ICAR (Condon and Revelle 2014). To capture fluid intelligence, the 9-item Letter and Number Series task was adopted. To capture crystallised intelligence, the 16-item verbal reasoning task was administered. Participants responded using one of eight responses scored as either correct (1) or incorrect (0). Although relatively new, internal reliability scores of .77 and .76 respectively have previously been reported, in addition to theoretically-relevant

moderate-to-strong correlations with measures of cognitive ability and achievement (Condon and Revelle 2014). A total cognitive ability score was created by adding z-scores of the two scales together.

Neuroticism, Agreeableness and Extraversion were captured by the Big Five Inventory (John and Srivastava 1999), through 8, 9 and 8 items respectively, responded to on a five-point likert scale. Cronbach's alpha scores typically lie between .7 and .8 (Li et al. 2015) and scores typically show high convergent validity with other self-report and peer-rated trait measures (Gosling, Rentfrow and Swann 2003).

Emotion recognition was captured by the Ant-Colony Optimised Reading Mind in the Eyes Test (Baron-Cohen et al. 2001; Olderbak et al. 2015). Ten images of eyes were presented and participants chose from 4 options each to identify the emotion being experienced, scored as correct (1) or incorrect (0) as judged by raters (Baron-Cohen et al. 1997). Emotion management was captured by the Situational Test of Emotion Management Short Form (Allen et al. 2015). The scale involves 18 items answered by the choice of one of four options, each scored between 0 and 1 based upon percentage agreement with an expert sample (MacCann and Roberts 2008), and has a reported internal reliability of .84 (Allen et al. 2015). Emotion Understanding is captured by the Situational Test of Emotion Understanding Brief with a similar 19-item format with five response options scored as 0 or 1 based upon Appraisal theory, and a reported Cronbach's Alpha of .63 (Allen et al. 2014). A total Ability EI score was created by adding z-scores of the three scales together.

Affect-related Personality – Affect-related Personality was captured by the Short-Form Trait Emotional Intelligence Questionnaire (Petrides 2009). The scale has 30 items that are responded to using a 7-point likert scale, and has a reported cronbach's alpha of .88 for men and .87 for women (Cooper and Petrides 2010).

Pain and Discomfort – Pain and discomfort was captured by a visual analogue scale ranging from 'comfortable' to 'unbearable', which was then coded on a scale of 1 to 16. For one participant, these ratings were not collected.

Pain Tolerance – Pain tolerance was captured by timing how many seconds participants kept their arm in the water for. If 5 minutes had passed, participants were told to stop and the timing was coded as 300s.

Emotion Regulation Checklist and Interview – See list of strategies in Table 5.1, with a full list of descriptions, and the experimental protocol and observational checklist in Appendix 8.7.

5.2.4 Procedure

Participants were provided with a participation information sheet and consent form online (Appendix 8.2 and 8.3). At this point, the participants completed all the questionnaire measures and booked a timeslot at the laboratory. Upon arrival participants were briefed about, and were required to consent to, the cold pressor task, before placing their unclenched hand in room-temperature water for 3 minutes to create a standardized starting point and to allow heart rate to normalize (as reported in Stephens and Umland 2011). Participants then undertook the cold pressor task with the same unclenched hand for up to 5 minutes or until the pain/discomfort was unbearable. In accordance with best practice principles and to get the greatest range in responses (Birnie et al. 2012), participants were asked to expose an arm up to their elbow into to a bucket of icy-water (temperature ranging 1 - 6C with a mean of 2.6C, SD = 0.13; Mitchell, MacDonald and Brodie 2004). Participants were first asked to rate the level of pain and discomfort experienced using a visual analogue scale, and then were interviewed to discover what emotion was evoked, and what Emotion Regulation strategies they adopted to cope with the cold pressor task, facilitated by a checklist derived from taxonomies (Peña-Sarrionandia, Mikolajczak and Gross 2015; See Table 5.1 and Appendix 8.7). Participants were then debriefed (Appendix 8.4).

Recordings of 52 of the 54 participants were suitable for observational coding. Two were not recorded due to technical issues with the equipment. Recordings were independently coded using the behavioural checklist (see Appendix 8.7) by the current author and another social science researcher with prior experience of observational research methodology. Inter-rater reliability of the coders was assessed using Cohen's Kappa and was high (K = .980 (95% CI .958 to 1.0), p < .001). The three cases of disagreement were resolved through discussions relating to the Emotion Regulation strategy definitions. For example, "oh my god" was considering swearing by one coder, but was not scored as aggression. Where there was a negative observation but positive self-report (135 cases), the self-report response was adopted for analysis as the observation checklist was not fully comprehensive. For example, when participants self-reported persistence but did not complete the full five minutes, this was coded as positive for persistence as it is likely the participant attempted to persevere despite not enduring the full task. Where there was a positive observation but negative self-report (59 cases), this observational data was added to the self-report data for analysis. For example, when participants talked to the experimenter but did not self-report social support searching.

In sum, thirty-two different strategies were used and the number of strategies used by each participant ranged from 3 to 21, with a mean of 11.43 (SD = 4.26). Table 5.1 presents the theoretical

family of each Emotion Regulation strategy, alongside the number of individuals who used each strategy presented in brackets.

Table 5.1 The Emotion Regulation families and strategies adopted

1 – Situation Selection	**2 – Situation Modification**	**3 – Attentional Deployment**	**4 – Cognitive Appraisal**	**5 – Response Modulation**
Perseverance (44)	Restraint (38)	Distraction (30)	Self-Efficacy (39)	Give Up (43)
Time to Relax (21)	Social Support Searching (21)	Attention Deployment (27)	Challenge Appraisal (36)	Exercise (26)
***Avoidant Coping (3)**	Planning (21)	Focus on Positive (23)	Perspective Taking (36)	Suppression (16)
***Behavioural Disengagement (1)**	Situation Modification (14)	Rumination (22)	Acceptance (30)	*Aggression (4)
	Conflict Resolution (14)	*Mindful (9)	Re-Appraisal (25)	*Venting (3)
		*Religion (2)	Adaptive Humour (21)	
			Positive Self-Statements (17)	
			Cognitive Change (15)	
			Denial (10)	
			*Threat Appraisal (3)	
			*Self-Blame (2)	
			*Maladaptive Humour (1)	

5.3 Results

5.3.1 Analysis strategy

There are multiple ways in which the current data could be analysed. As individual Emotion Regulation strategies were captured as binary, and were thus not especially sensitive, exploration of individual Emotion Regulation strategies was deemed problematic. Furthermore, given that SEM analyses require sample sizes in excess of 200 for findings to be considered robust, and a much smaller sample size was achieved due to the experimental paradigm adopted, a different analysis strategy to the previous chapter was required.

The aim of the current study was to explore the central tenets of the Integrated Model of Affect-related Individual Differences, and thus a simple analysis strategy was adopted to optimise parsimony and minimise the chance of drawing erroneous conclusions from type 1 errors driven by multiple

unnecessary analyses (also known as p-hacking). The strategy adopted involves regression-based analyses with Emotion Regulation strategies coded as either adaptive or maladaptive specifically for the cold pressor task.

Individual Emotion Regulation strategies were grouped based upon the extent to which the available empirical literature has suggested their adaptive or maladaptive role in the cold pressor task (see 5.1.1). As such, use of positive self-statements, distraction, positive re-appraisal and perspective taking was totalled to create an 'Adaptive ER' score. Similarly, avoidant coping and suppression were totalled to form a 'Maladaptive ER' score. To uncover any nuances in the degree to which the whole style is important, rather than valence of strategies, the maladaptive score was deducted from the adaptive score to present an additional balanced 'ER approach' total. The subsequent analyses presented will therefore examine whether the affect-related individual differences can predict use of an adaptive/maladaptive Emotion Regulation approach in a manner consistent with pathways 3-6 of the Integrated Model of Affect-related Individual Differences.

The analyses presented predominantly reflects regression analyses using SPSS. As Ability EI is comprised of three scales with different scoring styles and unequal numbers of items, scores for emotion recognition, management, and understanding were transformed into z-scores to increase interpretability of findings and then totalled (Aiken and West 1991; Judd and McClelland 1989). Affect-related Personality was calculated by totalling all 30 items to form a broad Affect-related Personality score. To minimise the potential effects of Emotion Regulation strategies not commonly adopted within the current sample, Emotion Regulation totals were coded as binary. Individuals who used 0 or 1 of the 4 adaptive strategies were coded as '0', and those who used 2 or more were coded as '1'. This same procedure was adopted for the total maladaptive score, whereby individuals were scored either as '0' (for 0) or '1' (for 1 or 2). Finally, the Emotion Regulation approach score was calculated by subtracting the number of maladaptive strategies from the number of adaptive strategies, and coding the total as 0 (for 0-1, representing a more maladaptive approach) or 1 (for 2-4 strategies, representing a more adaptive approach).

5.3.2 Descriptive statistics

All individual difference variables captured were correlated together to examine patterns of relationships between outcomes and the various personality and cognitive ability components captured. As can be seen in Table 5.2, cognitive ability was positively associated with time spent in water. All other relationships between the individual differences and outcomes were non-significant. Furthermore, there was a significant yet moderate (r = .284) relationship between Ability EI and Affect-related Personality.

Table 5.2 Descriptive statistics and correlation coefficients

	Mean (SD)	1	2	3	4	5	6	7	8
1. IQ	.00 (1.85)	-							
2. Extraversion	25.54 (5.38)	.024	-						
3. Agreeableness	32.85 (6.00)	.173	.048	-					
4. Neuroticism	25.00 (5.64)	-.244	-.184	-.145	-				
5. Affect-related Personality	123.33 (19.15)	.324*	.583**	.239	-.610**	-			
6. Ability EI	.00 (2.61)	.686**	.091	.147	-.141	.284*	-		
7. Time (Seconds)	137.02 (108.21)	.327*	-.068	.267	-.238	.150	.226	-	-
8. Pain	8.94 (3.58)	-.086	.110	.064	.256	-.149	.021	-.354*	-
9. Discomfort	10.23 (3.38)	.075	.085	.167	.145	-.043	.096	-.273*	.622**

* = $p < .05$; ** = $p < .01$

5.3.3 Pathways 3 and 4: Ability EI/Affect-related Personality -> Emotion Regulation

All three Emotion Regulation scores were correlated with the cold pressor task outcomes, and the various facets of personality and cognitive ability captured. As can be seen in Table 5.3, Affect-related Personality was positively related to the adaptive-maladaptive balanced score. All other relationships between the individual differences and Emotion Regulation strategy variables were non-significant.

Table 5.3 Descriptive statistics and correlation coefficients with Emotion Regulation

	Mean (SD)	IQ	E	A	N	ArP	AEI	Time (S)	Pain	Discom-fort
Adaptive ER	2.00 (1.15)	-.008	.092	-.156	-.084	.197	-.059	.066	-.148	-.157
Maladaptive ER	0.35 (0.52)	-.089	-.015	-.074	.161	-.134	-.118	-.009	-.093	-.089
ER Approach	1.65 (1.18)	.031	.095	-.119	-.152	.250*	-.005	.068	-.104	-.114

E = Extraversion; A = Agreeableness; N = Neuroticism; ArP = Affect-related Personality; AEI = Ability EI;

* = $p < .05$; ** = $p < .01$

To establish whether Ability EI and Affect-related Personality predict Emotion Regulation as hypothesised, binomial logistic regressions were conducted to predict Emotion Regulation, see Table

5.4. The Chi-Square (χ2) determines whether the null hypothesis: that EI has not increased our ability to predict high or low use of Emotion Regulation, can be rejected. Here, p-values below .05 suggest that EI improved our ability to predict the Emotion Regulation categorisation of an individual. Nagelkerke's R^2 is then presented, representing the proportion of variance in Emotion Regulation associated the predictors, ranging from 0 to 1. This statistic is presented alongside the percentage likelihoods of successfully allocating individuals to their correct group (0 or 1), without and then with predictor variables considered. Here, an increase in prediction success percentage suggests EI may be a meaningful predictor of Emotion Regulation. Finally, the Wald Criterion and odds ratio are presented to explore the effect size of individual EI approaches towards the prediction of Emotion Regulation. Here, p-values below .05 suggest the individual EI type significantly contributed towards the improvement of prediction and the Wald statistics and Odds Ratio (Exp(B)) demonstrate the effect size. Table 5.4 below shows how for most, Ability EI and Affect-related Personality did not predict Emotion Regulation strategy use. The one noteworthy exception is that individuals with a greater Affect-related Personality score typically used more adaptive, rather than maladaptive, strategies.

5.3.4 Pathway 5: Ability EI*Affect-related Personality -> Emotion Regulation

Pathway 5 representing the interaction between Ability EI and Affect-related Personality, and the subsequent relationship to Emotion Regulation, was next considered. Interaction terms were added to the models used to explore pathways 3 and 4. As can be seen from Table 5.5 below, the interaction between Ability EI and Affect-related Personality was not a significant predictor of any Emotion Regulation score.

Table 5.4 Regressions predicting Emotion Regulation from Ability EI and Affect-related Personality

ER Strategy	***χ2* (df) = p-value**	**Nagelkerke's R^2, Prediction success**	**Wald criterion and odds ratio for Ability EI and Affect-related Personality**
Adaptive ER	*χ2*(2) = 1.786, *p* = .409	R^2 = .044, 57.4% -> 59.3%	Wald = .457, *p* = .499, Exp(B) = .926 Wald = 1.586, *p* = .208, Exp(B) = 1.017
Maladaptive ER	*χ2*(2) = .857, *p* = .651	R^2 = .022, 66.7% -> 66.7%	Wald = .073, *p* = .787, Exp(B) = .970 Wald = .591, *p* = .442, Exp(B) = .989
ER Approach	*χ2*(2) = .4.831, *p* = .089	R^2 = .114, 53.7% -> 61.1%	Wald = .627, *p* = .428, Exp(B) = .912 Wald = 4.212, *p* = .040, Exp(B) = 1.030

Table 5.5 Regressions predicting Emotion Regulation from Ability EI, Affect—related Personality and the Ability EI-Affect-related Personality interaction

ER Strategy	*χ2*	Nagelkerke's R^2, Prediction success	Wald criterion and odds ratio for Ability EI, Affect-related Personality, and Ability EI*Affect-related Personality
Adaptive ER	*χ2*(3) = 2.916, *p* = .405	R^2 = .071, 57.4% -> 61.1%	Wald = 1.235, *p* = .266, Exp(B) = .409 Wald = 1.128, *p* = .288, Exp(B) = 1.015 Wald = 1.060, *p* = .303, Exp(B) = 1.006
Maladaptive ER	*χ2*(3) = 1.175, *p* = .759	R^2 = .030, 66.7% -> 66.7%	Wald = .353, *p* = .553, Exp(B) = .632 Wald = 750, *p* = .386, Exp(B) = .987 Wald = .312, *p* = .577, Exp(B) = 1.003
ER Approach	*χ2*(3) = .5.540, *p* = .136	R^2 = .130, 53.7% -> 59.3%	Wald = .861, *p* = .354, Exp(B) = .468 Wald = 3.680, *p* = .055, Exp(B) = 1.029 Wald = .682, *p* = .409, Exp(B) = 1.005

5.3.5 Pathway 6: Emotion Regulation -> Outcomes

To evidence the utility of the Integrated Model of Affect-related Individual Differences, and importance of improving understanding of affect-related individual differences, three regressions were conducted to determine whether the three Emotion Regulation totals predicted outcomes. Emotion Regulation was not a significant predictor of time endured (F(3, 50) = 1.707, p = .177, R2 = .093, AdjR2 = .038), self-reported pain (F(3, 49) = 1.131, p = .346, R2 = .065, AdjR2 = .007) or self-reported discomfort (F(3, 49) = 1.295, p = .287, R2 = .073, AdjR2 = .017).

5.4 Discussion

The aim of the current study was to address limitations of the previous study and adopt subsequent recommendations for providing further empirical examination of the Integrated Model of Affect-related Individual Differences proposed. By adopting the cold pressor paradigm to evoke naturalistic Emotion Regulation strategies, rather than the self-report questionnaire methodology adopted in the previous chapter, the current study explored the way in which the different approaches to EI interact as proposed by the Integrated Model of Affect-related Individual Differences. The current study explores pathways 3 to 6 of the Integrated Model of Affect-related Individual Differences, with particular focus on pathways 3 and 5 based upon inconsistencies found in the previous chapter. In order to provide the most insight possible whilst minimising opportunistic p-hacking, a simplistic adaptive/maladaptive approach to Emotion Regulation scoring were explored.

5.4.1 Key findings

First, all the individual differences were correlated. Consistent with theoretical and empirical works, the three EI approaches were related but distinct, as evidenced by modest correlations between the approaches, and a predictable set of relationships to personality and cognitive ability (Mavroveli et al. 2008; Peters, Kranzler and Rossen 2009; Saklofske, Austin and Minski 2003; Zeidner and Olnick-Shemesh 2010). For subsequent analyses, positive self-statements, distraction, positive re-appraisal, and perspective taking strategies were categorised and collated as adaptive, and avoidant coping and suppression were grouped as maladaptive, based upon the extant cold-pressor-based literature reviewed in Section 5.1.1. Deducting the maladaptive score from the adaptive score also allowed examination of a balanced 'ER approach'. These three Emotion Regulation totals were examined predominantly using regression-based analyses and were intended to support replication of existing findings from the extant literature surrounding the adaptive qualities of certain Emotion Regulation strategies. Of primary importance, the analyses aimed to provide further evaluation of the value of the Integrated Model of Affect-related Individual Differences in structuring understanding of the manner in which the components of personality and cognitive ability coalesce to drive Emotion Regulation.

The third pathway proposed by the Integrated Model of Affect-related Individual Differences posited a relationship between Ability EI and Emotion Regulation. In both correlation and regression analyses, Ability EI was not significantly related to any Emotion Regulation approach. Such results are somewhat divergent from the available extant literature, which have associated Ability EI with the aforementioned Emotion Regulation strategies in a predictable pattern. For example, Ability EI has been negatively associated with avoidant coping ($r = -.21$; MacCann et al. 2011), and positively with positive interpretations ($r = .11$; Bastian, Burns and Nettelbeck 2005). The current findings were often in the same direction as would be predicted from this literature but weaker and statistically non-significant. Again, of note, Ability EI was more strongly linked to maladaptive, rather than adaptive, Emotion Regulation (Gohm, Corser and Dalsky 2005; Davis 2013; Goldenberg, Matheson and Mantler 2006; MacCann et al. 2011; Peters, Kranzler and Rossen 2009). As such, the current results provide limited support for the relationship between Ability EI and Emotion Regulation, and thus pathway 3 of the Integrated Model of Affect-related Individual Differences.

Pathway 4 proposed by the Integrated Model of Affect-related Individual Differences posited a relationship between Affect-related Personality and Emotion Regulation. In both correlation and regression analyses, Affect-related Personality was non-significantly related to Emotion Regulation. Binary regression results revealed one significant result: individuals who adopt an adaptive, rather than maladaptive, Emotion Regulation approach had higher levels of Affect-related Personality. This

is consistent with the extant literature which has associated Affect-related Personality with distraction (d = .26), positive re-appraisal (d = .61), avoidant coping (d = -.27) and suppression (d = -.43; Peña-Sarrionandia, Mikolajczak and Gross 2015). The general lack of significant findings contradicts the consistently established role of Affect-related Personality for resisting experimentally-induced stress (Laborde et al. 2011; Mikolajczak et al. 2007; Wilbraham, Qualter and Roy 2018), however again represents weaker replications of the existing literature with relationships in the expected directions. In sum, the majority of relationships between Affect-related Personality and Emotion Regulation reported were statistically non-significant, with Emotion Regulation approach as the sole exception. Such findings thus provide only moderate support for the relationship between Affect-related Personality and Emotion Regulation, and thus pathway 4 of the Integrated Model of Affect-related Individual Differences.

The fifth pathway of the Integrated Model of Affect-related Individual Differences proposed the interaction between Ability EI and Affect-related Personality would relate to Emotion Regulation (Côté, et al. 2011; Fiori 2015; Hughes and Evans 2016). Consistent with the correlations reported above, this relationship was non-significant for all three Emotion Regulation totals. These results are in accordance with the findings of the previous chapter, however taken in context of the concerns raised surrounding Emotion Regulation measurement alluded to throughout this thesis, should again be interpreted with caution.

The sixth and final pathway proposed by the Integrated Model of Affect-related Individual Differences presented a relationship between Emotion Regulation and affective outcomes. In-line with the trend of findings from the current set of analyses, Emotion Regulation failed to predict time endured, self-reported pain, or self-reported discomfort. These results should be considered highly dubious given that the Emotion Regulation strategies were chosen and categorised as (mal)adaptive using only literature adopting the cold pressor task. Examination of the mean results suggests some differences may have been present however. Individuals categorised as adopting more rather than fewer adaptive Emotion Regulation strategies endured the task for 60.32 seconds longer on average, rated pain lower by 1.64 and rated discomfort lower by 1.60. Similarly, those who were categorised as using greater rather than fewer numbers of maladaptive strategies typically withdrew their hand 5.97 seconds earlier, rated their pain as slightly more manageable (-.18) and reported slightly greater discomfort (.10). Finally, individuals who used a more adaptive approach persisted for 34.53 seconds longer, reported less pain by .95, and less discomfort (.96) than those who used a more maladaptive approach. Thus, whilst not providing statistically significant findings, the current results can be considered as constituting very modest support for relationship between Emotion Regulation and affective

outcomes, and thus pathway 6 proposed by the Integrated Model of Affect-related Individual Differences.

In sum, four key pathways proposed by the Integrated Model of Affect-related Individual Differences were sequentially examined using a combination of correlation and regression analyses. As reviewed above, the findings provide very modest support for the Integrated Model of Affect-related Individual Differences. Many of the relationships examined were as hypothesised, replicating the extant literature and consistent with the Integrated Model of Affect-related Individual Differences, but upon testing were statistically non-significant.

5.4.2 Key contributions

Findings across the analyses were broadly yet tentatively supportive of the Integrated Model of Affect-related Individual Differences. The clear majority of relationships captured were not significant, however were in-line with the trends of the literature and the Integrated Model of Affect-related Individual Differences proposed. The findings of the current study tentatively widens the body of evidence supporting the claim that emotional outcomes are influenced by Emotion Regulation, and that affect-related individual differences drive such Emotion Regulation strategies in a manner similar to that outlined by the Integrated Model of Affect-related Individual Differences.

As suggested by analyses however, conclusions based upon the current data should be interpreted with caution. The lack of significant results could suggest the Integrated Model of Affect-related Individual Differences was erroneous. However, as the relationships and differences observed were often consistent with the existing literature and theory, the current findings may be more appropriately interpreted in alternative ways. It could be argued that the divergent findings from the previous study represents the differences between Emotion Regulation styles and Emotion Regulation strategies as captured respectively. It is noteworthy that the extant literature is comprised of a mixture of methodologies and measures, yet presents a relatively consistent account of the relationships between Emotion Regulation and EI (Peña-Sarrionandia, Mikolajczak and Gross 2015). It thus seems unlikely that such an explanation accounts for why analyses failed to replicate the general trends reported by meta-analytic data. Indeed, differentiating between experimental/strategy and questionnaire/style-based studies featured within the meta-analysis does little to resolve this. In-line with this argument, it is unclear why use of the specific adaptive and maladaptive Emotion Regulation strategies would not predict the cold pressor outcomes in a manner consistent with the extant literature. As such, whilst we should expect differences in findings between predictors of Emotion Regulation styles and strategies, the extent of divergence suggests the measurement of Emotion Regulation strategies, rather than styles, is unlikely to be an adequate explanation.

The most likely reason behind the lack of strong effects is the combination of a modest sample size and insufficiently sensitive or insightful measurement of Emotion Regulation. Together, these factors could account for why the majority of relationships were in the expected direction, but why there were few strong and statistically significant findings comparable to the previous study. Weak relationships and small effect sizes across all pathways of the model explored could be attributable to an insufficiently sensitive measure of Emotion Regulation and under-powered study. Thoughts surrounding these limitations will now be fully evaluated in context of the impacts upon conclusions drawn, before future research priorities to overcome such factors in future study are presented.

5.4.3 Limitations

The main limitation of the current study surrounds measurement. Of greatest concern is the measurement of Emotion Regulation. Whereas the previous study adopted questionnaires to capture Emotion Regulation style, the current study used a combination of observations and self-reports to capture use (or non-use) of various specific Emotion Regulation strategies. Observations were deemed useful to capture behaviours that participants may not be particularly well-able to report upon or label. For example, swearing but not considering it aggression, or engaging the experimenter in dialogue during the task but not labelling this as social support searching (Baldwin 2000). However, the majority of strategies reported were cognitive in nature, as evidenced in Table 5.1 above, and thus observations alone would have been insufficient to capture a meaningful overview of the strategies adopted. Various alternative methodological approaches are available, such as manipulation of Emotion Regulation strategy adopted or time-sampling, however as the focus of the research was to capture naturalistic Emotion Regulation and explore the interaction of individual differences as predictors, a combination of self-reports and observations was deemed the most appropriate methodology. The key issue with the data collected is likely the binary nature of the Emotion Regulation strategies. A simplistic approach to analyses was explored in an attempt to extract insights into the Integrated Model of Affect-related Individual Differences, however the lack of measurement sensitivity appears to have likely minimised the identification of any meaningful trends. Whilst the use of a specific Emotion Regulation strategy is an important factor for predicting outcomes, this is surely only a small part of the process, and a more detailed and comprehensive representation of an individual's Emotion Regulation, such as the order or time used, could have supported more meaningful data collection and thus conclusions.

Furthermore, the sample adopted was relatively small, and whilst sufficient enough to examine general differences in usage and patterns of relationships as designed, many important nuances were not controlled for when analysing results. For example, the male participants, on average, persisted for 82.42 seconds longer in the task, and reported less pain and discomfort (1.86 and 0.70,

respectively). This is consistent with the literature which suggests females have a slightly lower pain threshold or tolerance due to various factors such as menstrual cycle phase (Hellström and Lundberg 2000; Kowalczyk et al. 2006; Lowery, Fillingim and Wright 2003; Moro et al. 2011; Stening et al. 2007). Such findings are unlikely to have systematically impacted the conclusions drawn about the Integrated Model of Affect-related Individual Differences, however similar studies with larger samples would facilitate a more nuanced understanding of how such factors interact, for example whether certain strategies are more effective for individuals with a generally lower pain threshold/tolerance.

One further implication of the small sample size was that some strategies were not used by any participants. For example, catastrophic thinking was previously associated with cold pressor task performance (Geisser, Robinson and Pickren 1993; Lu et al. 2007; Leong 2014) and the lack of participants adopting this strategy in the current study represents an opportunity missed for meaningful comparisons to the extant literature. Furthermore, 9 strategies (Behavioural Disengagement, Avoidant Coping, Mindfulness, Threat Appraisals, Maladaptive Humour, Religion, Self-Blame, Venting, and Aggression) were used by less than 10 participants and thus such small prevalence rates could have led to a greater likelihood of presenting erroneous findings. To counter such concerns, all analyses above were re-ran without these scores. The majority of relationships and differences reported remained, with no meaningful changes in conclusions drawn from such analyses.

The current study was designed using best-practice recommendations for the cold pressor task (Birnie et al. 2012), however a number of further limitations alluded to above require discussion to effectively evaluate the scope of support the current study provides for the Integrated Model of Affect-related Individual Differences. One of the main concerns with the design of the current study was the use of the cold pressor task as a method for evoking negative emotions. The lack of significant findings may suggest that the task was too short to capture genuine and consistent individual differences in emotion processing and regulation. In consideration of such concerns, participants interviewed post-task were asked “How did that task make you feel?” and “What emotions, if any, were you experiencing during that experience?”. The majority of participants used the words “pain” and “discomfort” to describe their experience, and the extent to which these represent negative emotions is questionable. However, the existing literature has evidenced the value of the paradigm for exploring the efficacy of different Emotion Regulation strategies (e.g. Edwards and Fillingim 2005; Leong et al. 2015; Weiss, Dahlquist and Wohlheiter 2011), and the current study reported prolific use of a diverse range of relevant Emotion Regulation strategies. Thus whilst not optimal, the cold pressor paradigm provided an interesting basis for exploration of individual differences in Emotion Regulation.

However, by use of the cold pressor task, capturing a meaningful representation of an individual's 'situation selection' regulation was not possible. Questionnaire data was not included for analysis if participants did not attend their laboratory session, and there were insufficient numbers of participants who signed up and completed the questionnaires but did not complete the cold pressor task to explore any differences in individual differences in situation selection. As such, the current study appears to have not captured any meaningful data surrounding situation selection Emotion Regulation. Representing the first stage at which an individual can change their emotional trajectory (Gross 1998), this surely represents a pivotal role in the Emotion Regulation process that is vital to better understand in future works.

Finally, it is worth acknowledging that a simplistic analysis approach was adopted for a complex data set, where there was possibility for many other analysis types. For example, Emotion Regulation strategies could have been grouped based upon their positioning within the Process Model of Emotion Regulation, see Table 5.1, in accordance with the taxonomy presented by Peña-Sarrionandia, Mikolajczak and Gross (2015). Scores for Emotion Regulation use at each stage could be calculated into a scale-scored total of Emotion Regulation strategies. The subsequent analyses could examine whether the stage in the process at which the Emotion Regulation strategy is enacted can be explained by personality and cognitive ability in a manner consistent with the Integrated Model of Affect-related Individual Differences.

5.4.4 Future research

Based upon the current findings, future research adopting the cold pressor task to explore the Integrated Model of Affect-related Individual Differences should adopt a number of key practices. Firstly, to account for the main two limitations discussed, larger sample sizes are needed to accommodate for the complexity of the Emotion Regulation process being studied. Given the number of potential covariates, such as gender and menstrual cycle phase, and the strong situational influence the cold pressor task has, to capture meaningful differences in individual differences demands a more substantive sample. Power analyses should be conducted where possible and should be used as a minimum baseline to ensure meaningful relationships and effects of modest strength can be detected.

Furthermore, simply capturing the use and non-use of strategies does not appear to produce sufficiently insightful results. As such, alternative methods to capture Emotion Regulation during this paradigm are necessary. Previous studies have allocated individuals to adopt certain strategies during the cold pressor task (e.g. Damme et al. 2008; Denson et al. 2014; Leong et al. 2015; Weiss, Dahlquist and Wohlheiter 2011). This strategy may be useful for capturing Emotion Regulation implementation and removes the problems associated with categorising strategies; however it is unlikely to provide insight into the identification or choice components of the Emotion Regulation process. One strategy

absent from the literature but which may represent a fruitful avenue of exploration is time sampling. Here, participants would be asked to note every time they change the way they are managing the task. Time sampling would be able to capture the choice and length of time Emotion Regulation strategies are adopted for, but the process itself may demand attention and self-awareness that are likely to influence results surrounding the attention deployment family of Emotion Regulation in particular. One compromise to such an approach may be to ask participants post-task to talk through their use of Emotion Regulation strategies, using a recording to prompt more accurate timings, and with a particular focus on extracting information on the order and time adopted.

Other experimental paradigms to induce negative emotions may also prove fruitful in structuring examinations of the Integrated Model of Affect-related Individual Differences. For example, the trier social stress task, where participants must prepare a 5-minute speech (anticipatory stress), deliver the speech to 'experts' whom do not react, and then finally to complete a mental arithmetic task. This task is known for generating a diverse range of emotional and physiological responses, and if robust practices are adopted, this may represent a more practical task that can capture spontaneous Emotion Regulation over a longer period of time (Campbell and Ehlert 2012). A common and more simplistic alternative within the extant literature is to examine responses to emotionally-heightened videos to determine how positive mood is maintained and negative mood minimised (e.g. Ehring et al. 2010; Petrides and Furnham 2003). Whilst the manner in which Emotion Regulation is measured will continue to be important regardless of experimental methodology proposed, such methodologies may help overcome limitations of more artificial paradigms like the cold pressor task towards the development of an understanding of Emotion Regulation more relevant for real-world application.

The current chapter represents the second of two studies within this thesis that focus upon Integrated Model of Affect-related Individual Differences exploration and refinement. The subsequent and final chapter will review the modest body of evidence generated to evaluate the Integrated Model of Affect-related Individual Differences and conceptualisations of EI produced, and the manner in which these works may tackle the inconsistencies identified in Chapter 2 towards a practical consensus in understanding of EI. On this basis, further recommendations are made for the study of affect-related individual differences, the Integrated Model of Affect-related Individual Differences, and the fields influenced by these. The implications for understanding, practice and policy are evaluated, before drawing conclusions surrounding the future of EI, and the barriers necessary to further determine the nature and value of EI.

5.5 Chapter summary

The current chapter aimed to provide further empirical evaluation of the Integrated Model of Affect-related Individual Differences, and the three-component conceptualisation of EI from which it was built, proposed in Chapter 3. Designed using the key recommendations for future development proposed in the previous chapter, data on a pseudo-experimental study designed to evaluate the Integrated Model of Affect-related Individual Differences was presented. 54 participants completed the questionnaire presented in the previous study before undergoing the cold pressor task and an interview to determine what strategies were adopted to cope with the negative emotions evoked. Most relationships proposed were non-significant, but consistent with the literature and Integrated Model of Affect-related Individual Differences in direction. As such, support for the Integrated Model of Affect-related Individual Differences from the current study was considered modest. Greater exploration of results suggested that the non-significant findings may be attributable to the relatively small sample size and insensitive measurement of Emotion Regulation. The degree to which the current study represents robust support for the Integrated Model of Affect-related Individual Differences is thus unclear; however alongside results of the previous study, it appears a lucrative structure for future examination. Towards this outcome, the sixth and final chapter following discusses the implications of the Integrated Model of Affect-related Individual Differences in context of the evidence produced, reviews the key contributions made by the current body of work, and draws conclusions surrounding the future of EI.

Chapter 6: General conclusion

6.1 Thesis objective

The main objective of the current thesis was to establish a clearer understanding of EI, its theoretical underpinnings, and the subsequent implications for its application. The main argument explored within this thesis was that by considering the various EI-related constructs as extensions of well-established affective individual differences, the field can benefit from existing frameworks and from these build a stable theoretical structure that can support a more robust understanding of EI.

Towards this broad aim, the second chapter of the current thesis explored current understanding of EI held by Researchers and Teachers of Psychology within Higher Education, Psychology Students, and HR and Recruitment/Selection Professionals. Results revealed that perceptions surrounding EI were diverse, with few contextualising EI using theory or existing individual difference frameworks. The lack of consensuses identified suggested that EI was inconsistently understood and it was argued that the frequent contradictions reflected the problematic state of EI theory. In a bid to provide some clarity, the chapter proceeded to present EI as an umbrella label for three fields of affect-related individual differences. Ability EI was presented as a second-stratum factor of intelligence, Affect-related Personality was defined as a collection of affect-related traits, and Emotion Regulation was proposed as a more robust and theoretically-informed domain to capture constructs previously defined within mixed or competency-based EI models. Situating EI-related constructs as extensions of well-established models of intelligence and personality presented a credible framework that could clearly situate content domain and thus support understanding. Furthermore, Chapter Three drew upon the extant literature surrounding such individual difference frameworks allowing development of an Integrated Model of Affect-related Individual Differences to structure understanding of the mechanisms behind affective outcomes. Chapters 4 and 5 presented questionnaire and pseudo-experimental examinations of the Integrated Model of Affect-related Individual Differences, and thus the conceptualisation of EI, proposed. Findings provided modest support for the pathways proposed by the Integrated Model of Affect-related Individual Differences, and strong support for modelling EI within frameworks of established individual differences. Thus, the thesis as a whole provides a modest but promising set of theoretical arguments and empirical works to support the central arguments put forward within the Integrated model of Affect-related Individual Differences. Specifically, that the various EI-related constructs can be considered as extensions of well-established affective individual differences and when considered in this way they appear to have some, theoretically sound, utility with regards to predicting socially important outcomes.

6.2 Thesis aims

The current thesis presented four specific research aims in Chapter 1 and it seems fitting to return to these aims in closing:

1. Empirically determine the scope and degree of consensuses surrounding EI from the perspective of Researchers and Teachers of Psychology within Higher Education, Psychology Students, and HR and Recruitment/Selection Practitioners
2. Explore an alternative definition of EI as an umbrella label for affect-related individual differences, differentiating cognitive ability, personality trait, and Emotion Regulation-based approaches; the latter is argued to incorporate the 'EI competencies' constructs
3. Explore the theoretical grounding behind an integrated model of affective individual differences, combining the three aforementioned EI approaches with well-established models of personality traits and cognitive abilities
4. Empirically examine the validity of such a model in explaining common EI 'outcomes' (e.g. well-being and job performance), using both questionnaire and experimental methodologies

In the following sections, these aims are explored through a chapter-by-chapter discussion focused on how the thesis addressed these aims, and where relevant, the key contributions of this research are highlighted. Following this brief review based upon the key conclusions drawn, a number of discussion points surrounding limitations and future research are made concerning methodology, measurement, and theory. Finally, potential implications for application, the future of EI, and an overview of contributions are provided.

6.2.1 Chapter 2

The first aim was directly addressed in Chapter 2, whereby the views of academics, students and HR professionals were explored. Participants from these three groups were in-line with the extant literature in the inconsistency with which they described the nature and value of EI (Cherniss et al. 2006; Goleman 2000; Zeidner, Roberts and Matthews 2008). Definitions of EI were linked to traits, coping, emotion regulation, competencies, abilities, and even a 'mix of skills and traits', with no clear sense of the nature of the construct. EI was often defined as an ability, but was never placed in the context of intelligence or cognitive ability. Indeed, the majority of academics sampled estimated the correlation between EI and intelligence to be between -.1 and .1. As discussed shortly, the debate as to whether EI can be contained within intelligence frameworks was subsequently addressed theoretically in Chapters 2 and 3, and empirically in Chapter 4.

Representing the lack of clear consensus on the theoretical grounding to EI, the majority of individuals sampled from all three population groups used EI flexibly as a term for various positive emotional and

social qualities (Dulewicz, Higgs and Slaski 2003; Locke 2005; May and Carter 2012). However, there was consensus on the perceived positive nature of EI. EI was estimated to strongly correlate ($r > .7$) with positive qualities such as agreeableness, and positive outcomes like employability. Such findings highlight the continued necessity to acknowledge EI as a mechanism to facilitate goal achievement, whether that be prosocial or deviant, and again such findings are consistent with the extant literature which predominantly focusses upon only positive outcomes (see Davis and Nichols 2016 for a review of exceptions).

In sum, there is little consensus on the nature of EI in many key stakeholder groups and within the extant academic literature. However, there is consensus regarding the 'positive' nature of EI of all varieties. Chapter 2 identified numerous inconsistencies and contradictions surrounding the nature and value of EI, and highlighted the need for clear and relevant theory to structure further understanding.

The next contribution of Chapter 2 was to present a meaningful theoretical framework that might be able to address the pervasive inconsistencies surrounding popular conceptualisations of EI (Roberts et al. 2010; Zeidner, Matthews and Roberts 2009). Based upon the varied and sometimes contradicting understanding highlighted by the qualitative data, an alternative tri-factor definition of EI was presented. Towards the second aim of the current thesis, three domains of EI-related constructs were successfully re-conceived as extensions of well-established affective individual differences. First, affect-related cognitive abilities typically labelled Ability EI were presented as a second-stratum factor of cognitive ability (MacCann et al. 2014). Second, Trait EI was redefined as Affect-related Personality, representing a compound construct of affect-related traits, many but not all of which are currently observable in well-established models of personality. Third, EI competencies and mixed EI were considered theoretically ambiguous, and Emotion Regulation was presented as a more suitable framework to capture some of the unique content domain they feature.

In reference to the findings of the earlier empirical work, this theoretical refinement of EI has the potential to provide a precise yet simple framework for researchers and practitioners. Such a simple framework can aid clear communication to key stakeholder groups, such as those interviewed, regarding the specific nature of EI-related constructs. Consequently, it has the potential to help alleviate some of the most pervasive inconsistencies in the field. Defined as extensions of well-established individual differences, the nature of EI based upon the three approaches can be simplified – EI can be discussed either in context of cognitive abilities, Affect-related Personality traits, or as the cognitive and behavioural Emotion Regulation strategies and styles. The provocative views expressed by participants can now be refuted using the academic literature, categorised and contextualised

based upon the specific approach to EI adopted. For example, rather than stating EI is “a mix of skills and traits”, it could be articulated that EI, depending upon definition and measurement method adopted, can draw from three key domains: intelligence, personality, and emotion regulation. Such clarifications are likely to minimise the extent of provocative claims surrounding EI, both positive and negative, and support communication of more evidence-based views (Roberts et al. 2010; Zeidner, Matthews and Roberts 2009; Waterhouse 2006). Furthermore, by focussing less upon ‘positive’ content and implementations and presenting a balanced view of EI, the positivity biases associated with EI can be challenged, framing EI more confidently as the individual differences driving affective outcomes, not an ambiguous positive social quality that necessarily makes individuals ‘nicer people’ (Côté et al. 2011; Davis and Nichols 2016). Finally, given the lack of empirical insight and theory highlighted in discourse, the current conceptualisation of EI presents a theoretically-informed framework from which the extant literature can be structured, evaluated, and differentiated from works on existing individual differences. As such, the conceptualisation of EI presented hold promise and may be useful for improving understanding, and thus application, of EI. Indeed, it addresses calls to provide clear boundaries, aligned with traditional individual differences theory, for each of the major EI-related constructs (Zeidner, Roberts and Matthews 2008).

6.2.2 Chapter 3

Adopting these three approaches, Chapter 3 addressed the third aim of the current thesis through the development of a falsifiable Integrated Model of Affect-related Individual Differences. Here, the manner in which the aforementioned EI perspectives interact to influence affect-related outcomes was modelled. Ability EI and Affect-related Personality were situated within their respective theoretical frameworks and proposed as the individual differences driving differences in the selection, choice, and implementation of Emotion Regulation, subsequently determining affect-related outcomes (Joseph and Newman 2010; Mestre et al. 2016). The model proposed appears to be a significant improvement upon the existing atheoretical models by building upon theoretically-driven work to specify the theoretical context and thus boundaries of three EI perspectives, towards a novel structure which could be impactful for explaining the mechanisms behind affect-related outcomes in a wide range of domains.

Overall, the chapter promotes several key developments within the field. First, by tying each EI-related construct to existing models of individual differences it provides a clear, theoretically coherent, and parsimonious description of the three key perspectives. Second, the model posits EI-related constructs as complementary constructs that are meaningfully entwined and which coalesce to produce emotion-relevant behaviour. Third, through this integration, the model provides a framework that can

be used to explore how individual differences in Ability EI and Affect-related Personality influence patterns of Emotion Regulation and subsequent socially-important outcomes.

6.2.3 Chapter 4

Chapter 4 was the first of two chapters addressing the fourth and final aim of the current thesis. Using a cross-sectional questionnaire design, each key pathway proposed by the Integrated Model of Affect-related Individual Differences was explored using a combination of SEM and path analyses. The results were broadly supportive, and provide a number of significant contributions to the understanding of EI. First, Ability EI was represented by three factors: emotion perception, understanding and management, and loaded onto 'g' at a similar strength to fluid intelligence. Consistent with the extant literature using the MSCEIT (e.g. MacCann et al. 2014), Ability EI was successfully situated as a second-stratum factor of cognitive ability. These results are particularly important as alternative measures were adopted for all factors, suggesting these relationships are not attributable to MSCEIT test effects. Findings provide further empirical evidence for the debate surrounding Ability EI as an intelligence (e.g. Mayer, Caruso and Salovey 1999), and present strong support for this pathway of the Integrated Model of Affect-related Individual Differences. Many of the other pathways explored were strongly in-line with the extant literature. For example, Affect-related Personality was modelled as a collection of affect-related traits, with strong links to the broad affect-related domains of the Big Five, replicating the extant literature and Integrated Model of Affect-related Individual Differences (Marjanović and Dimitrijević 2014; Perez-Gonzalez and Sanchez-Ruiz 2014; Petrides, Pita and Kokkinaki 2007). Similarly, the relationships between Emotion Regulation and both Ability EI and Affect-related Personality were mostly consistent with meta-analytic data (Peña-Sarrionandia, Mikolajczak and Gross 2015).

Further significant contributions presented within Chapter 4 were related to deviations from the extant literature. Within the data presented, Ability EI failed to consistently relate to use of all Emotion Regulation strategies as proposed. Many of the non-significant findings were replicated within the extant literature (Peña-Sarrionandia, Mikolajczak and Gross 2015) and in-line with theoretical discussions, interaction effects were explored to determine whether these could account for the non-significant relationships (Hughes and Evans 2016). Only one of the interaction terms was significantly related to Emotion Regulation, and thus the findings represent many interesting nuances for future exploration. Of particular interest is to explore why Ability EI appears to be more strongly related to maladaptive, rather than adaptive, Emotion Regulation strategies (Gohm, Corser and Dalsky 2005; Davis 2013; Goldenberg, Matheson and Mantler 2006; MacCann et al. 2011; Peters, Kranzler and Rossen 2009). Of key importance to the Integrated Model of Affect-related Individual Differences, the inconsistencies in findings suggest that the model may need revision with greater consideration for

the multifaceted nature of Emotion Regulation and the different roles affective individual differences may have for the understanding of different stages within the process.

In sum, Chapter 4 provides modest support for most pathways proposed by the Integrated Model of Affect-related Individual Differences, providing incremental yet valuable contributions to the evidence-base highlighting its potential value for improving understanding of EI.

6.2.4 Chapter 5

Chapter 5 was the second chapter to address the fourth aim of the current thesis. Using the cold pressor paradigm to capture Emotion Regulation in context, strategies previously concluded as adaptive or maladaptive for the cold pressor task were grouped for analyses. Upon testing of pathways 3 to 6 of the Integrated Model of Affect-related Individual Differences, the vast majority of results were non-significant. Upon close examination of the data, relationships and differences were often in the expected direction, but of weak strength (Peña-Sarrionandia, Mikolajczak and Gross 2015). The data provided very modest support for the Integrated Model of Affect-related Individual Differences, however raised a number of important considerations for future research in this field. Of greatest priority, the lack of sensitivity represented by the checklist measurement of Emotion Regulation drove applied suggestions around the exploration of differences between Emotion Regulation styles and strategies, and different stages of the Emotion Regulation Process (Gross 2015), in addition to highlighting alternative experimental approaches and methods of Emotion Regulation measurement, which could provide greater insight into the Emotion Regulation process.

6.3 Limitations and future research

6.3.1 Methodology

The current thesis represents the first empirical examinations of the three approaches to EI defined as extensions of well-established individual difference constructs, and the subsequent integrative model. Therefore, it was deemed appropriate to use predominantly self-report measures through a questionnaire battery, based on the widespread use of this method in the psychological literature and due to lack of viable alternatives. However, there are a number of significant limitations associated with this methodological approach, including measurement error and common method bias. As these have previously been discussed, related concerns surrounding the measurement method adopted are now discussed.

First, data presented in Chapter 4 was collected using a cross-sectional design. Whilst this approach is again common in the psychological literature, it does not allow causal statements to be made as to the direction of relationships. In the current thesis, the Integrated Model of Affect-related Individual Differences proposed that personality and intelligence drive Emotion Regulation, and that Emotion

Regulation drives outcomes, consistent with the extant literature. However, bi-directional effects or reverse causality cannot be dismissed as a potential explanation for the relationships identified. Indeed, one might expect that an individual's emotional outcomes (e.g. friendships, jobs, etc.) may influence personality or selection/implementation of Emotion Regulation in the long-term (Lodi-Smith and Roberts 2007). In an attempt to provide more causal evidence for the Integrated Model of Affect-related Individual Differences, Chapter 5 presented a pseudo-experimental approach whereby questionnaires were completed typically a week before completing the cold pressor task. However, given the lack of meaningful relationships identified, more experimental, longitudinal, and thus causal evidence is needed to draw robust conclusions as to the exact nature of the relationships identified.

Second, self-report measures of EI are susceptible to response bias, especially socially desirable responding (Day and Carroll 2008; Mesmer-Magnus et al. 2006). Whilst not capturing positive or negative intentions directly, many aspects of EI are loaded with positivity bias, as suggested by Chapter 2. For example, the TEIQue used to capture Affect-related Personality includes questions which tap into positive self-perceptions which are susceptible to these biases (Others admire me for being relaxed; I believe I'm full of personal strengths). Furthermore, Emotion Regulation and many of the outcome measures from the data in Chapter 4 may have been affected. For example, very few individuals reported ever using drugs or alcohol to regulate their emotions, and responses to all of the job performance questions were negatively skewed. Socially desirable responding is likely to have contributed to some level of measurement error however as no strong motivation was incited to effect response patterns i.e. they were not being scored to be evaluated for any purpose, the extent to which this influenced conclusions drawn is likely to be small.

Self-rated job performance is particularly sensitive to distorted self-perceptions and thus can be a weak predictor of job performance (Ehrlinger and Dunning 2003; Murphy 2008). Thus, in an attempt to minimise socially desirable responding for the large questionnaire-based study, use of other-rated job performance was planned, necessitating the collection of participant's names and manager's contact details. Unfortunately, Qualtrics, the organisation used to collect some of the data for this study, refuse to collect these personal details as part of their contract of engagement. As such, only participants collected from the other sources could volunteer such information. Given the sensitive emotional data captured by the questionnaire, only 27 participants were prepared to provide this additional information, and as such there was insufficient data to conduct any meaningful analyses on other-reported job performance. Future research should endeavour to build other-rated measures into study design. Research on relational dyads or within workplaces would seem to be particularly fruitful avenues for facilitating collection of other-reported data.

One further significant limitation across the studies presented is the macro approach adopted. In attempting to provide parsimonious and generalisable conclusions through holistic evaluation of the Integrated Model of Affect-related Individual Differences (Petrides and Furnham 2006), many subtle nuances in findings have likely been overlooked. For example, within the analyses of Chapter 2, a more detailed examination of how the qualitative comments linked to the estimated correlation coefficients may have led to more nuanced conclusions surrounding the perceived nature of EI. This limitation is perhaps most relevant to the empirical examinations of the Integrated Model of Affect-related Individual Differences in Chapters 4 and 5 however. For example, the use of broad Affect-related Personality 'total' scores have been critiqued throughout the current thesis, as they represent a broad range of facets which likely obfuscate clear interpretations and nuances when analysed. However, based upon the need for global evaluation and the lack of extant literature or theory to inform which may be the most relevant to examine, total Affect-related Personality scores were considered necessary to minimise the number of analyses conducted and thus chance of drawing erroneous conclusions. A similar concern is expressed in relation to the sub-facets of Ability EI, which if explored individually, could have provided greater insight into the proposed links to Emotion Regulation as hypothesised in Figure 3.2.

Furthermore, in an attempt to look at consistent patterns in relationships structured by the Integrated Model of Affect-related Individual Differences, many individual relationships of interest were not explored in detail. For example, examining why a unique pattern of findings were captured for venting in Chapter 4, whereby venting was significantly linked to Ability EI but not Affect-related Personality, unlike all other strategies captured. Whilst it is possible that these results are erroneous driven by measurement error, self-report bias, or otherwise, exploring the reasons for such findings may have provided a greater insight into the nature of the individual differences driving venting. Given the extent of variables captured within this study however, the possibilities for alternative analysis were great. The findings presented were driven based upon evaluation of the central tenets of the Integrated Model of Affect-related Individual Differences, whilst minimising the number of analyses. Whilst explanations and various analysis could have explored the nuances in findings in much greater detail, this would have likely detracted focus and increased the likelihood of drawing type 1 or 2 errors. In future, these smaller details should be the focus of articles, and instead the bigger picture should be determined by systematic literature reviews and meta-analyses. Whilst essential for the current study to provide holistic model evaluation, this approach is surely just a stepping-stone to encourage future exploration and development of the Integrated Model of Affect-related Individual Differences.

6.3.2 EI theory

The current thesis makes numerous contributions to the understanding of EI theory, and in doing so addresses some of the concerns and contradictions surrounding the nature and value of EI. Building upon the existing literature, EI is proposed as an umbrella label representing affect-related extensions of well-established individual differences. Specifically, three approaches were proposed: affect-related cognitive abilities, personality traits, and emotion regulation. Whilst consistent with much of the extant literature, a robust body of evidence is needed to validate the contributions and developments made. Of primary focus for the development of the field, future research adopting an Ability EI perspective should further refine the structure and scope of primary abilities underpinning the processing of affect-related information in context of the CHC model. Future research adopting the personality perspective should endeavour to collate the fields of Personality and Affect-related Personality to avoid construct proliferation and thus confusion, and develop tools and taxonomies to help academics and practitioners identify specific traits of relevance. For Emotion Regulation, the greatest value is likely from furthering understanding of the regulation process, determining whether the recently espoused identification-selection-implementation structure is a suitable and optimal framework for understanding, and whether this can synthesise the inconsistencies in relationships to distal individual differences within the extant literature.

The three approaches to EI were proposed based upon a comprehensive review of theoretical and empirical works and the current thesis represents just the latest stage in theory refinement. Correlational analyses from Chapters 4 and 5 suggest modest correlations between these approaches, as to be expected from related but distinct content domain, with each demonstrating the expected pattern of relationships to personality and cognitive ability (Mavroveli et al. 2008; Peters, Kranzler and Rossen 2009; Saklofske, Austin and Minski 2003; Zeidner and Olnick-Shemesh 2010). There are proponents of many other EI concepts, and the next stage in theory development will be determining what more can be extracted from the current literature. There are innumerable social skills and other affective qualities that have been associated with EI which could represent valuable bases for exploration. For example, previous research under the guise of Trait EI explored self-perceptions surrounding Ability EI (stream 2; Petrides and Furnham 2001), and whilst self-perceived cognitive ability, or indeed Emotion Regulation, currently has no clear position within the three approaches suggested, the substantial body of existing empirical works may be of interest (Davis and Humphrey 2014; Furnham 2001; Furnham and Buchanan 2005; Gomez-Baya et al. 2017). For example, Kluemper (2008) found the incremental validity coefficients between Trait EI and coping, stress, and life satisfaction, to decrease substantially when core-self evaluations were added as an additional control variable. Second, Alexithymia was part of the original content domain sampled to produce Trait EI,

and is typically used as a construct against which EI measures are validated (e.g. Schutte et al. 1998). Alexithymia is defined as (a) a difficulty identifying feelings; (b) a difficulty describing feelings to others; (c) a restricted imagination and (d) an externally oriented cognitive style (Taylor and Bagby 2000). Given that such qualities have been associated with both cognitive and Emotion Regulation processes (Parker, Taylor and Bagby 2001; Taylor and Bagby 2000; 2004; Taylor, Bagby and Parker 1997), whether alexithymia can be explained or expand the model of Ability EI or Emotion Regulation could be a particularly meaningful point of exploration given the general population prevalence (Kokkonen et al. 2001, see Mason et al. 2005 for UK sample). In one final example, Theory of Mind, the ability to infer what another may be thinking or feeling (Premack and Woodruff 1978; Schlinger 2009), could similarly help to expand Ability EI models. As some tests have already been used as proxy for emotion perception ability (e.g., Guastella et al. 2010), Theory of Mind may too expand the proposed approaches to EI.

6.3.3 Measurement

Historically, EI measurement has been problematic, with claims that "a good deal of EI research has been conducted without particularly advanced psychometrics" (Matthews, Zeidner and Roberts 2007: 24). As reviewed in Chapter 4, these measurement issues have often stemmed from a lack of theoretical clarity. Given the central role of theory in causing, and thus resolving, such issues, the theoretical developments presented in the current thesis hold promise for informing and inspiring new measure development.

The measurement and structure of Ability EI has been dominated by the MSCEIT (Mayer et al. 2003, formerly MEIS) tool. For both reasons of financial and practical nature, the current thesis adopted alternative measures: an optimised version of the Reading Mind in the Eyes Test (Baron-Cohen et al. 2001; Olderbak et al. 2015), and short versions of the Situational Test of Emotion Management and Situational Test of Emotion Understanding (Allen et al. 2014; 2015). Findings from data presented in Chapter 4 suggest that these other measures provide a viable alternative to the proprietary MSCEIT. The results revealed that Ability EI assessed in this way can be successfully modelled as a second stratum factor of cognitive ability, providing a conceptual replication of the results of MacCann et al. (2014). Due to the financial costs associated with the MSCEIT, there have been a number of calls for alternative free and open-access measures (Mestre et al. 2016). The measures adopted for the current study addresses these calls and may offer wider opportunities for research projects to adopt Ability EI.

However, there is still much work yet to be done with Ability EI measurement. Perhaps of greatest importance is the comprehensive representation of the full scope of mental abilities that are situated within Ability EI (Mestre et al. 2016). This will have multifaceted implications for the understanding,

measurement, and application of Ability EI. For example, such works may facilitate research to determine whether there is a meaningful difference in conscious and automatic processing of emotional information, and if so, the manner in which this could be better represented within theory and subsequent measurement tools (Fiori 2009). Diversification of measurement types would also be of benefit. Due to the nature of the facets captured and questionnaire measurement, Ability EI measures often relate modestly to verbal ability. Whilst theoretically expected due to underlying links to 'g', the heavy emphasis on words to complete these assessments may be distorting measurement and disguising meaningful nuances. Using graphical representations of emotion may support the development of more user-friendly assessments of EI that are less reliant upon verbal ability (Meschtscherjakov, Weiss and Scherndl 2009) and thus could transcend language, culture, and age (e.g. Jaeger et al. 2017; Riley 2013; Sterkenburg, Jeon and Plummer 2014).

The previous measurement of Affect-related Personality (formerly Trait EI) has drawn upon a diverse range of measures capturing varied content domain. Defined as a collection of affect-related traits, the most appropriate measures of Affect-related Personality are likely to be the affective sub-facets of well-validated Big Five measures. For example, the Anxiety and Anger sub-facets of Neuroticism. The current thesis adopted the TEIQue-SF (Petrides and Furnham 2001) in order to contextualise Affect-related Personality within the broad Big Five domains, however as suggested by the issues with modelling identified in Chapter 4, and previous discussions on its efficacy in Chapters 3 and 4, the TEIQue is clearly sub-optimal. The scale captures self-perceived abilities and other competency-based domain, and has been heavily criticised for domain sampling which makes item-level analysis problematic. The use of the TEIQue as it currently stands is likely to become more redundant as personality models and thus measures become more comprehensive in coverage of the affective domains, and research begins to explore facets of particular relevance rather than broader 'total' compound constructs.

Towards this goal, there are a number of key developments necessary for Affect-related Personality measurement. Measures should be developed whereby content domain represents only personality, and cannot be used to form misleading 'total' scores. Whilst a measure that captures all affect-related domain of a comprehensive theory of personality would surely be of value, progress in specific domains should not be delayed for comprehensive models. The development and validation of measures which captures a small portion of Affect-related Personality domain are surely of value, and may indeed help support the diversification of personality content domain. Researchers exploring Affect-related Personality are subsequently recommended to adopt a more focussed approach, exploring the facets of Affect-related Personality domain which are most relevant, theoretically and practically, for the work conducted. Supporting this aim further, more critical examination of the

content domain of current measures would help inform against use of atheoretical tools and encourage more theoretically-informed works.

The issues surrounding Emotion Regulation measurement have been discussed throughout the current thesis, particularly in Chapters 4 and 5. In the first empirical study evaluating the Integrated Model of Affect-related Individual Differences, the self-reported Emotion Regulation measure was developed based upon adaption of theoretically-relevant extant scales (e.g. COPE Inventory; Carver, Scheier and Weintraub 1989). The subsequent Emotion Regulation questionnaire captured ten key strategies, two from each of the five families of strategies proposed by the Process Model of Emotion Regulation (Gross 1998). The sub-scales demonstrated unidimensional structures, typically with high factor loadings and expected patterns of findings, however the extent to which they accurately and appropriately captured Emotion Regulation was unclear without more comprehensive psychometric testing (Hughes 2017). In the second empirical study evaluating the model, Emotion Regulation was measured by use of a simplistic checklist completed through a combination of self-reporting and observations. Emotion Regulation captured in binary form was considered insufficiently insightful, being associated with predominantly weak and non-significant findings contrary to the extant literature. Future research requires more theoretically-informed and psychometrically-robust Emotion Regulation measurement. For example, studies adopting a similar (quasi-) experimental methodology should aim to capture a more detailed account of Emotion Regulation with time sampling, interviews, observations, allocation of Emotion Regulation strategies, and/or detailed post-task Emotion Regulation recollection.

Future research should also prioritise differentiation in the measurement of Emotion Regulation strategies and styles. Emotion Regulation strategies are best observed within specific contexts, such as the cold pressor task, with particular value through capturing additional details such as Emotion Regulation family, time, and order used. Emotion Regulation styles represent an individual's use of Emotion Regulation over a longer period of time across situations, and are thus most easily explored using questionnaires. Here, particular value in Emotion Regulation measurement may be added by acknowledging context, and exploring whether Emotion Regulation styles change in environments such as the workplace, to identify nuances in Emotion Regulation use (Davis and Humphrey 2012b). Finally, when measuring Emotion Regulation it should be explicitly acknowledged whether Emotion Regulation identification, selection, or implementation is being captured. It is likely that the different stages will require different measurement methods. For example, one might expect an experimental approach slowly escalating the emotional demands of participants best capable of capturing the identification stage, anticipatory tasks may help evaluate participant decision-making as part of the selection stage, and observations and questionnaires may be best suited to capture Emotion

Regulation implementation. Across all suggested methodologies, the Integrated Model of Affect-related Individual Differences appears a fruitful structure to examine how the individual differences driving such stages may differ.

The value of the Integrated Model of Affect-related Individual Differences for supporting future measurement development is well-evidenced by the latest EI measure development: the Rotterdam Emotional Intelligence Scale (Pekaar, Bakker, van der Linden and Born 2018). Following a brief acknowledgement of both ability and personality perspectives of EI, the paper endeavoured to validate a scale which differentiates between self- and other- orientated emotional appraisal and regulation. Items include: 'I can empathise with the people around me' and 'I am in control of my emotions'. Given the lack of focus on cognitive abilities, use of the typical-performance measurement paradigm, and weak correlations to IQ (-.09 to .21), these items do not capture Ability EI and thus emotional appraisal. Similarly, whilst correlations to personality factors ranged from .04 to .58, the item content represents self-perceptions of abilities rather than tendencies or behavioural preferences, and thus cannot be considered Affect-related Personality. Finally, the measure seemingly captures not Emotion Regulation itself but self-perceived ability or confidence for Emotion Regulation (e.g. 'I can suppress my emotions easily'). Evidencing its potentially mixed state, correlations up to .80 with an EI competency measure (which itself conflates various theoretical perspectives; Brasseur et al. 2013) were reported. Thus, in sum, the measure looks to be atheoretical, capturing neither personality, Ability EI, nor Emotion Regulation, with item content seemingly best representing self-perceptions surrounding Emotion Regulation or emotional abilities. Whilst capturing such constructs may be of interest in the expansion of EI domain, this mixture of perspectives looks to have created an atheoretical measure likely to further perpetuate the confusion highlighted by Chapter 2 surrounding the theoretical nature of EI and its value. Such work is just one example of how current research in the EI domain is applied without a unifying framework, and thus how the introduction of the theoretical perspectives and model proposed in Chapter 3 could inform future measurement design and evaluation. By explicitly stating the approach to EI being captured, future works can draw from the extant theoretical literature to guide scale development, content, and validation towards more theoretically- and psychometrically- sound measurement.

6.3.4 Integrated Model of Affect-related Individual Differences

Based upon the existing literature, and empirical works presented in the current thesis, the Integrated Model of Affect-related Individual Differences represents a fruitful structure to support understanding of affect-related individual differences. The model represents a succinct, theoretically-driven, model of the way in which the various approaches to EI interact to predict affective outcomes. However, the complexity of the processes and phenomena being studied suggests the model is unlikely to represent

a comprehensive understanding, and thus will be subject to various developments as the body of evidence grows to inform changes. For reasons discussed in detail in Section 4.4.2 the following recommendations are given to support future research to generate the most insightful body of evidence: a) adopt a diverse range of methodologies, b) adopt a diverse range of measurement methods, c) exploration of alternative models, pathways, or approaches, d) exploration of interaction effects, e) research in context, differentiating between Emotion Regulation styles and strategies, and f) capturing a diverse range of outcomes. Based upon findings of the empirical works exploring the Integrated Model of Affect-related Individual Differences in the current thesis, two further areas of focus seem likely to be fruitful and are discussed in detail below.

First, analyses conducted in Chapter 4 suggested Ability EI was most meaningfully related to maladaptive Emotion Regulation strategies, such as substance use, and only weakly related to the implementation of adaptive or neutral strategies. Such results are consistent with the broad trend of the coping literature (Davis 2013; Gohm, Corser and Dalsky 2005; Goldenberg, Matheson and Mantler 2006; MacCann et al. 2011; Peters, Kranzler and Rossen 2009). As such, detailed empirical explorations of the different drivers of Emotion Regulation strategies, differentiating between adaptive and maladaptive within the context of examination, would be especially useful in determining whether the pattern of results identified can be consistently modelled. Of particular interest based upon the current findings would be to explore the role of Ability EI early in the Emotion Regulation process, and the manner in which it drives the need for Emotion Regulation (Emotion Regulation Identification) by determining emotional attention and arousal (Davis and Humphrey 2012a; Farrelly and Austin 2007; Martin and Thomas 2011; Salovey et al. 1999). Similarly, the influences of Affect-related Personality later in the Emotion Regulation process could be further explored. Analogous to Davis and Humphrey (2014), with its central role for the development and implementation of successful coping mechanisms (Petrides, Perez-Gonzalez and Furnham 2007), exploring the moderating role of Affect-related Personality in the relationship between Emotion Regulation and outcomes appears a similarly fruitful pathway for investigation.

The Integrated Model of Affect-related Individual Differences was built upon a significant body of theoretical and empirical literature, however across all findings presented in the current thesis, Ability EI and Affect-related Personality accounts for only part of the understanding of affective outcomes. Ability EI and Affect-related Personality appear to be key predictors of affect-related outcomes; however there are many mechanisms by which affective outcomes are influenced. A key priority for Integrated Model of Affect-related Individual Differences development is thus the theoretical postulation and empirical consideration of alternative pathways. To provide a consistent viewpoint from which to evaluate the Integrated Model of Affect-related Individual Differences, the empirical

works presented in Chapters 4 and 5 focused on the big-picture evaluation and subsequently explored few alternative pathways. However, findings from the current thesis suggest that the Integrated Model of Affect-related Individual Differences presents only part of a comprehensive understanding of outcomes. For example, Emotion Regulation only accounts for part of the relationship between Ability EI/Affect-related Personality and the affective outcomes. As such, different pathways, additional constructs, and various other modifications to the Integrated Model of Affect-related Individual Differences may well support a more refined explanation.

As discussed in Chapter 2, it seems likely that motivation may be one potential mechanism to enrich understanding of the relationship between Affect-related Personality and Emotion Regulation. Both personality and Emotion Regulation have been considered goal-orientated (Grant and Mayer 2009; Gross 2015; Parks-Leduc, Feldman and Bardi 2015) and the way they could interact has been tentatively modelled within the Integrated Model of Affect-related Individual Differences in Chapter 3 (see Figure 3.1). Affect-related Personality is proposed to drive motivation, which influences what emotional situations we attend to, the choice of Emotion Regulation strategy to adopt, and the way we implement it. Future works adopting experimental methods to explore differences in Emotion Regulation following manipulation of hedonic and instrumental motives (see Tamir 2016) may be particularly insightful to determine the role of motivation in bridging Affect-related Personality and Emotion Regulation towards goal achievement. Here, value would be added from the Integrated Model of Affect-related Individual Differences as a guiding framework, the exploration of Affect-related Personality subfacets, and use of Emotion Regulation motivation taxonomies (e.g. Tamir 2016). Motivation is just one example of possible additional constructs and pathways that could refine understanding. Other candidates include attention, mood, and contextual factors. As it stands, the Integrated Model of Affect-related Individual Differences is a fruitful model to structure understanding, however other mechanisms are clearly relevant to a comprehensive understanding of affective individual differences and thus phenomena.

6.4 Application, Policy and practice

Numerous applications of EI have been proposed. There have been many to discuss application of EI for workplace interventions (Bozionelos and Singh 2017; Clarke 2006; Joseph et al. 2015; Lindebaum 2009; Lopes 2016; O'Boyle et al. 2011; Spencer 2001), educational interventions (Zeidner, Roberts and Matthews 2002; Mayer and Cobb 2000; Nathanson et al. 2016; Ulutaş and Ömeroğlu 2007; Viguer, Cantero and Bañuls 2017; Zeidner, Roberts and Matthews 2002), recruitment and selection practices (Cadman and Brewer 2001; Iliescu et al. 2012; Lievens, Klehe and Libbrecht 2011; Zeidner, Matthews and Roberts 2004) and healthcare practices (Cadman and Brewer 2001; Mikolajczak and Van Bellegem 2017; Sarabia-Cobo et al. 2017).

Based upon the turbulent nature of EI theory highlighted in Chapter 2, and problematic state of EI measurement illustrated throughout this thesis, application seems premature and potentially dangerous. Thus, one simple recommendation seems most appropriate: a complete moratorium on practical EI application until robust bodies of evidence surrounding its theoretical nature, and a subsequent range of valid measurement tools, are available. Should the various EI-related constructs continue to be defined as extensions of well-established affective individual differences, the current thesis is likely to be valuable in supporting and structuring subsequent developments towards the practical application of EI. For example, following further positive validation of the EI perspectives proposed, the theoretical developments made can be used to inform the development and validation of psychometrically sound measures for each perspective (e.g. Hughes 2017; Miners, Côté and Lievens 2018). Such works are fundamental before practical proof-of-concept works can be conducted to inform applications.

For academics and practitioners alike, conceptualising EI as cognitive abilities, personality traits, and emotion regulation strategies represents a simple structure to facilitate understanding of the nature and theoretical grounding of different aspects of EI. This conceptualisation is not too dissimilar from previous attempts at explaining EI (e.g. Ashkanasy and Daus 2005; Caruso 2003) and should thus not be a considerable obstacle to change. Similarly, whilst changes are likely to be made to the Integrated Model of Affect-related Individual Differences, it is a relatively simple structure that can be used to frame interventions or explanations of phenomena in a more theoretically-relevant and thus hopefully efficacious manner. As such, the current thesis presents a valuable resource to support theoretically-meaningful applications of EI across all contexts. For academics, significant developments are likely to be made by exploring EI using these structures (and subsequent iterations), adopting the recommendations presented throughout section 6.3 and throughout the current thesis, to build the most robust body of evidence possible to counter previous inconsistencies and contradictions and to further develop understanding in countless applied fields.

Practitioners in the field are heavily encouraged to re-examine their models in context of the theoretical work presented, particularly those that have been commercialised and are tied to specific proprietary measures (e.g. JCAGlobal 2017). Whilst theoretical qualities are likely not of imperative financial priority for test publishers, it is likely to be beneficial for three key reasons: a) EI theory is continuously developing and the extant literature would allow structure and justification for development and refinement, b) the existing body of literature can also provide evidence for the value and application of the theory/measure and theoretical clarity could become a Unique Selling Point whereby the critiques surrounding EI (and existing/competitor models and measures) such as those highlighted in Chapter 2, could be refuted, and c) greater collaborative works could be conducted with

researchers and academics, encouraged by theoretically-appropriate and robust measures, allowing greater discussion, engagement, and likely application of the model and measure. Based upon the symbiotic benefits of such works for both understanding and application, the current author welcomes contact from any practitioners interested in furthering this discussion.

Being able to articulate the specific definition and theoretical grounding of EI adopted is vital for best evidence-based practice. There is not yet conclusive evidence that EI measures and interventions informed by theory are more reliable, valid or effective. Whilst this seems quite likely given the benefits of clarity in the context of the diverse contradictions in the EI field, this is not the sole justification for adopting theoretically-informed works. Without an understanding of the exact nature of the constructs being discussed, there is little opportunity to gain a consistent understanding of the processes by which EI operates or the way EI interventions impact outcomes. It is for this reason why theoretical developments in EI, and thus the current thesis, looks to be of benefit for practice.

The current thesis thus looks to inform a diverse range of applications. For example, practitioners in the selection field could use the structure provided within Chapter 2 to systematically consider individual differences of relevance in affective behaviour and occupational outcomes. Adopting the structure proposed within the current thesis could support identification of facets of EI most relevant to the job demands, which may be a valuable addition to facilitate selection. For example, in the case of selecting an individual to work alone and predominantly by email, anger/aggression-related Affect-related Personality traits may be useful to negotiate frustrations. Furthermore, the model proposed in Chapter 3 may be useful to support recruitment and selection where the emotional demands are more complex. For example, EI is considered vital for nursing practice due to the impact upon professional practice, communication with patients, and ability to deal with diverse and distressing job demands (Akerjordet and Severinsson 2004; Cadman and Brewer 2001). Here, acknowledging the multifaceted nature of EI could be beneficial to appreciate both ability and trait-based individual differences of importance and how they may contribute to regulation and thus performance.

The current thesis also represents a useful resource for individuals and practitioners interested in developing EI. The main contributions will be towards informing theoretically-appropriate definition and measurement of EI, intervention content and evaluation, and interpretation of findings. For example, given that crystallised intelligence is capable of significant development (Horn and Cattell 1967), then interventions involving the fundamental components of Ability EI, such as emotion perception (to recognise and label emotions), may be especially beneficial for supporting early EI development (Herpetz, Schütz and Nezlek 2016; Hozdic et al. 2017). Example materials could include children's books such as The Colour Monster (Llenas 2015), which presents emotions as colours

(similar to the Mood Meter used within the RULER programme; Brackett et al. 2009), or films such as Pixar's (2015) 'Inside Out' where characters are given to each of the main emotions (except surprise which was removed as it was suggested that fear could fulfil this function). Structuring the design and evaluation of such interventions using the Integrated Model of Affect-related Individual Differences could support exploration of their impacts upon emotional recognition, understanding and action and help inform whether such resources have value as an appropriate intervention of this theoretical nature for young age groups.

The latest meta-analytic data suggests EI training has a moderate impact on EI (d = .51; 95% CI = .41, .60), with greatest efficacy for interventions built upon the Ability EI model (d = .60, 95% CI = .48, .71; Hodzic et al. 2018). However, in context of work discussed in the current thesis, measurement and theoretical adoption for most trait and competency-based EI works have been inconsistent and problematic, and thus estimates for intervention efficacy should be considered cautiously. The current thesis could therefore also support reconsideration of this existing literature in context of the theoretical clarity in EI definition and intervention content adopted to draw more robust estimates.

Should empirical evidence continue to be supportive of the conceptualisation of EI and subsequent Integrated Model of Affect-related Individual Differences presented, a significant challenge for all EI stakeholders is to differentiate this approach from existing, atheoretical, models. Wide dissemination of the Integrated Model of Affect-related Individual Differences to improve general awareness and understanding, which was highlighted as problematic by data presented in Chapter 2, is surely of key priority. Publication of works from the current thesis is but the beginning. Given the theoretical clarity established within the current thesis, a more critical stance of atheoretical work should also be adopted. Whilst such work is often conducted with good intentions, a number of individuals are profiting from disseminating work and applying interventions which cannot be empirically justified, which are evaluated by testimonials only, and which bring the title 'EI' into disrepute. EI researchers need to take greater responsibility for the implications of their work within all roles, rejecting ethics proposals or journal articles which adopt atheoretical stances or make misleading/exaggerated claims, tutoring students to better understand the theoretical grounding to EI concepts, and resolving contradictions wherever experienced. As such, publication of works on EI using Registered Reports are recommended, whereby the theoretical grounding to the research can be scrutinised before the work is conducted, thus limiting the publication of theoretically-ambiguous work or cherry-picked findings (Chambers 2013; Nosek and Lakens 2014). Here, Chapter 2 of the current thesis looks to be a useful source of theoretical clarity to support reviewers in this process. Adopting further Open Science practices should also be encouraged wherever possible (Nosek and Lakens 2014). For example, anonymous data should be published online alongside publications to support exploration of

alternative models and pathways, explore questionable practices, and to force the removal of problematic barriers to data-access established by EI test publishers (Cartwright and Pappas 2008; Landy 2005).

6.5 What is the future of EI?

Based upon the increasing rate of EI research and application in recent years (see Figure 1.1), EI looks to grow in popularity as a research field. As such, the theoretical clarifications and subsequent Integrated Model of Affect-related Individual Differences proposed represents a promising structure for improving understanding and prediction of many phenomena. For example, as electronically-mediated communication has become more prevalent, communication of emotions through texts, emails or instant messaging represents an opportunity to explore EI in context. Emoticons, small symbols of faces representing emotions, sent through such electronic means can be used to express emotion (Novak et al. 2015; Shao-Kang 2008) with various functions ranging from marking attitudes or jokes, to emphasising or softening messages (Skovholt, Grønning and Kankaanranta 2014). Emoticons can be used as a quick way to represent or even measure emotions, sensitive enough to capture differences in both strength and arousal of emotion (Meschtscherjakov, Weiss and Scherndl 2009). Whilst new terms such as cyber emotional intelligence (Youssef and Youssef 2011) or Emoticon Intelligence (Manos 2012) are likely to be unnecessary, EI could play a significant role in structuring understanding of the interpretation (Ability EI), frequency (Affect-related Personality) and purpose of Emoticon use (ER). Indeed, the latest research in this field has already established links between personality and the identification with, and use of, emoticons (Marengo, Giannotta and Settanni 2017; Oleszkiewicz et al. 2017). Examinations of emoticons seems of particular importance as the use of symbols to represent emotions can transcend language, culture, and age (e.g. Jaeger et al. 2017; Riley 2013; Sterkenburg, Jeon and Plummer 2014). As such, exploring emoticons in context of EI and the Integrated Model of Affect-related Individual Differences proposed represents one of many exciting and practical bodies of research with many implications for the future of affect-related individual differences.

Following further theoretical refinement and measure development, one hopes to also see greater understanding of where and how EI can be applied effectively. Media programs and school-based interventions may be increasingly used as method for improving a society's level of EI (Schutte and Malouff 2016). As EI can underpin both positive and negative outcomes (Davis and Nichols 2016) and may be more impactful for certain groups of individuals than others (Hodzic et al. 2018), such interventions need to be theoretically-informed and designed and implemented purposefully. Identifying key target populations and negotiating how to deliver such interventions should be of significant priority. For example, determining whether EI is a beneficial quality for health care

professionals and if so which specific facets are sufficiently malleable to be developed into professional training (Vandewaa, Turnipseed and Cain 2016). Individuals particularly interested in exploring the utility of the proposed integrative model and the processes underpinning intervention efficacy should explore the impacts of Ability EI and Affect-related Personality interventions upon subsequent emotion regulation identification, selection and implementation.

With respect to EI itself, the current thesis presents an impetus for several key developments in understanding. Certainly, many of the main critiques, concerns and inconsistencies surrounding the term have been abated following greater theoretical refinement. However, following likely lines of development for each of the three components, EI could become a redundant term for affect-related individual differences in the long-term. Should empirical evidence continue to define Ability EI as a second-stratum factor of intelligence, Ability EI appears likely to become an established sub-facet of cognitive ability (MacCann et al. 2014). Data presented in Chapter 4, using alternative measures of both EI and cognitive ability provides reasonable encouragement for such a view. If embraced and refined within models such as the Cattell-Horn-Carroll, the Ability EI label will likely change in accordance with the existing model facet names and to disassociate itself from research conducted upon other EI perspectives (Mestre et al. 2016). Similarly, should Affect-related Personality be refined to capture only affect-related traits as theoretically intended, the label will become redundant. A more diverse range of affect-related traits are being incorporated into personality models as they develop to become more comprehensive of content domain, leaving Affect-related Personality as a label to represent only the affective components of personality. If, in accordance with recommendations, researchers move away from examining broad totals that represent a diverse range of constructs to researching specific traits for specific purposes, then Affect-related Personality as a label will be meaningless, with current content domain used to expand personality models. Finally, Emotion Regulation has operated in relative isolation to EI, and few works have attempted to integrate such constructs (see Elfenbein and MacCann 2017, as an exception). As such, 'EI' as a term is likely to become historical, with the content domain currently discussed refined then incorporated into existing models of individual differences.

Whilst such a view could be considered negative, these developments would in-fact lead to greater consideration of affect within many key fields of literature, recognising the value of, and embracing the affect-related individual differences currently researched under the banner of EI. Furthermore, the changes suggested will not occur immediately. Thus, the future of EI is in the nitty-gritty of how these developments can take place; in the refinement and integration of content domain. As noted above, data from the current thesis has focussed upon the bigger picture in order to evidence the Integrated Model of Affect-related Individual Differences, however a great deal of work is necessary

to build a sufficiently robust and detailed body of evidence. Works exploring the minutiae detail will likely be of greatest impact. For example, priority developments include clarification of the mental abilities underpinning Ability EI and building a comprehensive list of affect-related traits structured within a suitable personality framework. The current thesis aims to guide these future developments, representing a key source of insight and structure to facilitate such important works.

6.6 Overview of contributions

- Contradictions and theoretical inconsistencies held by three key stakeholder groups have been identified. Attributed to a lack of consistent theory, a diverse range of EI definitions, (positive) biases, and extreme views surrounding the value and application of EI were reported. By highlighting the nature and scope of such perceptions, the fundamental barrier towards establishing EI as a credible construct: theoretical clarity, was elucidated.
- EI-related constructs were re-conceptualised as extensions of well-established individual differences. Common inconsistencies in theory surrounding ability and trait definitions of EI were resolved. Due to shared content domain, Emotion Regulation was presented as a replacement to the problematic mixed and competency models of EI. The resultant Ability EI/Affect-related Personality/Emotion Regulation framework has the potential to support refutation of contradictions and to establish a point of consensus which will likely improve understanding and theoretically-relevant applications of affect-related individual differences.
- The Integrated Model of Affect-Related Individual Differences proposed is the first theoretically-driven integrative structure of EI. Explicitly situating Emotion Regulation as the process by which Ability EI and Affect-related Personality impact outcomes, the model presents a viable structure to explore the mechanisms involved in affective outcomes, actions, and thoughts, and thus the understanding and implementation of EI in practice.
- Empirical evidence is presented to determine the efficacy of such conceptualisations and models of EI for structuring a meaningful account of the individual differences underlying psychological well-being, life satisfaction, aggressive behaviour, friendship quality, job performance and performance during a coping task. Using non-proprietary measures to overcome misleading test effects, findings replicate the existing literature with respect to Ability EI as a second-stratum factor of intelligence. Theoretical arguments for Affect-related Personality as a collection of Affect-related traits were also supported through strong correlations to the Big Five. Providing modest support for pathways of the Integrated Model of Affect-related Individual Differences proposed, findings highlight the complexity of the Emotion Regulation process, identifying vital priorities for development in the field.

Acknowledgement of identification, selection and implementation processes in Emotion Regulation may provide the basis for a more comprehensive future understanding. Furthermore, the model provides a proposed structure and thus impetus for further exploration of the interactions between, and divergent/convergent roles of, personality traits and cognitive abilities in the Emotion Regulation process.

In sum, the current thesis provides promising yet early empirical evidence to suggest that by considering the various EI-related constructs as extensions of well-established affective individual differences, EI is not a redundant concept. Future work should focus upon further embedding Ability EI within cognitive ability frameworks, integrating Affect-related Personality and personality content domain towards a comprehensive model of personality, and acknowledging the roles and complexity of Emotion Regulation towards the understanding of affective outcomes. Furthermore, evidence from the extant literature reviewed in Chapter 3, and the questionnaire and pseudo-experimental studies presented in Chapters 4 and 5, suggests the Integrated Model of Affect-related Individual Differences represents an initial theoretical framework that can structure theoretical and empirical explanations of affective phenomena and thus appropriate applications of EI. Future work should build upon the findings presented to support a more comprehensive understanding of affect-related individual differences and the manner in which they coalesce to determine affective outcomes.

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8. Appendices

8.1. Ethics approval

8.1.1 Study 1.1 Certificate of ethical approval

Certificate of Ethical Approval

Applicant:

Thomas Evans

Project Title:

Academic's Perceptions and Understanding of Emotional Intelligence

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Medium Risk

Date of approval:

13 October 2016

Project Reference Number:

P46110

8.1.2 Study 1.2 Certificate of ethical approval

Certificate of Ethical Approval

Applicant:

Thomas Evans

Project Title:

Student's Perceptions and Understanding of Emotional Intelligence

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Medium Risk

Date of approval:

13 October 2016

Project Reference Number:

P46106

8.1.3 Study 1.3 Certificate of ethical approval

Certificate of Ethical Approval

Applicant:

Thomas Evans

Project Title:

Human Resource Professionals' Perceptions and Understanding of Emotional Intelligence

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Medium Risk

Date of approval:

07 September 2016

Project Reference Number:

P45609

8.1.4 Study 2 Certificate of ethical approval

Certificate of Ethical Approval

Applicant:

Thomas Evans

Project Title:

An Integrated Model of Affect-Related Individual Differences

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Medium Risk

Date of approval:

25 May 2016

Project Reference Number:

P41970

8.1.5 Study 3 Certificate of ethical approval

Certificate of Ethical Approval

Applicant:

Thomas Evans

Project Title:

Testing the Integrated Model of Affective Individual Differences Using the Cold Pressor Paradigm

This is to certify that the above named applicant has completed the Coventry University Ethical Approval process and their project has been confirmed and approved as Medium Risk

Date of approval:

22 August 2016

Project Reference Number:

P45561

8.2 Participant information sheets

8.2.1 Study 1.1 Participant information sheet

Study Title: Psychology Academics' Perceptions and Understanding of Emotional Intelligence

What is the purpose of the study? The current study aims to assess the perceptions and understanding of emotional intelligence held by teaching or researching psychology academics through an open-ended, free-response questionnaire.

Why have I been approached? You have been approached to participate as many individuals are required. Participants are required to be older than 18 for ethical reasons. As academic perceptions are the focus of the study, to participate you must teach or research psychology in an academic environment.

Do I have to take part? Not at all. Participation is voluntary. If you change your mind, withdrawal is possible by emailing the researcher with your participant number at any time during, or up to two weeks after data collection. Withdrawal will ensure data will be permanently deleted and not included in the research. There are no consequences of withdrawing and no reason is required.

What will happen to me if I take part? You will be asked to complete a 20 minute questionnaire with two stages. The first section will ask you for basic personal information. The second will ask you to explore the concept of emotional intelligence, to assess your perceptions and understanding.

What are the possible disadvantages and risks of taking part? Although no risks to taking part are anticipated, should you wish to withdraw or to contact the researcher, please email ab6443@coventry.ac.uk.

What if something goes wrong? No anticipated risks were identified; however participants are welcome to contact the researcher with any issues that may arise. If you have any complaints regarding your experience of participating in this study, you may contact Professor Ian Marshall (Ethics Board Chair) on i.marshall@coventry.ac.uk

Will my taking part in this study be kept confidential? Yes. You will only be identifiable by your participant number. This will ensure confidentiality, and allow data to be deleted if you withdraw. Further, all data will be stored on a password protected laptop, with sole access to the researcher.

What will happen to the results of the research study? Your responses will be analysed qualitatively and quantitatively to see how your understanding compares to the established academic literature.

Upon publish, your responses may be quoted verbatim, but will be anonymised, and all information that could identify you will be removed. Data will be reported in a PhD thesis and publication in peer-reviewed academic journals or academic conferences is intended. Data will be permanently destroyed three years after date of participation.

Who is organising and funding the research? This research has been organised by Thomas Evans, a PhD student and Lecturer from the Coventry University Psychology Department. This project states no conflict of interest.

Who has reviewed the study? This study has been reviewed and approved by Coventry University's Health and Life Science Department Ethics Committee.

Contact for further information:

Researcher: Thomas Evans – ab6443@coventry.ac.uk

Project Supervisor – Dr Gail Steptoe-Warren – hsx566@coventry.ac.uk

If you have any complaints about how you have been treated, please contact Ethics Board Chair, Professor Ian Marshall on i.marshall@coventry.ac.uk

8.2.2. Study 1.2 Participant information sheet

Study Title: Student Perceptions of Emotional Intelligence

What is the purpose of the study? The current study aims to assess student perceptions and understanding of emotional intelligence through an open-response questionnaire.

Why have I been approached? You have been approached to participate as many individuals are required. Participants are required to be 18 or over for ethical reasons. As student perceptions are the focus of the study, to participate you must be a student of Coventry University.

Do I have to take part? Not at all. Participation is voluntary. If you change your mind, withdrawal is possible by emailing the researcher with your participant number at any time during, or up to seven days after data collection. Withdrawal will ensure data will be permanently deleted and not included in the research. There are no consequences of withdrawing and no reason is required.

What will happen to me if I take part? You will be asked to complete a 10 minute questionnaire with two stages. The first section will ask you for basic personal information. The second will ask you to explore the concept of emotional intelligence, to assess your perceptions and understanding. Participation is then complete.

What are the possible disadvantages and risks of taking part? No possible disadvantages of participation have been identified. If you feel uncomfortable or distressed by the questionnaire you are welcome to withdraw or to contact the researcher (ab6443@coventry.ac.uk) who will be able to assist.

What are the possible benefits of taking part? All psychology undergraduate participants will receive 20 participation credits. If you withdraw you will keep the credits earned. In addition you will gain an insight into how research is conducted. Participation offers experience that will be invaluable when coming to designing your own research.

What if something goes wrong? No anticipated risks were identified; however participants are welcome to contact the researcher with any issues that may arise. If you have any complaints regarding your experience of participating in this study, you may contact the project supervisor Dr Gail Steptoe-Warren on hsx566@coventry.ac.uk.

Will my taking part in this study be kept confidential? Yes. You will only be identifiable by your participant number given upon completion. This will ensure confidentiality, and allow data to be

deleted if you withdraw. Further, all data will be stored on a password protected file on the password protected Coventry University system, with sole access to the researcher.

What will happen to the results of the research study? Results will be reported in a PhD thesis. Publication in peer reviewed academic journals and/or presentation at academic conferences is also intended. Data will be permanently destroyed after three years. Your responses may be quoted verbatim or coded and combined with others' responses for analysis. Responses will be anonymised and will include no information that could identify you.

Who is organising and funding the research? This research has been organised by Thomas Evans, a PhD student and Lecturer from the Coventry University Psychology Department. This project states no conflict of interest.

Who has reviewed the study? This study has been reviewed and approved by Coventry University's Health and Life Science Department Ethics Committee.

Contact for further information:

Researcher: Thomas Evans – ab6443@coventry.ac.uk

Project Supervisor – Dr Gail Steptoe-Warren – hsx566@coventry.ac.uk

If you have any complaints about how you have been treated, please contact Ethics Board Chair, Professor Ian Marshall on i.marshall@coventry.ac.uk

8.2.3 Study 1.3 Participant information sheet

Study Title: Human Resource Professionals' Perceptions and Understanding of Emotional Intelligence

What is the purpose of the study? The current study aims to assess the perceptions and understanding of emotional intelligence held by selection and recruitment professionals through an open-ended, free-response questionnaire.

Why have I been approached? You have been approached to participate as many individuals are required. Participants are required to be older than 18 for ethical reasons. As professional perceptions are the focus of the study, to participate you must be a HR or selection and recruitment professional.

Do I have to take part? Not at all. Participation is voluntary. If you change your mind, withdrawal is possible by emailing the researcher with your participant number at any time during, or up to one month after data collection. Withdrawal will ensure data will be permanently deleted and not included in the research. There are no consequences of withdrawing and no reason is required.

What will happen to me if I take part? You will be asked to complete a 20-minute questionnaire with two stages. The first section will ask you for basic personal information. The second will ask you to explore the concept of emotional intelligence, to assess your perceptions and understanding.

What are the possible disadvantages and risks of taking part? No possible disadvantages of participation have been identified. If you feel uncomfortable or distressed by the questionnaire you are welcome to withdraw or to contact the researcher (ab6443@coventry.ac.uk) who will be able to assist.

What are the possible benefits of taking part? All participants will gain an insight into how current psychological research is conducted. No further incentives are offered.

What if something goes wrong? No anticipated risks were identified; however participants are welcome to contact the researcher with any issues that may arise. If you have any complaints regarding your experience of participating in this study, you may contact Professor Ian Marshall (Ethics Board Chair) on i.marshall@coventry.ac.uk

Will my taking part in this study be kept confidential? Yes. You will only be identifiable by your participant number. This will ensure confidentiality, and allow data to be deleted if you withdraw. Further, all data will be stored on a password protected laptop, with sole access to the researcher.

What will happen to the results of the research study? Your results may be quoted in the following academic ways, but if so, they will be anonymised and will include no information that could identify you. Results will be reported in a PhD thesis. Publication in peer reviewed academic journals and/or presentation at academic conferences is also intended. Data will be permanently destroyed after three years.

Who is organising and funding the research? This research has been organised by Thomas Evans, a PhD student and Lecturer from the Coventry University Psychology Department. This project states no conflict of interest.

Who has reviewed the study? This study has been reviewed and approved by Coventry University's Health and Life Science Department Ethics Committee.

Contact for further information:

Researcher: Thomas Evans – ab6443@coventry.ac.uk

Project Supervisor – Dr Gail Steptoe-Warren – hsx566@coventry.ac.uk

If you have any complaints about how you have been treated, please contact Ethics Board Chair, Professor Ian Marshall on i.marshall@coventry.ac.uk

8.2.4 Study 2 Participant information sheet

Study Title: An Integrated Model of Affect-Related Individual Differences

What is the purpose of the study? The aim of the study is to integrate different facets of emotional intelligence into pre-existing individual difference structures. We hope results will be able to help us understand emotional intelligence better through the use of existing frameworks, and to subsequently understand and predict phenomena more successfully.

Why have I been approached? You have been approached to participate as many individuals are required. To take part you must be over 18 years of age.

Do I have to take part? Not at all. Participation is voluntary. If you change your mind, withdrawal is possible by emailing the researcher with your participant number at any time during, or up to two weeks after the date of participation. Withdrawal will ensure data will be permanently deleted and not included in the research. There are no consequences of withdrawing and no reason is required.

What will happen to me if I take part? This study is designed to examine the interactions between intelligence, personality and emotional intelligence. You will be asked to answer a variety of questions on these themes. Your participation is then complete.

What are the possible benefits of taking part? Within the academic field, the current research is revolutionary in integrating emotional intelligence into existing constructs e.g. personality, and should provide a robust theoretical grounding to the understanding and use of emotional intelligence across an uncountable number of contexts. For participating, you will receive compensation for your time as agreed.

What are the possible disadvantages and risks of taking part? Some of the questions may cause distress. If you feel uncomfortable or distressed by the questionnaire you are welcome to withdraw at any time. Sources of support are the Mental Health Charity 'MIND' (http://www.mind.org.uk/) or the NHS (http://www.nhs.uk/Pages/HomePage.aspx). You may also contact the researcher by the email address below, if you wish further help.

What if something goes wrong? No anticipated risks were identified; however participants are encouraged to contact the researcher with any issues that may arise. If you have any complaints regarding your experience of participating in this study, you may wish to contact the researcher or the research supervisor, the details can be found below. Coventry University has an agreed complaints procedure that all CU researchers comply with, and if you wish to complain you should contact Ian

Marshall, Deputy Vice-Chancellor on csx300@coventry.ac.uk if the supervisor does not adequately deal with your complaint.

Will my taking part in this study be kept confidential? Yes. You will not be asked for any personal information, and you will only be identifiable by your participant number. This will ensure confidentiality and anonymity, and allow data to be deleted if you withdraw. All data will be stored according to the Data Protection Act on a secure password-protected file on the Coventry University Server, with sole access to the researcher. Data will be destroyed at the date detailed below to ensure sufficient time to publish the work, and to respond to any post-publication comments.

What will happen to the results of the research study? Presentation in a PhD thesis, publication in peer reviewed academic journals, and presentation at academic conferences is intended. Data will be permanently destroyed on the 31st of December 2025.

Who is organising and funding the research? This research has been organised by Thomas Evans, a lecturer, researcher and PhD student from the Coventry University Psychology Department, and is being supervised by Dr Gail Steptoe-Warren, from the same department. This project has received funding from the supervisor, and states no conflict of interest.

Who has reviewed the study? This study has been reviewed and approved by Coventry University's Health and Life Science Department Ethics Committee.

Contact for further information:

Researcher: Thomas Evans – ab6443@ coventry.ac.uk

Supervisor: Gail Steptoe-Warren – hsx566@coventry.ac.uk

8.2.5 Study 3 Participant information sheet

Study Title: Testing the Integrated Model of Affective Individual Differences Using the Cold Pressor Paradigm

What is the purpose of the study? The aim of the study is to integrate different facets of emotional intelligence into pre-existing individual difference structures using an experimental method. We hope results will be able to help us understand emotional intelligence better through the use of existing frameworks, and to subsequently understand and predict phenomena more successfully.

Why have I been approached? You have been approached to participate as many individuals are required. To take part you must be over 18 years of age. You should not participate if you have a history of Raynaud's phenomenon, fainting or seizures, frostbite or cardiovascular disorder and have fractures, open cuts or sores on your arm (Birnie et al. 2012).

Do I have to take part? Not at all. Participation is voluntary. If you change your mind, withdrawal is possible by emailing the researcher with your participant number at any time during, or up to two weeks after the date of participation. Withdrawal will ensure data will be permanently deleted and not included in the research. There are no consequences of withdrawing and no reason is required.

What will happen to me if I take part? This study is designed to examine the interactions between intelligence, personality and emotional intelligence. You will be asked to answer a battery of questionnaires on a wide range of themes including the aforementioned facets. You will then be invited to a laboratory to be recorded undertaking the cold pressor task where your hand will be submerged into ice-cold water. You will then be briefly interviewed to explore your views on this experience. Your participation is then complete.

What are the possible benefits of taking part? Within the academic field, the current research is revolutionary in integrating emotional intelligence into existing constructs e.g. personality, and should provide a robust theoretical grounding to the understanding and use of emotional intelligence across an uncountable number of contexts. As a Coventry University psychology undergraduate participant, you will also receive 180 participation credits.

What are the possible disadvantages and risks of taking part? Some of the questions may cause distress. If you feel uncomfortable or distressed by the questionnaire you are welcome to withdraw at any time. Sources of support are the Mental Health Charity 'MIND' (http://www.mind.org.uk/) or the NHS (http://www.nhs.uk/Pages/HomePage.aspx). The cold-pressor task may also make you uncomfortable or distressed however should this become unbearable you should simply remove your

hand from the water. You may talk to the research or email using the address below, if you wish further help.

What if something goes wrong? No anticipated risks were identified; however participants are encouraged to contact the researcher with any issues that may arise. If you have any complaints regarding your experience of participating in this study, you may wish to contact the researcher or the research supervisor, the details can be found below. Coventry University has an agreed complaints procedure that all CU researchers comply with, and if you wish to complain you should contact Ian Marshall, Deputy Vice-Chancellor on csx300@coventry.ac.uk if the supervisor does not adequately deal with your complaint.

Will my taking part in this study be kept confidential? Yes. You will not be asked for any personal information, and you will only be identifiable by your participant number. This will ensure confidentiality and anonymity, and allow data to be deleted if you withdraw. The only exception to this is if you give your name and your managers email (if employed) for us to gain a rating of your work performance, in which case we will contact your manager and then this sensitive data will be permanently destroyed. Either way, all data will be stored according to the Data Protection Act on a secure password-protected file on the Coventry University Server, with sole access to the researcher. Data will be destroyed at the date detailed below to ensure sufficient time to publish the work, and to respond to any post-publication comments.

What will happen to the results of the research study? Presentation in a PhD thesis, publication in peer reviewed academic journals, and presentation at academic conferences is intended. Data will be permanently destroyed on the 31st of December 2020.

Who is organising and funding the research? This research has been organised by Thomas Evans, a lecturer, researcher and PhD student from the Coventry University Psychology Department, and is being supervised by Dr Gail Steptoe-Warren, from the same department. This project has received no funding, and states no conflict of interest.

Who has reviewed the study? This study has been reviewed and approved by Coventry University's Health and Life Science Department Ethics Committee.

Contact for further information:

Researcher: Thomas Evans – ab6443@ coventry.ac.uk

Supervisor: Gail Steptoe-Warren – hsx566@coventry.ac.uk

8.3 Consent forms

8.3.1 Study 1.1 Consent form

Study Title: Academics' Perceptions of Emotional Intelligence

This study is designed to assess the perceptions and understanding of emotional intelligence held by teaching and researching academics in psychology, through an open-response questionnaire. The current study aims to gauge your understanding of the academic conceptualisation of emotional intelligence, and to explore your perceptions of emotional intelligence in relation to various variables. After reporting demographic features, you will be asked about emotional intelligence.

Please tick the corresponding boxes if you agree with the statements. If you are at all confused or unsure please contact the researcher (Thomas Evans), by emailing ab6443@coventry.ac.uk. All boxes require a tick for your participation to continue.

1. I have had all my questions regarding this research answered	
2. I have read and understood the Participant Information Sheet (the previous page)	
3. I understand my participation is voluntary	
4. I understand that information I provide will be treated as confidential	
5. I understand that I am free to withdraw from this study now, during or up to four weeks today without cause or repercussion	
6. I understand I have to email the researcher with my participant code within two weeks from today if I wish to withdraw from the study	
7. I understand that my responses may be quoted verbatim in academic outputs, but all information will be anonymised and any information that could identify me will be removed	
8. I am aged 18 or over	
9. I agree to take part in this research project	

8.3.2. Study 1.2 Consent form

Study Title: Student Perceptions of Emotional Intelligence

This study is designed to assess student perceptions and understanding of emotional intelligence through an open-response questionnaire. The current study aims to gauge what you feel, know, and don't know about emotional intelligence. After reporting demographic features, you will be asked about what you know about emotional intelligence, and will then face an emotional intelligence psychometric.

Please tick the corresponding boxes if you agree with the statements. If you are at all confused or unsure please contact the researcher (Thomas Evans), by emailing ab6443@coventry.ac.uk. All boxes require a tick for your participation to continue.

1. I have had all my questions regarding this research answered	
2. I have read and understood the Participant Information Sheet	
3. I understand my participation is voluntary	
4. I understand that information I provide will be treated as confidential	
5. I understand that I am free to withdraw from this study at any time up to seven days from participation date without cause or repercussion	
6. I understand I have to email the researcher with my participant code within seven days from participation date if I wish to withdraw from the study	
7. I understand that my responses may be quoted in academic outputs, but all information will be anonymised and any information that could identify me will be removed	
8. I am a student at Coventry University	
9. I am aged 18 or over	
10. I agree to take part in this research project	

If you are a Psychology student of Coventry University, please enter your SONA ID here:

This will be recorded separately to your results, and will only be used for allocation of research credits.

8.3.3 Study 1.3 Consent form

Study Title: Human Resource Professionals' Perceptions of Emotional Intelligence

This study is designed to assess the perceptions and understanding of emotional intelligence held by selection and recruitment professionals, through an open-response questionnaire. The current study aims to gauge your understanding of the academic conceptualisation of emotional intelligence, and to explore your perceptions of emotional intelligence for selection and recruitment. After reporting demographic features, you will be asked about emotional intelligence.

Please tick the corresponding boxes if you agree with the statements. If you are at all confused or unsure please contact the researcher (Thomas Evans), by emailing ab6443@coventry.ac.uk. All boxes require a tick for your participation to continue.

1. I have had all my questions regarding this research answered	
2. I have read and understood the Participant Information Sheet (the previous page)	
3. I understand my participation is voluntary	
4. I understand that information I provide will be treated as confidential	
5. I understand that I am free to withdraw from this study now, during or up to four weeks today without cause or repercussion	
6. I understand I have to email the researcher with my participant code within one month from today if I wish to withdraw from the study	
7. I understand that my responses may be quoted in academic outputs, but all information will be anonymised and any information that could identify me will be removed	
8. I am aged 18 or over	
9. I agree to take part in this research project	

8.3.4 Study 2 Consent form

Study Title: An Integrated Model of Affect-Related Individual Differences

This study is designed to examine the interactions between facets of emotional intelligence, personality, and intelligence. This study involves the completion of a questionnaire battery and should take no more than an hour. You will be asked a variety of questions in different formats so please follow the instructions carefully and answer the questions honestly.

Please tick the corresponding boxes if you agree with the statements. If you would like any clarifications, or you are unsure, please contact the researcher (Thomas Evans), by emailing ab6443@coventry.ac.uk. All boxes require a tick for your participation to continue.

1. I have had all my questions regarding this research answered	
2. I have read and understood the Participant Information Sheet	
3. I understand my participation is voluntary	
4. I understand that information I provide will be treated as confidential, will only be accessible to the researchers, and will be anonymous as it will be stored securely using a participant number	
5. I understand that I am free to withdraw from this study now, during or up to two weeks today without cause or repercussion	
6. I understand I have to email the researcher with my participant code within two weeks from today if I wish to withdraw from the study	
7. I understand results will be presented in an aggregated form in numerous academic papers and conference presentations, including a PhD thesis	
8. I am aged 18 or over	
9. I agree to take part in this research project	

8.3.5 Study 3 Consent form

Study Title: Testing the Integrated Model of Affective Individual Differences Using the Cold Pressor Paradigm

This study is designed to examine the interactions between facets of emotional intelligence, personality, and intelligence. This study involves the completion of a questionnaire battery and then the cold-pressor task. This should take no more than an hour for each. You will be asked a variety of questions in different formats so please follow the instructions carefully and answer the questions honestly.

Please tick the corresponding boxes if you agree with the statements. If you would like any clarifications, or you are unsure, please contact the researcher (Thomas Evans), by emailing ab6443@coventry.ac.uk. All boxes require a tick for your participation to continue.

1. I have had all my questions regarding this research answered	
2. I have read and understood the Participant Information Sheet	
3. I understand my participation is voluntary	
4. I understand that information I provide will be treated as confidential, will only be accessible to the researchers, and will be anonymous as it will be stored securely using a participant number	
5. I understand that I am free to withdraw from this study now, during or up to two weeks today without cause or repercussion	
6. I understand I have to email the researcher with my participant code within two weeks from today if I wish to withdraw from the study	
7. I understand results will be presented in an aggregated form in numerous academic papers and conference presentations, including a PhD thesis	
8. I consent to having the experiment in the laboratory video recorded	

8.4 Debrief form

8.4.1 Study 1.1 Debrief form

Thank-you for participating in the study – your time is much appreciated!

The aim of the current study was to assess teaching or researching psychology academics' perceptions and understanding of emotional intelligence through an open-response questionnaire. The current study hopes to gauge the understanding of the academic conceptualisation of emotional intelligence, and to explore the value placed upon EI.

If you have questions or would like to know more you should email the researcher (Thomas Evans) at ab6443@coventry.ac.uk or project supervisor (Dr Gail Steptoe-Warren) at hsx566@coventry.ac.uk. If you would like to withdraw your data from the study, you should email this address, with your three-digit memorable number and date of study completion, within two weeks of study participation. You do not need to state a reason and there will be no repercussions. If you have any complaints regarding your experience of participating in this study, you may contact Dr Gail Steptoe-Warren (Project Supervisor) on hsx566@coventry.ac.uk or Professor Ian Marshall (Ethics Board Chair) on i.marshall@coventry.ac.uk. Your data may be reported anonymously verbatim, and coded and analysed numerically. Data will be kept for 3 years, starting on the day you participated, and following this time-period it will be destroyed permanently.

For more information regarding the existing literature, the following references may be of interest:

- Goleman, D. (2011) *Leadership: The Power of Emotional Intelligence*. Northampton, MA: More Than Sound
- Maynard, M. L. (2003) 'Emotional Intelligence and Perceived Employability for Internship Curriculum'. *Psychological Reports* 93 (3), 791-792

8.4.2. Study 1.2 Debrief form

Thank-you for participating in the study – your time is much appreciated!

The aim of the current study was to assess student perceptions and understanding of emotional intelligence through an open-response questionnaire. By understanding what is known, unknown and felt about emotional intelligence, the marketing and content of EI programmes can be improved.

If you have questions or would like to know more you should email the researcher (Thomas Evans) at ab6443@coventry.ac.uk. If you would like to withdraw your data from the study, you should email this address with your participant number within one week of study participation. You do not need to state a reason and there will be no repercussions. If you have any complaints regarding your experience of participating in this study, you may contact Dr Gail Steptoe-Warren (Project Supervisor) on hsx566@coventry.ac.uk or Professor Ian Marshall (Ethics Board Chair) on i.marshall@coventry.ac.uk. Data will be kept for 3 years, starting on the day you participated, and following this time-period it will be destroyed permanently.

For more information regarding the theoretical framework and existing literature, the following references may be of interest:

- Goleman, D., (1995) Emotional Intelligence, New York, NY, England: Bantam Books, Inc.
- Mayer, J.D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), Emotional development and emotional intelligence: Implications for educators (pp. 3-31). New York: Basic Books.

8.4.3 Study 1.3 Debrief form

Thank-you for participating in the study – your time is much appreciated!

The aim of the current study was to assess Human Resources or Recruitment and Selection Professionals' perceptions and understanding of emotional intelligence through an open-response questionnaire. The current study hopes to gauge the understanding of the academic conceptualisation of emotional intelligence, and to explore the value placed upon EI training for employability.

If you have questions or would like to know more you should email the researcher (Thomas Evans) at ab6443@coventry.ac.uk or project supervisor (Dr Gail Steptoe-Warren) at hsx566@coventry.ac.uk. If you would like to withdraw your data from the study, you should email this address, with your three-digit memorable number and date of study completion, within one month of study participation. You do not need to state a reason and there will be no repercussions. If you have any complaints regarding your experience of participating in this study, you may contact Dr Gail Steptoe-Warren (Project Supervisor) on hsx566@coventry.ac.uk or Professor Ian Marshall (Ethics Board Chair) on i.marshall@coventry.ac.uk. Data will be kept for 3 years, starting on the day you participated, and following this time-period it will be destroyed permanently.

For more information regarding the existing literature, the following references may be of interest:

- Goleman, D. (2011), Leadership: The Power of Emotional Intelligence
- Maynard, M. L. (2003). Emotional intelligence and perceived employability for internship curriculum. Psychological Reports, 93(3), 791-792.

8.4.4 Study 2 Debrief form

Thank-you for participating in the study – your time is much appreciated!

The aim of the study was to integrate different facets of emotional intelligence into pre-existing individual difference frameworks. We hope results will be able to help us understand emotional intelligence using the existing personality and intelligence structures, and to subsequently understand and predict phenomena more successfully. If you feel distressed by any of the questions you are encouraged to explore the following support services: the Mental Health Charity 'MIND' (http://www.mind.org.uk/); or the NHS (http://www.nhs.uk/Pages/HomePage.aspx).

If you have questions or would like to know more you should email the researcher (Thomas Evans) at ab6443@coventry.ac.uk. If you would like to withdraw your data from the study, you should email this address with your participant number within 2-weeks of the completion of your data. You do not need to state a reason and there will be no repercussions. If you have any complaints regarding your experience of participating in this study, you may contact the researcher.

For more information regarding the theoretical framework and existing literature, the following references may be of interest:

MacCann, C., Joseph, D. L., Newman, D. A., & Roberts, R. D. (2014). Emotional intelligence is a second-stratum factor of intelligence: Evidence from hierarchical and bifactor models. Emotion, 14(2), 358-374

Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. British Journal Of Psychology, 98(2), 273-289.

8.4.5 Study 3 Debrief form

Thank-you for participating in the study – your time is much appreciated!

The aim of the study was to integrate different facets of emotional intelligence into pre-existing individual difference frameworks. We hope results will be able to help us understand emotional intelligence using the existing personality and intelligence structures, and to subsequently understand and predict phenomena more successfully. If you feel distressed by any of the questions you are encouraged to explore the following support services: the Mental Health Charity 'MIND' (http://www.mind.org.uk/); or the NHS (http://www.nhs.uk/Pages/HomePage.aspx).

If you have questions or would like to know more you should email the researcher (Thomas Evans) at ab6443@coventry.ac.uk. If you would like to withdraw your data from the study, you should email this address with your participant number within 2-weeks of the completion of your data. You do not need to state a reason and there will be no repercussions. If you have any complaints regarding your experience of participating in this study, you may contact the researcher.

For more information regarding the theoretical framework and existing literature, the following references may be of interest:

MacCann, C., Joseph, D. L., Newman, D. A., & Roberts, R. D. (2014). Emotional intelligence is a second-stratum factor of intelligence: Evidence from hierarchical and bifactor models. Emotion, 14(2), 358-374

Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. British Journal Of Psychology, 98(2), 273-289.

8.5 Interview schedule

8.5.1 Study 1.1 Interview schedule

Demographic Questions

Are you a psychology researcher, teacher, or both?	Teach only / Research only / Teach and Research
How many years have you been employed in psychology-related academia?	If less than one year: _____ months. If more than one year: _____ years.
What country do you work in?	
How old are you?	_____ years
What is your sex?	Male / Female
Have you heard of the term 'emotional intelligence'?	Yes / No
Have you ever taught emotional intelligence?	Never mentioned it / Have briefly mentioned it in relation to something else / Taught it specifically
Have you ever received any formal information/teaching on emotional intelligence? (please detail)	Yes, some / Yes, a little / Not at all
Have you ever received any training on emotional intelligence? (please detail)	Yes, complete / Yes, some / No
Have you ever read any academic papers that have explored emotional intelligence?	Yes, many / Yes, some / No
Have you ever authored or co-authored an academic work that explored emotional intelligence?	Yes, I had a major role in the work / Yes, I had a minor role in the work / No
Please report a memorable three digit number, which will form your participant number needed for withdrawal.	

EI Questions

In these next few questions, we want to explore your understanding and perceptions of emotional intelligence. We ask that you answer these honestly and from your own perspective – please refrain from using google or asking for help. If you don't know or are unsure then that's no problem, just write what you can and provide details where possible, and if you don't know, write 'don't know'!

How would you define the construct commonly referred to as 'Emotional Intelligence'? Please give as much detail as possible.

Would you describe yourself as 'emotionally intelligent', and why? Please give as much detail as possible.

What are the benefits of being 'emotionally intelligent'?

What are the negative consequences of being ‘emotionally intelligent’? Please give as much detail as possible.

How does the value of emotional intelligence compare to other qualities, with respect to attributes/skills/characteristics individuals demonstrate? Please give as much detail as possible.

From what sources of information have these views and ideas originated from? Please give as much detail as possible.

Please think about the correlations between emotional intelligence (EI) and other factors, ranging from -1 to +1.

EXAMPLE: A score of +1 means that high EI is associated with high creativity and low EI is associated with low creativity. A score of 0 means they are completely unrelated. A score of -1 means that high EI is associated with low creativity and low EI is associated with high creativity.

To the best of your knowledge, what do you believe the academic literature suggests is the relationship between EI and the following factors?

Employability

Academic performance

Adaptability

Intelligence (IQ)

Conscientiousness

Extraversion

Openness to Experience

Neuroticism

Agreeableness

8.5.2 Study 1.2 Interview schedule

Demographic Questions

What course are you studying?	
What year of study are you currently in?	First Year / Second Year / Third Year / Fourth Year
What is your sex?	Male / Female
How old are you?	Years
Have you heard of the term 'emotional intelligence'?	Yes / No
Have you ever received any formal information/teaching on emotional intelligence?	Yes, some / Yes, a little / Not at all
Have you ever received any training on emotional intelligence?	Yes, complete / Yes, some / No

EI Questions

In these next few questions, we want to explore your understanding and perceptions of emotional intelligence. We ask that you answer these honestly and from your own perspective – please refrain from using google or asking for help. If you don't know or are unsure then that's no problem, just write what you can and provide details where possible, and if you don't know, write 'don't know'!

How would you define the construct commonly referred to as 'Emotional Intelligence'?

What are the benefits of being 'emotionally intelligent'?

What are the negative consequences of being 'emotionally intelligent'?

In what practical situations would you suggest being emotionally intelligent as especially advantageous or damaging, and why?

Would you describe yourself as 'emotionally intelligent', and why?

If someone described their friend as 'emotionally intelligent', what behaviours would you expect this friend to exhibit?

From what sources of information have these views and ideas originated from?

8.5.3 Study 1.3 Interview schedule

Demographic Questions

How prominent is selection and recruitment in your job?	Not at all / a little / somewhat / very / extremely
How many years have you held this job?	If less than one year: _____ months. If more than one year: _____ years.
What country do you work in?	
How old are you?	_____ years
What is your sex?	Male / Female
What is the highest level of education you have completed?	High-school / 6-form or college / undergraduate degree / postgraduate degree
Have you heard of the term 'emotional intelligence'?	Yes / No
Have you ever received any formal information/teaching on emotional intelligence? (please detail)	Yes, some / Yes, a little / Not at all
Have you ever received any training on emotional intelligence? (please detail)	Yes, complete / Yes, some / No
Please report a memorable three digit number, which will form your participant number needed for withdrawal.	

EI Questions

In these next few questions, we want to explore your understanding and perceptions of emotional intelligence. We ask that you answer these honestly and from your own perspective – please refrain from using google or asking for help. If you don't know or are unsure then that's no problem, just write what you can and provide details where possible, and if you don't know, write 'don't know'!

How would you define the construct commonly referred to as 'Emotional Intelligence'?

Would you describe yourself as 'emotionally intelligent', and why?

What are the benefits of having an 'emotionally intelligent' workforce?

What are the negative consequences of having an 'emotionally intelligent' workforce?

In what practical workplace situation would you suggest being emotionally intelligent as especially advantageous or damaging, and why?

If someone described themselves as ‘emotionally intelligent’ on a job application, what behaviours would you expect this individual to exhibit?

How does the value of emotional intelligence compare to other qualities, with respect to attributes/skills/characteristics you wish job candidates to demonstrate?

From what sources of information have these views and ideas originated from?

Is there anything else about emotional intelligence that you wish to note?

8.6 Study 2 questionnaire battery

8.6.1 Demographic questions

1. Please enter a memorable five-digit number. This is your participant number so please make a note of it should you wish to withdraw from the research
2. If you are a Coventry University student, please enter your 7-digit student ID number
3. What is your sex? Male/Female
4. In years, what is your current age?

8.6.2 Fluid Intelligence

1. In the following number series, what number comes next? 64, 81, 100, 121, 144, ... (1) 154 (2) 156 (3) 162 (4) 169 (5) 178 (6) 196 (7) None of these (8) I don't know
2. In the following number series, what number comes next? 4, 7, 11, 18, 29, ... (1) 37 (2) 39 (3) 46 (4) 47 (5) 49 (6) 55 (7) None of these (8) I don't know
3. In the following alphanumeric series, what letter comes next? C, F, I, L, O, ... (1) Q (2) R (3) S (4) T (5) U (6) V (7) None of these (8) I don't know
4. In the following alphanumeric series, what letter comes next? H, J, F, H, D, ... (1) D (2) E (3) F (4) G (5) H (6) I (7) None of these (8) I don't know
5. In the following alphanumeric series, what letter comes next? K, N, P, S, U, ... (1) S (2) T (3) U (4) V (5) W (6) X (7) None of these (8) I don't know
6. In the following alphanumeric series, what letter comes next? V, Q, M, J, H, ... (1) E (2) F (3) G (4) H (5) I (6) J (7) None of these (8) I don't know
7. In the following alphanumeric series, what letter comes next? I, J, L, O, S, ... (1) T (2) U (3) V (4) X (5) Y (6) Z (7) None of these (8) I don't know
8. In the following alphanumeric series, what letter comes next? Z, W, X, U, V, ... (1) R (2) S (3) T (4) U (5) V (6) W (7) None of these (8) I don't know
9. In the following alphanumeric series, what letter comes next? Q, S, N, P, L, ... (1) J (2) H (3) I (4) N (5) M (6) L (7) None of these (8) I don't know

8.6.3 Crystalised Intelligence

1. What number is one fifth of one fourth of one ninth of 900? (1) 2 (2) 3 (3) 4 (4) 5 (5) 6 (6) 7 (7) None of these (8) I don't know
2. Please mark the word that does not match the other words: (1) Sycamore (2) Buckeye (3) Elm (4) Daffodil (5) Hickory (6) Sequoia (7) They all match (8) I don't know
3. The opposite of a "stubborn" person is a "_____" person. (1) Flexible (2) Passionate (3) Mediocre (4) Reserved (5) Pigheaded (6) Persistent (7) None of these (8) I don't know
4. Michelle likes 96 but not 45; she also likes 540 but not 250. Which does she like? (1) 86 (2) 93 (3) 98 (4) 128 (5) 132 (6) 140 (7) None of these (8) I don't know
5. Adam and Melissa went fly-fishing and caught a total of 32 salmon. Melissa caught three times as many salmon as Adam. How many salmon did Adam catch? (1) 7 (2) 8 (3) 9 (4) 10 (5) 11 (6) 12 (7) None of these (8) I don't know
6. Zach is taller than Matt and Richard is shorter than Zach. Which of the following statements would be most accurate? (1) Richard is taller than Matt (2) Richard is shorter than Matt (3)

Richard is as tall as Matt (4) It's impossible to tell (5) Richard is taller than Zach (6) Zach is shorter than Matt (7) None of these (8) I don't know

7. Joshua is 12 years old and his sister is three times as old as he. When Joshua is 23 years old, how old will his sister be? (1) 35 (2) 39 (3) 44 (4) 47 (5) 53 (6) 57 (7) None of these (8) I don't know
8. The sixth month of the year is: (1) September (2) July (3) May (4) August (5) June (6) April (7) None of these (8) I don't know
9. If the day after tomorrow is two days before Thursday then what day is it today? (1) Friday (2) Monday (3) Wednesday (4) Saturday (5) Tuesday (6) Sunday (7) None of these (8) I don't know
10. Please mark the word that does not match the other words: (1) Buenos Aires (2) Melbourne (3) Seattle (4) Cairo (5) Morocco (6) Milan (7) None of these (8) I don't know
11. The opposite of an "affable" person is a(n) "_____" person. (1) Angry (2) Sociable (3) Gracious (4) Frustrated (5) Reserved (6) Ungrateful (7) None of these (8) I don't know
12. Isaac is shorter than George and Phillip is taller than George. Which of the following statements is most accurate? (1) Phillip is taller than Isaac (2) Phillip is shorter than Isaac (3) Phillip is as tall as Isaac (4) It is impossible to tell (5) Isaac is taller than George (6) George is taller than Phillip (7) None of these (8) I don't know
13. If the day before yesterday is three days after Saturday then what day is today? (1) Thursday (2) Saturday (3) Wednesday (4) Friday (5) Sunday (6) Tuesday (7) None of these (8) I don't know
14. The opposite of an "ambiguous" situation is a(n) "_____" situation. (1) suspicious (2) vague (3) unequivocal (4) intelligent (5) dubious (6) genuine (7) None of these (8) I don't know
15. How many total legs do three cows and four chickens have? (1) 16 (2) 18 (3) 20 (4) 21 (5) 22 (6) 24 (7) None of these (8) I don't know
16. The 4th planet from the sun is: (1) Jupiter (2) Saturn (3) Pluto (4) Earth (5) Mars (6) Venus (7) None of these (8) I don't know

8.6.4 Personality

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. (1 = Disagree strongly; 2 = Disagree a little; 3 = Neither agree nor disagree; 4 = Agree a little; 5 = Agree strongly)

Extraversion

- 1. Is talkative
- 6. Is reserved (R)
- 11. Is full of energy
- 16. Generates a lot of enthusiasm
- 21. Tends to be quiet (R)
- 26. Has an assertive personality
- 31. Is sometimes shy, inhibited (R)
- 36. Is outgoing, sociable

Agreeableness

- 2. Tends to find fault with others (R)
- 7. Is helpful and unselfish with others
- 12. Starts quarrels with others (R)
- 17. Has a forgiving nature
- 22. Is generally trusting
- 27. Can be cold and aloof (R)
- 32. Is considerate and kind to almost everyone
- 37. Is sometimes rude to others (R)
- 42. Likes to cooperate with others

Conscientiousness

- 3. Does a thorough job
- 8. Can be somewhat careless (R)
- 13. Is a reliable worker
- 18. Tends to be disorganised (R)
- 23. Tends to be lazy (R)
- 28. Perseveres until the task is finished
- 33. Does things efficiently
- 38. Makes plans and follows through with them
- 43. Is easily distracted (R)

Neuroticism

- 4. Is depressed, blue
- 9. Is relaxed, handles stress well (R)
- 14. Can be tense
- 19. Worries a lot
- 24. Is emotionally stable, not easily upset (R)
- 29. Can be moody
- 34. Remains calm in tense situations (R)
- 39. Gets nervous easily

Openness

- 5. Is original, comes up with new ideas
- 10. Is curious about many different things
- 15. Is ingenious, a deep thinker
- 20. Has an active imagination
- 25. Is inventive
- 30. Values artistic, aesthetic experiences
- 35. Prefers work that is routine (R)
- 40. Likes to reflect, play with ideas
- 41. Has few artistic interests (R)
- 44. Is sophisticated in art, music, or literature

8.6.5 Ability EI – Emotion perception

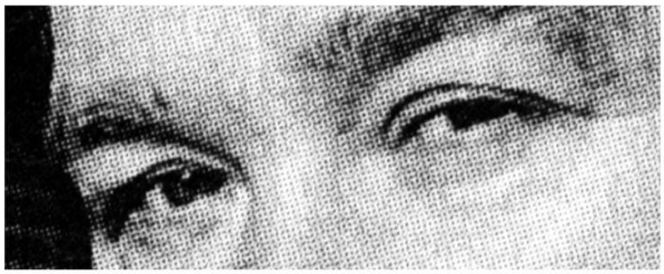
For each set of eyes, choose which word best describes what the person in the picture is thinking or feelings. You may feel that more than one word is applicable but please choose just one word, the word which you consider to be most suitable. Before making your choice, make sure that you have read all 4 words. You should try to do the task as quickly as possible but you will not be timed. If you really don't know what a word means you can look it up in the definition handout in 'more info'.

Which word best describes what the person in the picture is thinking or feeling?

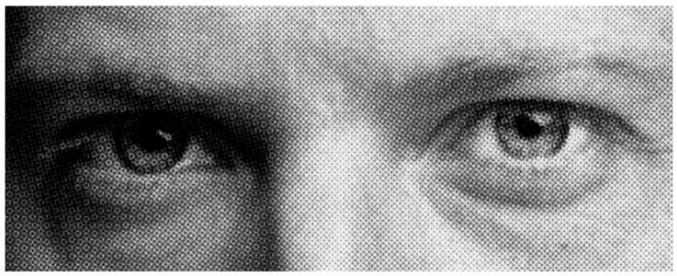
- 8. Despondent Relieved Shy Excited

- 9 Annoyed Hostile Horrified Preoccupied

- 12 Indifferent Embarrassed Sceptical Dispirited



- 14 Irritated Disappointed Depressed Accusing



- 15 Contemplative Flustered Encouraging Amused

- 19 Arrogant Grateful Sarcastic Tentative

- 22 Preoccupied Grateful Insisting Imploring

- 24 Pensive Irritated Excited Hostile

- 32 Serious Ashamed Bewildered Alarmed

- 36 Ashamed Nervous Suspicious Indecisive

8.6.6. Ability EI – Emotion management

1. Wai-Hin and Connie have shared an office for years but Wai-Hin gets a new job and Connie loses contact with her. *What action would be the most effective for Connie?*
    (a) Just accept that she is gone and the friendship is over.
    (b) Ring Wai-Hin and ask her out for lunch or coffee to catch up.
    (c) Contact Wai-Hin and arrange to catch up but also make friends with her replacement.
    (d) Spend time getting to know the other people in the office, and strike up new friendships.

2. Manual is only a few years from retirement when he finds out his position will no longer exist, although he will still have a job with a less prestigious role. *What action would be the most effective for Manual?*
    (a) Carefully consider his options and discuss it with his family.
    (b) Talk to his boss or the management about it.
    (c) Accept the situation, but still feel bitter about it.
    (d) Walk out of that job.

3. Surbhi starts a new job where he doesn't know anyone and finds that no one is particularly friendly. *What action would be the most effective for Surbhi?*
    (a) Have fun with his friends outside of work hours.
    (b) Concentrate on doing his work well at the new job.
    (c) Make an effort to talk to people and be friendly himself.
    (d) Leave the job and find one with a better environment.

4. Andre moves away from the city his friends and family are in. He finds his friends make less effort to keep in contact than he thought they would. *What action would be the most effective for Andre?*
    (a) Try to adjust to life in the new city by joining clubs and activities there.
    (b) He should make the effort to contact them, but also try to meet people in his new city.
    (c) Let go of his old friends, who have shown themselves to be unreliable.
    (d) Tell his friends he is disappointed in them for not contacting him.

5. Clayton has been overseas for a long time and returns to visit his family. So much has changed that Clayton feels left out. *What action would be the most effective for Clayton?*
    (a) Nothing – it will sort itself out soon enough.
    (b) Tell his family he feels left out.

(c) Spend time listening and getting involved again.
(d) Reflect that relationships can change with time.

6. Daniel has been accepted for a prestigious position in a different country from his family, who he is close to. He and his wife decide it is worth relocating. *What action would be the most effective for Daniel?*
   (a) Realize he shouldn't have applied for the job if he didn't want to leave.
   (b) Set up a system for staying in touch, like weekly phone calls or emails.
   (c) Think about the great opportunities this change offers.
   (d) Don't take the position.

7. Mei Ling answers the phone and hears that close relatives are in hospital critically ill. *What action would be the most effective for Mei Ling?*
   (a) Let herself cry and express emotion for as long as she feels like.
   (b) Speak to other family to calm herself and find out what is happening, then visit the hospital.
   (c) There is nothing she can do.
   (d) Visit the hospital and ask staff about their condition.

8. Shona has not spoken to her nephew for months, whereas when he was younger they were very close. She rings him but he can only talk for five minutes. *What action would be the most effective for Shona?*
   (a) Realize that he is growing up and might not want to spend so much time with his family any more.
   (b) Make plans to drop by and visit him in person and have a good chat.
   (c) Understand that relationships change, but keep calling him from time to time.
   (d) Be upset about it, but realize there is nothing she can do.

9. Mina and her sister-in-law normally get along quite well, and the sister-in-law regularly baby-sits for her for a small fee. Lately she has also been cleaning away cobwebs, commenting on the mess, which Mina finds insulting. *What action would be the most effective for Mina?*
   (a) Tell her sister-in-law these comments upset her.
   (b) Get a new babysitter.
   (c) Be grateful her house is being cleaned for free.
   (d) Tell her only to baby-sit, not to clean.

10. Juno is fairly sure his company is going down and his job is under threat. It is a large company and nothing official has been said. *What action would be the most effective for Juno?*
    (a) Find out what is happening and discuss his concerns with his family.
    (b) Try to keep the company afloat by working harder.
    (c) Start applying for other jobs.
    (d) Think of these events as an opportunity for a new start.

11. Mallory moves from a small company to a very large one, where there is little personal contact, which she misses. *What action would be the most effective for Mallory?*
    (a) Talk to her workmates, try to create social contacts and make friends.
    (b) Start looking for a new job so she can leave that environment.
    (c) Just give it time, and things will be okay.
    (d) Concentrate on her outside-work friends and colleagues from previous jobs.

12. A demanding client takes up a lot of Jill's time and then asks to speak to Jill's boss about her performance. Although Jill's boss assures her that her performance is fine, Jill feels upset. *What action would be the most effective for Jill?*
    (a) Talk to her friends or workmates about it.
    (b) Ignore the incident and move on to her next task.
    (c) Calm down by taking deep breaths or going for a short walk.
    (d) Think that she has been successful in the past and this client being difficult is not her fault.

13. Blair and Flynn usually go to a cafe after the working week and chat about what's going on in the company. After Blair's job is moved to a different section in the company, he stops coming to the cafe. Flynn misses these Friday talks. *What action would be the most effective for Flynn?*
    (a) Go to the cafe or socialize with other workers.
    (b) Don't worry about it, ignore the changes and let Blair be.
    (c) Not talk to Blair again.
    (d) Invite Blair again, maybe rescheduling for another time.

14. Michelle's friend Dara is moving overseas to live with her partner. They have been good friends for many years and Dara is unlikely to come back. *What action would be the most effective for Michelle?*
    (a) Forget about Dara.
    (b) Spend time with other friends, keeping herself busy.
    (c) Think that Dara and her partner will return soon.
    (d) Make sure she keeps in contact through email, phone or letter writing.

15. Hannah's access to essential resources has been delayed and her work is way behind schedule. Her progress report makes no mention of the lack of resources. *What action would be the most effective for Hannah?*
    (a) Explain the lack of resources to her boss or to management.
    (b) Learn that she should plan ahead for next time.
    (c) Document the lack of resources in her progress report.
    (d) Don't worry about it.

16. Reece's friend points out that her young children seem to be developing more quickly than Reece's. Reece sees that this is true. *What action would be the most effective for Reece?*
    (a) Talk the issue over with another friend.
    (b) Angrily confront her friend about making such statements.
    (c) Realize that children develop at different rates.
    (d) Talk to a doctor about what the normal rates of development are.

17. Jumah has been working at a new job part-time while he studies. His shift times for the week are changed at the last minute, without consulting him. *What action would be the most effective for Jumah?*
    (a) Refuse to work the new shifts.
    (b) Find out if there is some reasonable explanation for the shift changes.
    (c) Tell the manager in charge of shifts that he is not happy about it.
    (d) Grumpily accept the changes and do the shifts.

18. Julie hasn't seen Ka for ages and looks forward to their weekend trip away. However, Ka has

changed a lot and Julie finds that she is no longer an interesting companion. *What action would be the most effective for Julie?*

(a) Cancel the trip and go home.
(b) Realize that it is time to give up the friendship and move on.
(c) Understand that people change, so move on, but remember the good times.
(d) Concentrate on her other, more rewarding friendships.

8.6.7 Ability EI – Emotion understanding

01. Xavier completes a difficult task on time and under budget. *Xavier is most likely to feel?* (a) Surprise (b) Pride (c) Relief (d) Hope (e) Joy
02. If the current situation continues, Denise's employer will probably be able to move her job to a location much closer to her home, which she really wants. *Denise is most likely to feel?* (a) Distress (b) Joy (c) Surprise (d) Hope (e) Fear
03. Song finds out that a friend of hers has borrowed money from others to pay urgent bills, but has in fact used the money for less serious purposes. *Song is most likely to feel?* (a) Anger (b) Excitement (c) Contempt (d) Shame (e) Horror
04. Charles is meeting a friend to see a movie. The friend is very late and they are not in time to make it to the movie. *Charles is most likely to feel?* (a) Depressed (b) Frustrated (c) Angry (d) Contemptuous (e) Distressed
05. Someone believes that another person harmed them on purpose. There is not a lot that can be done to make things better. *The person involved is most likely to feel?* (a) Dislike (b) Rage (c) Jealousy (d) Surprise (e) Anxiety
06. Jim enjoys spending Saturdays playing with his children in the park. This year they have sporting activities on Saturdays and cannot go to the park with him any more. *Jim is most likely to feel?* (a) Angry (b) Sad (c) Frustrated (d) Distressed (e) Ashamed
07. Megan is looking to buy a house. Something happened and she felt regret. *What is most likely to have happened?* (a) She didn't make an offer on a house she wanted, and now she is trying to find out if it is too late. (b) She found a house she liked that she didn't think she would find. (c) She couldn't make an offer on a house she liked because the bank didn't get her the money in time. (d) She didn't make an offer on a house she liked and now someone else has bought it. (e) She made an offer on a house and is waiting to see if it is accepted.
08. Mary was working at her desk. Something happened that caused her to feel surprised. *What is most likely to have happened?* (a) Her work-mate told a silly joke. (b) She was working on a new task she hadn't dealt with before. (c) She found some results that were different from what she thought they would be. (d) She realized she would not be able to complete her work. (e) She had to do a task she didn't normally do at work.
09. Someone thinks that another person has deliberately caused something good to happen to them. *They are most likely to feel?* (a) Hope (b) Pride (c) Gratitude (d) Surprise (e) Relief
10. By their own actions, a person reaches a goal they wanted to reach. *The person is most likely to feel?* (a) Joy (b) Hope (c) Relief (d) Pride (e) Surprise
11. An unwanted situation becomes less likely or stops altogether. *The person involved is most likely to feel?* (a) Regret (b) Hope (c) Joy (d) Sadness (e) Relief
12. Hasad tries to use his new mobile phone. He has always been able to work out how to use different appliances, but he cannot get the phone to function. *Hasad is most likely to feel?* (a) Distressed (b) Confused (c) Surprised (d) Relieved (e) Frustrated
13. Dorian's friend is ill and coughs all over him without bothering to turn away or cover his

mouth. *Dorian is most likely to feel?* (a) Anxiety (b) Dislike (c) Surprise (d) Jealousy (e) Rage

14. Quan and his wife are talking about what happened to them that day. Something happened that caused Quan to feel surprised. *What is most likely to have happened?* (a) His wife talked a lot, which did not usually happen. (b) His wife talked about things that were different to what they usually discussed. (c) His wife told him that she might have some bad news. (d) His wife told Quan some news that was not what he thought it would be. (e) His wife told a funny story.
15. A supervisor who is unpleasant to work for leaves Alfonso's work. *Alfonso is most likely to feel?* (a) Joy (b) Hope (c) Regret (d) Relief (e) Sadness
16. The nature of Sara's job changes due to unpredictable factors and she no longer gets to do the portions of her work that she most enjoyed. *Sara is most likely to feel?* (a) Ashamed (b) Sad (c) Angry (d) Distressed (e) Frustrated
17. Leila has been unable to sleep well lately and there are no changes in her life that might indicate why. *Leila is most likely to feel?* (a) Angry (b) Scared (c) Sad (d) Distressed (e) Guilty
18. Someone believes another person has deliberately caused something good to stop happening to them. However, they feel they can do something about it. *They are most likely to feel?* (a) Angry (b) Contemptuous (c) Distress (d) Depressed (e) Frustrated
19. Matthew has been at his current job for six months. Something happened that caused him to feel regret. *What is most likely to have happened?* (a) He did not apply for a position he wanted, and has found out that someone else less qualified got the job. (b) He did not apply for a position he wanted, and has started looking for a similar position. (c) He found out that opportunities for promotion have dried up. (d) He found out that he didn't get a position he thought he would get. (e) He didn't hear about a position he could have applied for and now it is too late.

8.6.8. Affect-related Personality

Please answer each statement below by putting a circle around the number that best reflects your degree of agreement or disagreement with that statement. Do not think too long about the exact meaning of the statements. Work quickly and try to answer as accurately as possible. There are no right or wrong answers. There are seven possible responses to each statement ranging from 'Completely Disagree' (number 1) to 'Completely Agree' (number 7).

Well-being

- 05. I generally don't find life enjoyable (R)
- 20. On the whole, I'm pleased with my life
- 09. I feel that I have a number of good qualities
- 24. I believe I'm full of personal strengths
- 12. On the whole, I have a gloomy perspective on most things (R)
- 27. I generally believe that things will work out fine in my life

Self-Control

- 04. I usually find it difficult to regulate my emotions (R)
- 19. I'm usually able to find ways to control my emotions when I want to

- 07. I tend to change my mind frequently (R)
- 22. I tend to get involved in things I later wish I could get out of (R)
- 15. On the whole, I'm able to deal with stress
- 30. Others admire me for being relaxed

Emotionality

- 01. Expressing my emotions with words is not a problem for me
- 16. I often find it difficult to show my affection to those close to me (R)
- 02. I often find it difficult to see things from another person's viewpoint (R)
- 17. I'm normally able to "get into someone's shoes" and experience their emotions
- 08. Many times, I can't figure out what emotion I'm feeling (R)
- 23. I often pause and think about my feelings
- 13. Those close to me often complain that I don't treat them right (R)
- 28. I find it difficult to bond well even with those close to me (R)

Sociability

- 06. I can deal effectively with people
- 21. I would describe myself as a good negotiator
- 10. I often find it difficult to stand up for my rights (R)
- 25. I tend to "back down" even if I know I'm right (R)
- 11. I'm usually able to influence the way other people feel
- 26. I don't seem to have any power at all over other people's feelings (R)

Other items included in the Affect-related Personality total score

- 03. On the whole, I'm a highly motivated person
- 14. I often find it difficult to adjust my life according to the circumstances (R)
- 18. I normally find it difficult to keep myself motivated (R)
- 29. Generally, I'm able to adapt to new environments

8.6.9. Emotion Regulation

Thinking about everything you have experienced within the last month, both positive and negative events, how often on a range of 1 to 7, have you done the following (1 = I haven't done this at all; 7 = I have done this a lot)

Avoidant Coping

- 01. I resisted putting myself in potentially upsetting situations
- 26. I avoided doing difficult things despite there being some long-term benefits
- 36. I turned down opportunities to better myself as I was too scared
- 46. I avoided situations that might make me feel uncomfortable
- 71. I did not take action on potentially useful opportunities because I felt things would end up OK for me regardless

Perseverance/Confrontation

- 11. I did things that challenged me despite feeling scared
- 21. I pushed myself to do things that would achieve long-term benefits
- 31. I did things that initially seemed daunting but will be useful in the long-term
- 56. Despite it feeling negative at the time, I did things for the better of my future
- 66. I persisted through negative experiences towards the achievement of my goals

Planning

- 02. I thought of what would be the best steps to take to change a situation
- 27. I thought about how I could best cope with a situation
- 37. I made a plan of action
- 47. I tried to come up with a strategy about what to do
- 72. Entering tricky situations, I had planned for what I was going to do

Social Support Searching

- 12. I looked for other people to offer me compassion when I was upset
- 22. I looked to others for comfort when I felt upset
- 32. I tried to get emotional support from friends or relatives
- 57. I talked to someone about how I felt
- 67. I discussed my feelings with others

Rumination

- 03. I thought about previous negative or unpleasant experiences I have had
- 28. I have been preoccupied with what I thought and felt about my negative experiences
- 38. I ruminated over things that happened to me for a really long time afterward
- 48. I played back over in my mind how I acted in a past situation
- 73. I have been 'rehashing' in my mind recent things I've said or done

Distraction

- 08. I distracted myself during stressful experiences
- 18. I found things to distract myself with when feeling down
- 43. I moved my attention away from negative thoughts and events
- 53. In tough situations, I thought about other things to distract myself
- 63. I purposefully tried to think about something else when stressed

Positive Re-appraisal

- 04. When I wanted to feel more positive emotion, I changed the way I was thinking about the situation
- 29. I changed my emotions by changing the way I thought about the situation I was in
- 39. When I wanted to feel less negative emotions, I changed the way I thought about the situation
- 49. I looked for something good in the negative events that hapenned
- 74. I tried to see negative experiences in a different light, to make them seem more positive

Catastrophic Thinking

- 14. When I didn't feel good, I found myself catastrophic thinking
- 24. When having negative thoughts, I found it difficult to reassure myself that they were nothing more than my imagination
- 34. I found it difficult to stop negative thoughts spiralling towards terror
- 59. When thinking about negative events, everything seemed to feel worse
- 69. When I started thinking about negative things, more of my thoughts turned more negative

Venting

- 05. When I was upset I let my emotions out
- 30. When I got upset, I was really expressive of it
- 40. I let my feelings out
- 50. I found myself expressing my emotional distress
- 75. I vented to others about my feelings

Substance Use

- 10. I used alcohol or drugs to make myself feel better
- 20. I tried to lose myself for a while by drinking alcohol/taking drugs
- 45. I drank alcohol/took drugs, in order to think about things less
- 55. I used alcohol/drugs to help me get through tough times
- 65. I had alcohol/drugs so I could cope better

8.6.10. Well-being

Over the last two weeks… (0 = At no time; 1 = Some of the time; 2 = Less than half of the time; 3 = More than half of the time; 4 = Most of the time; 5 = All of the time)

1. I have felt cheerful and in good spirits
2. I have felt calm and relaxed
3. I have felt active and vigorous
4. I woke up feeling fresh and rested
5. My daily life has been filled with things that interest me

8.6.11. Life satisfaction

On a scale of 1 to 7, how accurately do you feel the statements reflect your life? (1 = Strongly disagree; 2 = Disagree; 3 = Slightly disagree; 4 = Neither agree not disagree; 5 = Slightly agree; 6 = Agree; 7 = Strongly agree)

1. In most ways my life is close to the ideal
2. The conditions of my life are excellent
3. I am satisfied with my life
4. So far I have gotten the important things I want in life
5. If I could live my life over, I would change almost nothing

8.6.12. Aggression

On a scale of 1 to 5, how characteristic of you are the following statements? (1 = Extremely uncharacteristic of me; 5 = Extremely characteristic of me)

1. Other people always seem to get the breaks
2. I sometimes feel that people are laughing at me behind my back
3. When people are especially nice, I wonder what they want
4. I tell my friends openly when I disagree with them
5. When people annoy me, I may tell them what I think of them
6. My friends say that I am somewhat argumentative
7. I am an even-tempered person
8. Sometimes I fly off the handle for no good reason
9. I have trouble controlling my temper
10. Given enough provocation, I may hit another person
11. If I have to resort to violence to protect my rights, I will
12. There are people who pushed me so far that we came to blows

8.6.13. Friendship quality

Considering your friendships… (1 = Almost never or never true; 2 = Not very often true; 3 = Sometimes true; 4 = Often true; 5 = Always or almost always true)

1. My friends listen to what I have to say
2. I feel my friends are good friends
3. When I am angry about sometime, my friends try to be understanding
4. My friends respect my feelings

8.6.14. Job performance

Are you currently employed? Yes or No

On a scale of 1 to 7, how well do you perform the following roles at work? Definitions and explanations of the terms are available by clicking ‘more information’

1. Leading and Deciding
2. Supporting and Cooperating
3. Interacting and Presenting
4. Analysing and Interpreting
5. Creating and Conceptualising
6. Organising and Executing
7. Adapting and Coping
8. Enterprising and Performing

8.7 Study 3 experimental protocol

Welcome participant, offer chair and make comfortable	
Confirm student ID	SID:
Confirm and check questionnaire battery has been completed online	Y
Confirm no history of Raynaud's phenomenon, fainting or seizures, frostbite or cardiovascular disorder and that they have no fractures, open cuts or sores on the arm to be submersed.	Y
Explain the cold-pressor task paradigm, making it clear that they can withdraw their hand whenever they wish.	Y
Check and record temperature of water	C =
Start the video recorder	Y
Place hand into water up to and including elbow and start timer	Y
Sit quietly within two metre distance of participant	Y
Wait until the participant either withdraws their hand or five minutes have passed, taking a note of the stop-watch time.	TIME = /300sec
Give towel to participant and ask if they are ready to begin the interview.	Y
First get a rating of pain and discomfort on the visual analogue scales	Y
Ask:	
So how was it? How did that task make you feel?	Y
What emotions, if any, were you experiencing during that experience?	Y
What was the main strategy (thought/behaviour) you used to deal with these feelings?	Y
What else were you doing or thinking during the task?	Y
Did you use any of the following strategies to deal with the experience? (use checklist below)	Y
Stop recorder, thank participants for their time and attention, and present the debrief form	Y
Replay video and complete the checklist again using behavioural observations	

Please rate the highest level of pain you experienced, using a clear line like so: 

Not at all painful

Extremely painful

Please rate the highest level of discomfort you experienced during the task, with a clear line:

Extremely Comfortable

Extremely Uncomfortable

Please think carefully about the different strategies you used to deal with the cold pressor task. Make a clear Y in the adjacent box for every strategy you used during the experience:

Behavioural disengagement (I chose not to complete the task at all)		Threat appraisal (I saw this task as a threat)	
Time to relax (I took time to relax and calm myself)		Self-efficacy (I thought I could overcome this task)	
Avoidant coping (I have been avoiding the situation)		Re-appraisal (I tried to think about this task in a positive way)	
Perseverance (I persevered through the situation)		Adaptive humour (I used positive humour)	
Situation modification (I changed things about the situation to make it easier)		Maladaptive humour (I used negative humour)	
Planning (I prepared for how I would deal with the task)		Positive self-statements (I told myself positive things to keep myself going)	
Social support search (I looked to others to help)		Denial (I pretended that it wasn't happening)	
Restraint (I tried to control myself)		Acceptance (I accepted that it was happening)	
Conflict resolution (I tried to change what made me feel negative)		Cognitive change (I changed the way I thought about the task)	
Attention deployment (I changed what I thought about)		Religion (I prayed or thought about my religion/faith)	
Focus on positive (I tried to focus on positive things)		Self-blame (I thought about the mistakes I made dealing with this task)	
Rumination (I kept thinking about the task)		Give up (I gave up)	
Distraction (I thought about other things to stop myself from thinking about the task)		Catastrophic thinking (I found myself catastrophic thinking)	
Mindfulness (I tried mindfulness strategies)		Exercise (I moved my body or did small exercises to help cope)	
Perspective taking (I reminded myself that, in perspective, this wasn't the worst thing in the world)		Venting (I expressed my negative emotions)	
Challenge appraisal (I saw this task as a challenge)		Suppression (I tried to suppress any negative emotions)	
Substance use (I took drugs/alcohol to help deal with the task)		Aggression (I used physical or verbal aggression to cope)	

Any others? Anything else you would like to note? If you have anything else to add, or would like to clarify anything, please write below or talk to the researcher.

Observational Checklist

Behavioural disengagement (I chose not to complete the task at all)	Participant attended but did not place their hand in the water	Threat appraisal (I saw this task as a threat)	--
Time to relax (I took time to relax and calm myself)	Participant purposefully paused for more than 5 seconds before starting the task	Self-efficacy (I thought I could overcome this task)	--
Avoidant coping (I have been avoiding the situation)	--	Re-appraisal (I tried to think about this task in a positive way)	--
Perseverance (I persevered through the situation)	Participant did not remove their hand from the water before time was called	Adaptive humour (I used positive humour)	Participant laughed or communicated using positive humour
Situation modification (I changed things about the situation to make it easier)	Participant changed the environment (e.g. participant put in earphones)	Maladaptive humour (I used negative humour)	Participant communicated using negative humour
Planning (I prepared for how I would deal with the task)	Participant prepared for the task (e.g. bringing a stress-ball to distract the other hand)	Positive self-statements (I told myself positive things to keep myself going)	Participant communicated using positive self-statement
Social support search (I looked to others to help)	Participant spoke to the experimenter or another	Denial (I pretended that it wasn't happening)	
Restraint (I tried to control myself)	--	Acceptance (I accepted that it was happening)	
Conflict resolution (I tried to change what made me feel negative)	--	Cognitive change (I changed the way I thought about the task)	--
Attention deployment (I changed what I thought about)	--	Religion (I prayed or thought about my religion/faith)	Participants prayed or made religious gestures during the task
Focus on positive (I tried to focus on positive things)	--	Self-blame (I thought about the mistakes I made dealing with this task)	
Rumination (I kept thinking about the task)	--	Give up (I gave up)	Participant removed their hand from the water before time was called.

Distraction (I thought about other things to stop myself from thinking about the task)	--	Catastrophic thinking (I found myself catastrophic thinking)	--
Mindfulness (I tried mindfulness strategies)	Participant concentrated on breathing during the task	Exercise (I moved my body or did small exercises to help cope)	Participant made a purposeful movement (e.g. strummed fingers) or did small exercises
Perspective taking (I reminded myself that, in perspective, this wasn't the worst thing in the world)	--	Venting (I expressed my negative emotions)	Participant vocalises negative feelings
Challenge appraisal (I saw this task as a challenge)	--	Suppression (I tried to suppress any negative emotions)	--
Substance use (I took drugs/alcohol to help deal with the task)	Participant took drugs or alcohol during the task	Aggression (I used physical or verbal aggression to cope)	Participant was verbally aggressive (e.g. swore) or enacted an aggressive act (e.g. stomped hand on desk)