

# **Adjustment to University: Predictors, Outcomes and Trajectories**

**by**

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A thesis submitted in partial fulfilment for the requirements of the degree of Doctor of  
Philosophy at the University of Central Lancashire

**November 2012**



## **Student Declaration**

I declare that while registered for the research degree, I was, with the University's specific permission, enrolled for the following awards: Professional Graduate Certificate in Education, Teaching Toolkit, and Post-Graduate Certificate in Learning and Teaching in Higher Education.

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**School:** Psychology

The transition to university presents students with considerable academic, social and emotional challenges. This thesis explored adjustment to university life in a UK post-1992 institution. Predictors of adjustment, patterns of adjustment over time and the effects of adjustment on student success were examined, using the Student Adaptation to College Questionnaire (SACQ).

A preliminary study indicated that the ‘psychological strength’ variables demonstrated to be important for adjustment in international research (viz., self-esteem, self-efficacy, locus of control, social support and attachment security) also predicted adjustment in the current setting, and that emotional intelligence (EI) may also have something useful to offer as a predictor.

Consequently, a follow-up study was undertaken to explore relations between adjustment to university and four disparate measures of EI. Results indicated that the self-report/trait EI measures (viz., the Schutte Emotional Intelligence Scale [SEIS], the Trait Emotional Intelligence Questionnaire - Short Form [TEIQue-SF] and the Emotional Self-Efficacy Scale [ESES]) were more strongly related to university adjustment criteria than the MSCEIT ‘ability’ measure, and that the TEIQue performed substantially better than the SEIS and ESES in this regard. However, the MSCEIT was superior with respect to the prediction of incremental variance in adjustment criteria over and above personality, IQ and other competing predictors.

Longitudinal investigations of the course of adjustment over the first two years of university indicated that whilst levels of overall adjustment, personal-emotional adjustment and institutional attachment were relatively stable over time, academic and social adjustment demonstrated decreasing and increasing trends respectively. Moreover the longitudinal analyses indicated that psychosocial variables measured at the start of university predict not only short-term but also long-run patterns of adjustment; the initial adjustment advantage of those who scored higher on psychosocial variables during the second month of university was maintained over the first two years.

Finally, relations between SACQ-measured adjustment in month two of university, and student success (i.e., continued enrolment and academic performance) in Years 1 and 2 were assessed. Associations between adjustment and Year 1 persistence were weak, and no relations were evident between adjustment and Year 2 persistence. Some adjustment facets were weakly predictive of Year 1 and Year 2 academic success.

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## ACKNOWLEDGEMENTS

First and foremost, I want to express my gratitude to my Director of Studies, Professor John E. Fisk, for his excellent guidance and support, for sharing with me his vast knowledge of research and statistics, for being kind and understanding (and stern when necessary), and for sticking with me through the ups and downs. Thank you also to my second supervisor Dr Andy Morley for his support and advice.

Thank you to Paul Smith for giving me emotional and practical support throughout and for always believing that I could do it. I also offer my gratitude to Brian Rogers for being a loyal friend and a constant reassuring presence, and for being on hand to give me advice on computer-related matters.

Thank you also to Andrew Stone for being a great mentor, motivator and friend when it was most needed, and to Janet Moores for being there to listen and encourage.

I also want to acknowledge the role of my beloved cats, Steve, Susie, Alfie, Otis and Homer, who have been my friends and companions throughout. You make me indescribably happy.

Finally, I would like to express my gratitude to the UCLan students who were kind enough to contribute their time to participate in my research.

## LIST OF ABBREVIATIONS

APM	Advanced Progressive Matrices
EI	Emotional intelligence
ESES	Emotional Self-Efficacy Scale
GPA	Grade Point Average
IPIP	International Personality Item Pool
LOC	Locus of control
MSCEIT	Mayer-Salovey-Caruso Emotional Intelligence Test
RQ	Relationship Questionnaire
RSQ	Relationship Scales Questionnaire
SACQ	Student Adaptation to College Questionnaire
SEIS	Schutte Emotional Intelligence Scale
SES	Socioeconomic status
SPS	Social Provisions Scale
TEIQue	Trait Emotional Intelligence Questionnaire

## **CHAPTER 1: OVERVIEW AND AIMS OF THE THESIS**

### **1.1 INTRODUCTION**

For many students, starting university is a challenging experience that involves significant life change and adaptation to a variety of demands (e.g., Baker & Siryk, 1989; Rickinson & Rutherford, 1995). Accumulating empirical evidence suggests that the degree to which students are able to successfully adjust to university life may affect their well-being, academic performance and whether they persist with their course of study (e.g., Baker & Siryk, 1989; Fisher & Hood, 1987; Krotseng, 1992; Wintre & Yaffe, 2000).

As student success and well-being are critical considerations for institutions (e.g., Higher Education Funding Council for England, 2007; Myers et al., 2012), so the topic of university adjustment has become the focus of much research effort. Work in this area has explored questions such as which factors facilitate or impede successful adjustment, whether certain student subpopulations are at greater risk for adjustment difficulties than others, how adjustment levels differ over time, and how adjustment is related to student success (e.g., Bettencourt, Charlton, Eubanks, Kernahan, & Fuller, 1999; Duchesne, Ratelle, Larose, & Guay, 2007; Nuñez & Cuccaro-Alamin, 1998; Wintre & Bowers, 2007). An important aspect of such investigations is how the findings may be used by university administrators and educational practitioners to guide policy and improve the student experience (e.g., Rickinson & Rutherford, 1996).

In reviewing research on predictors of university adjustment, it becomes apparent that studies exploring demographic predictors frequently generate mixed and inconclusive findings, suggesting complicated relationships that vary with differing samples and settings (e.g., Barthelemy & Fine, 1995; Larose & Boivin, 1998). Rather more consistent results are found, however, when one reviews the evidence regarding the influence of psychological and interpersonal variables (e.g., Njus & Brockway, 1999; Yazedjian & Toews, 2006). Specifically, aspects of positive psychological and interpersonal functioning are consistently and robustly associated with better adjustment to university life. To put it another way, individual psychological strengths, and good relations with others, are important protective factors during

the transition to university. Conversely, if students lack these attributes, this is likely to be a risk factor for poorer outcomes.

Where studies have explored longitudinal patterns of university adjustment, findings generally indicate that adjustment levels can change over time, although the precise nature of the fluctuations can vary considerably from study to study. This is likely due to substantial between-study differences in sampling (with regard to institutions, courses and participants), the time span under investigation, and how adjustment is operationalised. Moreover, evidence suggests that student characteristics influence patterns of adjustment over time, as well as cross-sectionally (e.g., Jackson, Pancer, Pratt, & Hunsberger, 2000). This introduces a further confounding factor that makes the identification of a 'typical' adjustment trajectory unlikely. Moreover, the possibility exists that many of the 'psychological strength' variables that are associated with adjustment cross-sectionally may also be predictors of longitudinal adjustment patterns.

The question of how adjustment is related to important outcomes such as academic performance and student retention has also been explored in theoretical and empirical work. The concept of 'integration' (which clearly has parallels with that of 'adjustment') forms the crux of a number of influential theoretical models of student retention (e.g., Tinto, 1975) and some empirical studies have generated support for this linkage, as well as evidence for relationships between adjustment and academic performance (e.g., Baker & Siryk, 1989; Wintre & Yaffe, 2000). However, the applicability of the theoretical models to non-traditional students and institutions has been questioned, and some empirical work has found weak or non-existent relations between adjustment and success criteria (e.g., Bean & Metzner, 1985; Beyers & Goossens, 2002).

It should also be noted that the vast majority of adjustment research has taken place in North American, Canadian, or Australian settings, and relatively little comparable UK data exist. Much of the research in this area is also somewhat dated. These are important considerations, in view of international differences in education systems, and the recent moves from an elite to a

mass higher education system. With the latter has come not only greatly-increased student numbers, but also a much-changed student body. As such, many students are less prepared for higher education than was traditionally the case, and may be at greater risk of dropout. These considerations provide the impetus to conduct up-to-date and context-specific research with the aim of substantiating earlier research conducted outside the UK, and further exploring how at-risk students may be more effectively identified and supported.

## **1.2 AIMS AND SIGNIFICANCE OF THE RESEARCH**

The current research explores adjustment to university in a UK 'post-1992' institution, where a number of 'high risk' students may be found. A large proportion of the research is devoted to the study of selected predictors of adjustment. A number of 'psychological strength' variables identified as important for adjustment in international research (viz., social support, self-esteem, self-efficacy, locus of control, and attachment style), as well as the relatively under-explored area of emotional intelligence, are investigated. This exploration of predictors of adjustment has a number of specific aims. First, it seeks to determine whether data collected in the current setting is consistent with the international research that consistently links the aforementioned psychological variables to university adjustment. Second, unlike previous work, the current research pits these variables against each other within the same analyses, in order to assess their relative and unique importance in predicting adjustment. With specific regard to locus of control, the research uses Levenson's (1981) multidimensional instrument to determine whether disaggregating externality into 'chance' and 'powerful others' has utility in relation to university adjustment criteria. Another major aspect of the work on predictors of adjustment in this thesis is a focus on the construct of emotional intelligence (EI). This is explored extensively in order to determine how its disparate subcomponents relate to separate facets of adjustment and to what extent it is able to add to the prediction of adjustment over and above competing variables. Moreover, these questions are addressed separately for four distinct conceptualisations of EI, with the purpose of determining which have the greater utility in predicting outcomes in this domain.

The research also explores demographic predictors of adjustment, and, in a related vein, subgroup differences in adjustment; evidence from the psychological, educational and sociological literatures has suggested that certain student subgroups (e.g., those with low socioeconomic status and females) may be more at risk for adjustment difficulties in one or multiple areas. Average adjustment levels are also assessed, since it might be expected that students at a 'new' university with a commitment to widening access would have generally low levels of adjustment. However, changes in the landscape of higher education, the student body, society in general and the facilities available to support students require such assumptions to be questioned.

An important aspect of the research is the use of a multi-faceted conceptualisation of university adjustment that facilitates a fine-grained exploration of the construct. To this end, the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989), comprising academic adjustment, social adjustment, personal-emotional adjustment and institutional attachment subscales, is employed. Although in widespread use in US transition research, it has seldom been used in Europe, and no other UK study has employed the instrument. Rather, the majority of UK research on university transition and adjustment tends to be qualitative, or to focus on a particular aspect such as emotional well-being (e.g., Christie, Munro, & Wagner, 2005; Cooke, Bewick, Barkham, Bradley, & Audin, 2006).

The present research also explores adjustment longitudinally. This is to determine whether adjustment facets change, or follow different trajectories from each other, over the first two years of university, and whether predictors associated with transition success cross-sectionally also predict patterns over time. This is important given that those predictors associated with long-term as opposed to merely early adjustment are arguably of greater importance and thus may be a more worthwhile focus for intervention efforts.

Finally, the research investigates the relationship of university adjustment to two important indicators of student success: continued enrolment (retention) and academic performance. This

was deemed important in view of conflicting findings regarding the importance of adjustment as a predictor of such outcomes, and the need for institution-specific research in this area.

The results and ideas that emerge from this thesis are of both theoretical and practical significance. With regard to theory, the identification of predictors of university adjustment contributes to a greater understanding of the latter construct (and plausibly, by extension, other types of adjustment). By using multiple measures of EI, the work contributes to the debate regarding which conceptualisations of the construct have greater utility for predicting real-life outcomes, and whether the ability/trait EI distinction is supported. In a similar vein, the utilisation of a multidimensional measure of locus of control adds to the construct validity of this approach. Further, the investigation of relationships between student adjustment and student success comprises a partial test of the theoretical models of retention which centre on the concept of ‘integration’.

In practical terms, the information could be used to develop effective transition programs for incoming students, and to help students prepare for university by developing the requisite attributes beforehand. Moreover, exploring relationships at the subcomponent level (for adjustment and EI) allows specific aspects of adjustment, and their associated specific facilitating factors, to be targeted. Finally, the results in relation to adjustment and student success suggest whether use of the SACQ, or a similar instrument, may have value as an early indicator of student failure or dropout.

### **1.3 ORGANISATION OF THE THESIS**

A review of the literature relating to adjustment to university is presented in Chapter 2. This includes a discussion of the issues that new students face, thus highlighting the multi-faceted nature of the challenges of transition. Definitional and measurement issues in the area of university adjustment research are acknowledged and discussed, and some of the more well-known measuring instruments briefly described. The majority of this chapter, however, is devoted to a review of research on predictors and correlates of university adjustment.



Study 1 is described in Chapter 3. This is a preliminary study of university adjustment in a UK post-1992 university. It explores average adjustment levels and compares subgroup differences in adjustment. However, the main focus is an investigation of whether demographic variables and selected psychosocial predictors of adjustment to university (viz., self-esteem, self-efficacy, attachment style, social support, locus of control and a single measure of EI [the Schutte Emotional Intelligence Scale; Schutte et al., 1998]) predict university adjustment. Important questions in relation to the Schutte EI scale are addressed: whether its subcomponents differentially influence the separate facets of adjustment, whether EI has incremental predictive validity over and above other study variables, and how non-EI study variables attenuate the relationship between EI and university adjustment.

Chapter 4 then discusses the important role of emotions in education and in educational transitions. This is followed by a brief overview of the construct of EI. Relevant literature pertaining to EI and its relationship to academic, social and personal-emotional functioning, and to student retention, is presented. Thus, the utility of investigating university adjustment within the framework of EI is suggested.

Study 2 undertakes a more rigorous test of the relationship between EI and university adjustment, and of the utility of the various EI measures in this domain. This is achieved by performing analyses separately for four EI measures chosen for their disparate theoretical underpinnings or measurement method, and controlling for personality and IQ, in addition to other study variables. This is presented in Chapter 5.

Chapter 6 is concerned with longitudinal patterns of adjustment over the first two years of university (Study 3). Investigations centre on trends in patterns of adjustment over time, whether the four facets of adjustment follow different trajectories, and whether the psychosocial variables that successfully predict cross-sectional adjustment also predict longitudinal patterns.

Chapter 7 describes Study 4. In contrast to previous studies in the thesis, which employ the SACQ as an outcome variable, this study explores its performance as a predictor. Specifically,

the utility of SACQ-measured university adjustment as a predictor of student success (defined in terms of academic performance and continued enrolment) in the current population is investigated.

Finally, Chapter 8 synthesises the empirical findings of the four studies. Some limitations of the research, and the theoretical and practical implications of the findings, are discussed. Some suggestions for future research in the area of university adjustment are advanced.

## CHAPTER 2: REVIEW OF LITERATURE: ADJUSTMENT TO UNIVERSITY

### 2.1 INTRODUCTION

#### 2.1.1 *The Challenges of the Transition to University*

The transition to university<sup>1</sup> is a stressful experience for many students, involving as it does a multitude of academic, social and personal challenges (e.g., Oppenheimer, 1984; Rickinson & Rutherford, 1995; Shaver, Furman, & Buhrmester, 1985; Tinto, 1987, 1993). In terms of academic challenges, one of the more obvious and inevitable is that students are required to engage in more intellectually demanding work than previously undertaken, since tertiary-level education requires students to develop skills such as critical thinking and academic writing (Guest, 2000; Hager, Sleet, Logan, & Hooper, 2003; Lillis & Turner, 2001). Moreover, these increased academic demands may result in students receiving marks or feedback that are worse than they expect, or to which they have previously been accustomed (Krause, Hartley, James, & McInnis, 2005), with associated detrimental effects on the individual.

The incoming student may also need to adapt to new approaches to teaching and learning: at tertiary level, classes are frequently large and impersonal, and students are required to take a greater responsibility for their own learning than in earlier educational environments (Kantanis, 2000; Scanlon, Rowling, & Weber, 2007; Wankowski, 1991). These challenges may be exacerbated by the fact that students frequently underestimate how different university will be in comparison to prior educational experiences, particularly with regard to the level of autonomy required (Brinkworth, McCann, Matthews, & Nordström, 2009). In a similar vein, students have reported feeling that their pre-university educational experiences have not adequately prepared them to study at degree level (Krause et al., 2005; Rickinson & Rutherford, 1995, 1996).

In addition to these academic concerns, the transition to a new and unfamiliar environment requires social and interpersonal adaptations. The precise nature of these may depend to some extent on factors such as the age or residential status of the student, and for some students it

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<sup>1</sup> Since much research in this area originates in North American settings, where 'college' as well as 'university' is used to refer to higher education, the two terms will be used interchangeably henceforth.

may constitute a major life transition. For traditional-aged students living on campus, for example, starting university may represent the first significant separation from the home, family and friends (Rosslyn, 2004). Associated with this is the leaving behind of existing sources of support (Earwaker, 1992; Farnill & Robertson, 1991; Pancer, Hunsberger, Pratt, & Alisat, 2000) and the need to alter and restructure existing relationships (Rickinson & Rutherford, 1995; Shaver et al., 1985). Moreover, new relationships need to be created; unsurprisingly, many new university students report feeling lonely or homesick at this time (Cutrona, 1982; Fisher & Hood, 1987; Shaver et al., 1985).

Turning to personal challenges, the transition to higher education involves issues relating to role change and establishing one's identity<sup>2</sup> and personal values (Chickering, 1969; Chickering & Reisser, 1993;<sup>3</sup> Patiniotis & Holdsworth, 2005; Scanlon et al., 2007). Students also need to familiarise themselves with their new environment and establish a new lifestyle and new routines (Rickinson & Rutherford, 1995).

The early weeks or months of university may also involve emotions and reflections associated with the experience of starting university, and whether the decision to undertake a degree (or to attend the chosen university in particular) was sound. For example, students frequently encounter uncertainties and problems in relation to discipline choice (Yorke & Longden, 2008) and may feel disillusioned and disappointed if the reality of the university experience has failed to meet expectations (Baker, McNeil, & Siryk, 1985; Baker & Schultz, 1992a; Lowe & Cook, 2003; Miles & Leinster, 2007; Pancer et al., 2000). Pressures may be further compounded by worries over finances (Cooke et al., 2006), and there may be the necessity to undertake paid work whilst studying, presenting further demands on the student's time and resources.

Unsurprisingly, in light of the stresses and challenges of starting university, many beginning students experience physical and psychological problems. The first year transition has been

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<sup>2</sup> 'Identity' is one of Chickering's (1969) seven vectors of student development. He defines it as "the clarification of a set of beliefs" (p.17).

<sup>3</sup> Chickering's original (1969) work on the developmental needs of college students focussed on traditional-aged students, whilst the second edition (Chickering & Reisser, 1993) also recognises those of mature students. It should be noted, however, that the developmental tasks remain largely the same.

shown to be associated with depression and negative moods (Beeber, 1999; Pritchard, Wilson, & Yamnitz, 2007; Tao, Dong, Pratt, Hunsberger, & Pancer, 2000; Wintre & Yaffe, 2000), eating disorders (Beeber, 1999) and increased mental disturbance and cognitive failures (Fisher & Hood, 1987). In a study of psychological symptoms, sleep patterns and the stresses of the transition to university, 42% of students reported sleep difficulties and these, as well as psychological symptoms, were associated with stressful events during the transition year (Farnill & Robertson, 1990). Moreover, in comparisons of the psychological well-being of first year students and the general population, that of the students was substantially worse (Cooke et al., 2006). Associations have also been made between starting university and physical health declines (Pritchard et al., 2007). Related to this, for some students the increased freedom associated with starting university may lead to experimentation with, or increased consumption of, alcohol and drugs, or engaging in other 'now or never' activities (Ravert, 2009). This is likely to be a concern for younger students in particular, since adolescents and young adults are more predisposed to engaging in sensation-seeking and risk-taking behaviours (Spear, 2000). Clearly, then, a major challenge for beginning university students is the management and safeguarding of their psychological and physical well-being.

In addition to the generic problems of transition, both traditional-aged and older students may each face their own particular challenges. Whilst traditional-aged students have to manage increased independence and the adoption of adult roles, starting university may also be a major challenge for mature students. Cross (1981) identifies a number of barriers and challenges that are more usually associated with older students, which he classifies broadly as situational, dispositional and institutional. Specifically, mature students may lack time, money, emotional support and confidence (both in themselves and in the institution's ability to accommodate their specific needs). Institutional barriers relate to curriculum delivery methods, or faculty attitudes or timetabling that may be biased against mature students. Moreover, the multiple role involvement of many adult students (Donaldson, 1999; Norton, Thomas, Morgan, Tilley, & Dickins, 1998) is likely to contribute to some extent to the aforementioned difficulties. Unsurprisingly, many adult students report problems integrating into university life (Graham &

Donaldson, 1999). For many younger students, significant challenges are the taking on of adult roles and responsibilities, including learning to manage their own time and finances, and having generally greater levels of personal freedom.

### *2.1.2 The Importance of Transitional Adjustment for Student and Institutional Success*

Whilst a successful and smooth transition to university life is a desirable and important outcome in its own right (Grayson, 2003), it is also significant due to its relationship to key indicators of student and institutional success. Student adaptation and integration into the university system are central aspects of numerous theoretical models of student development, persistence and withdrawal. According to Tinto's (1987) Student Integration Model, for example, difficulties with social and academic integration into university life, and also emotional distress, increase the likelihood of dropout. A substantial amount of empirical research has attested to this relationship; studies have concluded that students who experience significant adjustment difficulties are likely to discontinue enrolment (Daugherty & Lane, 1999; Gerdes & Mallinckrodt, 1994; Krotseng, 1992; McGivney, 2003; Rickinson & Rutherford, 1996; Trotter & Cove, 2005; Wintre & Bowers, 2007) and that students are at greatest risk of dropout during their first year (Cartney & Rouse, 2006; Krause et al., 2005). Adjustment to university has also been empirically related to academic achievement (e.g., Baker & Siryk, 1984, 1989).

### *2.1.3 Measuring Adjustment to University<sup>4</sup>*

The importance of university adjustment has resulted in a proliferation of research in the area, as researchers and practitioners seek to better understand the processes involved and how the student experience may be improved. However, across-study differences in definitions and operationalisations of the concept have been considerable. Some researchers have employed a single item to measure the entire construct, whilst others have focussed only on particular facets of the issues outlined earlier. Increasingly, however, a multi-faceted conceptualisation of the construct, consistent with the range of issues discussed in Section 2.1.1, is employed.

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<sup>4</sup> It should be noted that some of the instruments discussed in this section are no longer in use or not widely available.

A study of predictors of university adjustment by Lafrenière and Ledgerwood (1997), in which participants were asked to report their self-assessed 'adjustment to university' on a scale of one (poor) to five (excellent), is an example of the use of a single-item measure of university adjustment. This approach has clear advantages with respect to ease of administration and the minimisation of participant burden. However, the psychometric adequacy of such a method has been questioned (Baker & Siryk, 1984). Further, whether such an approach adequately captures the complexity of the construct, and whether the question will be interpreted by different participants in the same way, are additional areas of concern.

Another approach has been to assess academic performance (e.g., Busselen & Busselen, 1975), or academic aspects of adjustment as indicators of university adjustment. An example of the latter is an early attempt to explore non-cognitive predictors of college outcomes using the College Inventory of Academic Adjustment (CIAA; Borow, 1949, cited in Popham & Moore, 1960). This 90-item measure, aimed at differentiating between under- and over-achievers comprises six subscales, all focused on identifying student attributes shown to be related to academic performance (viz., curricular adjustment, maturity of goals and level of aspiration, personal efficiency, study skills and practices, mental health, and personal relations).

Another approach has been to define university adjustment in terms of psychological or physical well-being (e.g., Cooke et al., 2006) or combinations of psychological or interpersonal constructs (e.g., self-esteem, social support, depression and anxiety; Holmbeck & Wandrei, 1993). In such studies, higher levels of positive psychological constructs, and lower levels of those associated with psychopathology, are indicative of a 'successful' transition.

Research in the area has been advanced, however, by the development of various self-report measures that conceptualise university adjustment as a multi-faceted construct. Perhaps the most widely-used of these instruments is the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1984, 1989).<sup>5</sup> This 67-item measure incorporates subscales relating to academic adjustment, social adjustment, personal-emotional adjustment and attachment to the

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<sup>5</sup> Its precursor, the Freshman Transition Questionnaire (Baker & Siryk, 1984), is a similar, albeit shorter, version of the questionnaire, based on the same multidimensional conceptualisation of university adjustment.

institution (or ‘goal commitment’). Respondents are asked to indicate on a 9-point scale to what extent various statements apply to them, yielding a score for each subscale and a full-scale score of overall college adjustment. Its psychometric properties have been extensively explored, with validity being demonstrated by its ability to reveal theoretically-predicted relationships between adjustment scores, various psychological constructs, student withdrawal and persistence behaviours, and academic success (e.g., Baker & Siryk, 1989). Although the SACQ appears to have become the gold standard for transition research in the US (Duchesne et al., 2007) it has seldom been used in European settings.

Other, less-widely-used, instruments employ a similarly multi-faceted conceptualisation of adjustment with subscales addressing similar concepts to those that comprise the SACQ. One example of such a scale is the Student Involvement Questionnaire (SIQ; Pascarella & Terenzini, 1980, cited in Napoli & Wortman, 1998). This instrument has subscales relating to goal and institutional commitment, academic interactions and social integration, and as such it does not address the psychological and physical well-being aspects of adjustment included in the SACQ. In contrast, the College Adjustment Scales (CAS; Anton & Reed, 1991, cited in Eshun, 2006), is a fairly lengthy (108 items) inventory of college adjustment with subscales relating to anxiety, depression, suicide ideation, substance abuse, self-esteem, and interpersonal, family, academic and career problems. As such, the CAS has a primary focus on psychological and relationship concerns, with the aim of identifying students who may be in need of counselling or support.

More widely-used in European settings is the College Adaptation Questionnaire (CAQ; Van Rooijen, 1986). This 18-item scale is a brief, unidimensional measure of general college adjustment which comprises items relating to the different facets of adjustment, yet appears to focus predominantly on the student’s feelings of satisfaction with university life, and their particular institution. Notwithstanding this apparent bias, the measure has demonstrated strong correlations with SACQ scores (Beyers & Goossens, 2002).

Finally, studies have employed qualitative techniques such as interviews, focus groups or diary methods to explore students’ adjustment to university (e.g., Christie, Tett, Cree, Hounsell, &



McCune, 2008; Risquez et al., 2007). These more open-ended explorations of adjustment have a number of advantages over quantitative methods, generating data that is in some respects richer and more informative. Importantly, there is also a greater potential for unexpected issues to be uncovered.

In conclusion, a multitude of measures and techniques have been employed in the assessment of university adjustment. Moreover, as the above discussion illustrates, some variables such as anxiety, stress and depression may variously be construed as outcomes and also aspects of adjustment (and additionally, as discussed in Section 2.2, below, predictors or correlates of adjustment).<sup>6</sup>

## **2.2 PREDICTORS AND CORRELATES**

Although for some students the transition into higher education is relatively smooth, others experience adjustment difficulties by varying degrees. Considerable research effort has therefore been directed at determining the complex factors that influence adjustment outcomes. This is important for both theoretical and practical reasons. Theoretically, it enables researchers to better understand university adjustment (and, by extension, general psychological adjustment) and its facilitating and impeding factors. More practically, it provides educational practitioners with a means of facilitating the development of appropriate, pro-active and theoretically-grounded interventions.

In reviewing evidence from the psychological and educational literatures, it becomes apparent that personal (student), institutional and environmental variables may all have some bearing on university adjustment.

With regard to the former, it should be noted that educational variables (e.g., students' attitudes towards higher education, their conceptions of teaching and learning, approaches to studying and epistemological beliefs) are important considerations (see e.g., Baxter Magolda, 1992;

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<sup>6</sup> Clearly, the timing of the administration of measures determines to some extent how they ought to be construed. For example, measured pre-transition, they would more than likely be considered predictors; later evidence of psychopathology would be more likely to indicate a difficult transition, or the outcome of a difficult transition. However, matters become somewhat more complicated when pre-transition baseline measures have not been taken, since it is not possible to determine whether the psychopathology pre-dates the transition, and as such is unrelated to it.

Kember, 2001; King, 2000; Paulsen & Feldman, 1999). However, in order to focus on theoretically-interlinked variables, and to maintain a tractable scope, the current review and thesis restricts itself to the sociodemographic, psychological and interrelational characteristics of students that have been explored in relation to adjustment.

## *2.2.1 Sociodemographic Variables*

### *2.2.1.1 Gender*

One of the more consistent findings regarding gender and adjustment is that females tend to have poorer emotional adjustment during the transition than males. For example, females have reported higher levels of stress (Arthur & Hiebert, 1996), depression (Alfeld-Liro & Sigelman, 1998; Fisher & Hood, 1988; Vivona, 2000) and worry/anxiety (Fisher and Hood, 1988; Vivona, 2000) than males and are also more likely to suffer from phobias and cognitive failures (Fisher and Hood, 1988) at this time. In a similar vein, studies have found that males report higher scores than females on the personal-emotional subscale of the SACQ (Baker & Siryk, 1989; Vivona, 2000) and these results have been substantiated where studies have used general measures of psychology well-being. For example, in a study employing the GP-CORE (a measure of subjective well-being, symptoms, life functioning and risk; Sinclair, Barkham, Evans, Connell, & Audin, 2005) four times over the course of the first year of university, Cooke et al. (2006) discovered that females had poorer psychological well-being at Time 1 (although similar numbers of males and females were classified as 'psychologically vulnerable'). Similar results were found by Kenny and Donaldson (1991) using the Hopkins Symptoms Checklist (HSCL; Derogatis, Lipman, Rickles, Uhlenhuth, & Covi, 1974), with females reporting slightly more psychological symptoms during the transition to university. Further, there is evidence that only males' self-concepts become more positive over the university transition period (Alfeld-Liro & Sigelman, 1998).

This evidence for poorer psychological well-being for females during the university transition is consistent with well-established findings that females tend to have poorer emotional and psychological well-being compared to males (e.g., Briscoe, 1982). Possible explanations for

this may be gender effects in coping such as males being more likely to use problem-focused coping strategies (Folkman & Lazarus, 1980; Stone & Neale, 1984).

Whilst findings regarding gender and personal-emotional adjustment appear to be reasonably consistent, such differences are not so apparent in other facets of adjustment (and in overall adjustment). There is some evidence to suggest that females have higher social adjustment than males (Baker & Siryk, 1989; Leong & Bonz, 1997).<sup>7</sup> In the latter study, the authors suggest that females' higher social adjustment scores may be associated with their being more willing to seek social support. Findings that females report feeling less lonely and more socially supported (Halamandaris & Power, 1999) also suggest that females may be better socially integrated.

In terms of academic adjustment, Leong and Bonz (1997), similar to their findings on social adjustment, found a trend where females were better academically adjusted than males, although not significantly so. Baker and Siryk (1989) also found no statistically significant gender differences for the academic adjustment subscale of the SACQ. Similarly, there is little evidence for gender differences in what Baker and Siryk (1989) refer to as 'institutional attachment' or 'goal commitment'. In their review of 17 analyses of institutional attachment, only one yielded significant gender differences, with females scoring higher.

Finally, findings regarding gender differences in overall adjustment have been mixed. Using the College Adjustment Scales (Anton & Reed, 1991), Enochs and Roland (2006) found that males had higher overall adjustment than females. However, when students in 'Freshman Year Experience' halls (characterised by specialised programs to help students integrate into the university environment) were studied separately, no gender differences were found. The findings suggest that the environment in these halls may ease females' transition to university. Other research has found that females were overall better-adjusted than males (Halamandaris & Power, 1999, using the CAQ). However, the questionnaire was administered two weeks before the end of the academic year. Students therefore had a considerable amount of time to make the

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<sup>7</sup> However, Leong and Bonz only reported a trend in this direction, and results did not reach significance.

adjustment to university life; measures taken earlier in the year may have yielded different results.

Other studies have found no gender differences in overall adjustment (Baker & Siryk, 1989; Fisher & Hood, 1988; van Rooijen, 1986, using the SACQ, CAQ and CAQ respectively).

#### 2.2.1.2 Age

As a result of widening access initiatives and moves towards lifelong learning, mature students now make up a large proportion of the higher education population and whilst there has been much research on the transition experiences of traditional-aged students, those of mature students are less well understood. Surprisingly, there are few studies that have directly explored differences in adjustment between mature and traditional-aged students. A number of studies have explored age as a continuous variable, yet these are somewhat limited in that they generally comprise students who are predominantly in the traditional student age-range.

In these studies, findings regarding the relationship between age and adjustment have been mixed. Measuring the adjustment of first year students using combinations of the SACQ and SIQ, Napoli and Wortman (1998) reported positive correlations between age and academic adjustment, psychological adjustment and institutional commitment although there was a negative correlation between age and social adjustment. However it should be noted that in this study, 81% of students were in the 18-19 year old category. Similar results were found by Pratt et al. (2000) who report a positive correlation with age and overall adjustment (the only SACQ score employed). However, exploring first year students (with a mean age of 18.69) Brooks and DuBois (1995) found weak negative correlations between age and the social and attachment subscales, and overall adjustment and no correlation between age and the academic and personal and emotional subscales.

Findings are perhaps more meaningful and interesting where studies compare mature and traditional students. In a qualitative study that explored first-year students' journal-based reflections over the first semester of university, Risquez et al. (2007) found numerous

differences between the two. Moreover, the study gives an insight not just into levels of adjustment, but also patterns of adjustment over time. Based on diary contents, initial levels of adjustment appear to be lower for mature students, followed by further decreases in adjustment as they enter a period of pronounced 'disillusionment'. However, they also appear to recover quickly and move into the 'adjustment' phase more suddenly than, and before, their traditional-aged counterparts.

It should be noted, however, when exploring differences based on age, that there are likely to be systematic differences between older and younger students in terms of social class, choice of subject, entry qualifications, etc. This makes it difficult to disconfound the effects of age from other factors.

#### 2.2.1.3 *Marital Status*

Despite the number of married students increasing along with higher numbers of mature students, there is a relative paucity of studies exploring the relationship between marital status and college adjustment. In an early review, Busselen and Busselen (1975) found that being married was generally associated with higher levels of college adjustment, as measured by academic achievement. More recently, in a comparison of married and single US students, Meehan and Negy (2003) found that married students reported greater adjustment difficulties (as measured by the SACQ) relative to unmarried students in terms of institutional attachment and social involvement on campus. No personal-emotional or academic adjustment differences were found between the two groups. For married students, greater levels of perceived social support from family and friends, but not from spouses, were related to higher scores on all four SACQ subscales. Moreover, contrary to the researchers' predictions, the spouse also being a student was not associated with greater adjustment. They hypothesise that this may be due to the stresses and burdens of studying may become compounded when both members of the couple are students. Another important finding from this study is that levels of college adjustment were related to the quality of the marital relationship, such that affection, support, and the effective resolution of differences were associated with higher levels of social adjustment, personal adjustment and institutional attachment. The findings suggest other

considerations, in addition to being married *per se*, are important for adjustment. However, as the authors note, the correlational nature of the study precludes conclusions regarding causality; plausibly, college functioning may influence the quality of the marital relationship.

#### 2.2.1.4 *Socioeconomic and Generational Status*

The relationship between socioeconomic status (SES) and educational experiences and outcomes has been a topic of sustained interest in both the educational and sociological literatures. Generally, lower-SES students are considered to be educationally disadvantaged in comparison to their higher-SES counterparts (Walpole, 2003) and higher education is often seen as being incompatible with working-class identity (Archer & Hutchings, 2000). Students from low-income families may also face additional difficulties related to the necessity to undertake paid employment in addition to their studies (Bozick, 2007).

Unsurprisingly, then, there is substantial empirical evidence to suggest that low-SES students experience greater difficulty in their transition to university life compared to their higher-SES counterparts. In a study by Patiniotis and Holdsworth (2005), working-class students perceived their participation in HE as a ‘risk’, both financially and in terms of their identity. In a similar vein higher levels of family income have been shown to predict higher levels of social and personal-emotional adjustment (Brooks and Dubois, 1995).

A possible explanation for the relationship between adjustment and SES is mediation by a sense of belonging. Ostrove and Long (2007) found that social class background, assessed both objectively (using indicators such as family income, parents’ education and parents’ occupation) and subjectively (by asking participants to self-identify with a particular social class) was related to participants’ social and academic adjustment (with adjustment measured using SACQ subscales and the College Self-Efficacy Inventory [CSEI; Solberg, O’Brien, Villarreal, Kennel, & Davis, 1993]). Importantly, however, relationships were fully mediated by a sense of belonging (the latter measured by the item ‘I fit in well as part of the college environment’ taken from the SACQ and the question ‘Overall, to what extent do you feel you belong at [name of college]?’).

Other research, involving mature working-class students at an elite university, also underscores the relationships among class, belonging and social adjustment. Using semi-structured individual and group interviews to explore students' experiences of their first three months at university, Tett (2004) reported participants' feelings of exclusion when amongst non-working-class students. Further, social integration appeared to be constrained; working-class students reported limiting their social lives at university to other students of their own class, and having minimal interactions with other undergraduates.

Closely related to SES is parental education level. First generation college students (FGCS)<sup>8</sup> have been found to be at greater risk of poorer educational outcomes than second generation college students (SGCS) and to have more difficulty assimilating into the higher education environment (Pascarella, Pierson, Wolniak, & Terenzini, 2004). Due to lack of exposure to people with experience of higher education, they are frequently less academically prepared (Murphy & Hicks, 2006), lack knowledge about college life (Billson & Brooks-Terry, 1982), have lower educational aspirations (Terenzini, Springer, Yaeger, Pascarella, & Nora, 1996) and poorer grades (Pascarella et al., 2004).

In terms of empirical research on the subject of generational status and adjustment, Nuñez and Cuccaro-Alamin (1998) found that, compared to second-generation students, first-generation students had lower levels of academic integration (as assessed by level of interaction with academic staff, attendance at lectures, and participation in study groups) and also social integration (as assessed by participation in clubs and programs, and contact with faculty and friends outside class). Pascarella et al. (2004) similarly found that, in terms of social adjustment, first generation students have been shown to have significantly lower levels of extra-curricular involvement, and interactions with peers.

Other research on the subject has been more equivocal. In Toews and Yazedjian's (2007) study of white and Hispanic students' college adjustment, parents' education level was predictive of overall adjustment as measured by the SACQ, although only for female students. In a US study

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<sup>8</sup> Generally defined as those students for whom neither parent has completed a full year of higher education.

employing interviews and focus groups, Shields (2002) found that second generation status was associated with students feeling more prepared for university, though it appeared to have no advantages with respect to GPA, feeling more successful, or stress levels. Hertel (2002) found that second generation college students had better social adjustment than first generation students, although there were no differences in the other four SACQ scores (i.e., personal-emotional adjustment, academic adjustment, institutional attachment and overall adjustment).

Plausibly, contradictory findings in relation to generational status may relate to Shields' (2002) suggestion that second-generation students may feel pressure from parents to achieve academically, which counteracts the advantages of second-generation status.

#### *2.2.1.5 Residential/Home-leaving Status*

Whilst traditionally the majority of UK university students lived on campus, widening access initiatives and changes to funding arrangements have resulted in increasing numbers of students commuting to university. Frequently, this is due to domestic commitments or economic expediency. Working-class students have also reported electing to commute in order to maintain their sense of belonging to their local communities (Patiniotis & Holdsworth, 2005).

Students who live at home rather than on campus have frequently been portrayed as being at a disadvantage. For example, according to Chickering (1974), cited in Chickering and Kyle (1999), commuter students are not as involved in academic, extracurricular and social activities, are less able to develop personal skills, and miss out on experiences that are educationally and developmentally useful.

Leaving home, however, entails greater restructuring of social support networks, getting used to a new location, and potential problems with roommates. Traditional-aged students may feel unprepared for living away from home, and leaving home to attend university has been associated with homesickness (Fisher & Hood, 1987) and separation anxiety (Seligman & Wuyek, 2007). Larose and Boivin (1998) found that adolescents who had left home to attend college reported increased feelings of anxiety and loneliness, and decreased levels of perceived



social support. In contrast, those who stayed at home did not display this pattern of results. Whilst Fisher and Hood (1987) found no differences in psychological disturbance and absent-mindedness between residential and home-based students, those who reported feeling homesick had higher levels of both.

Other studies, however, find beneficial effects of moving away. In Sullivan and Sullivan's (1980) study comparing males who lived with their parents and those who left home to attend college, leaving home was associated with better relationships with parents, greater independence, and greater satisfaction with independence than living with parents. Similarly, maintaining a separate residence from parents has been found to be associated with better university adjustment (Anderson & Fleming, 1986).

One possible explanation for these seemingly contradictory results is that the relationship between living on campus and adjustment may depend on various aspects of the new environment. In a studies of residence hall climate, positive aspects of living arrangements such as social support, lack of conflict and group cohesion predicted better college adjustment among residents (Barthelemy & Fine, 1995; Kaya, 2004).

There is also evidence to suggest that the relationship between adjustment and living away from home may be mediated by geographical distance. Fisher, Murray, and Frazer (1985) found that students who reported homesickness and college adjustment difficulties were further from home than other students. Similarly, Brooks and DuBois (1995) found a significant negative correlation between social adjustment and distance from home. Whilst Mooney, Sherman, and LoPresto's (1991) study found no relation between geographical distance from home and adjustment, there was a difference based on perceived distance, such that students who thought the distance as 'just right' were better-adjusted than those who perceived it as 'too far'.

Other research suggests that gender and the role of social support may be important considerations in this regard. In Lafrenière and Ledgerwood's (1997) study, leaving home was not a main effect predictor of adjustment, although some interesting effects of residential status

emerged: females who lived at home during the transition reported the most stress and males who lived at home reported the least. There were also interactions among place of residence, gender and perceived family support: where perceived support from family was high, place of residence and gender did not appear to influence university adjustment. However, where perceived family support was low, females living away from home reported the highest levels of adjustment and females living at home the lowest, whilst males showed the opposite pattern. The authors suggest that these findings may be explained by females being expected to continue to undertake traditionally-female household tasks whilst at living at home, or that females are less supported in their attempts to establish independent identities.

In terms of social adjustment to university, there is evidence to suggest that living off-campus affects students' ability to fully integrate into the university environment (Christie et al., 2005; Holdsworth, 2006). However, it should be noted that some studies have found little or no association between home-leaving status and indicators of college adjustment (e.g., Fisher & Hood, 1987; Holmbeck & Wandrei, 1993).

#### *2.2.1.6 International Student Status*

The problems of being away from home are likely to be even more pronounced for international students, who frequently report feeling homesick (Yink & Liese, 1994) and experiencing cultural (Zhai, 2004), social (Chapdelaine & Alexitch, 2004) and language (Chen, 1999; Zhai, 2004) difficulties. Whilst there appear to be few studies directly comparing levels of adjustment of international and non-international students, one such US-based study by Kaczmarek, Matlock, Merta, Ames, and Ross (1994) found that international students had greater transition difficulties than non-international students, reporting poorer levels of social adjustment and institutional attachment.

#### *2.2.1.7 Ethnicity*

Students who belong to an ethnic minority may also face additional difficulties, although research indicates that this does not substantially impact on adjustment. Research in this area tends to be US-based and compares blacks with whites, Hispanics with whites, or mixed racial

groups with whites. In one study, comparisons of levels of adjustment between white and black US college students at a predominantly white university found no differences between the two groups on academic and social adjustment, and institutional attachment, scales of the SACQ and black students scored higher on personal-emotional adjustment (Tomlinson-Clarke, 1998). Similarly, Hutz, Fabian and Martin (2003) found no difference between minority and majority students' adjustment.

#### *2.2.1.8 Disability*

Increasing access to university has resulted in an increase in the number of students with disabilities studying at higher education level. However, many studies find increased difficulties in adjustment among disabled students in comparison to their non-disabled peers. For example, Saracoglu, Minden and Wilchesky (1989) found that students with learning disabilities had poorer academic and personal-emotional adjustment than a comparison group of non-learning-disabled students. Similar results were reported by Hartmann-Hall and Haaga (2002) who found that students with learning disabilities demonstrated poorer academic adjustment than their non-learning-disabled counterparts. Students with Attention Deficit Hyperactivity Disorder (ADHD) were found to have poorer adjustment in academic, social and emotional domains in comparison to non-ADHD students (Shaw-Zirt, Popali-Lehane, Chaplin, & Bergman, 2005).

In contrast to much of the research on adjustment and disabilities, however, in Estrada, Dupoux, and Wolman's (2006) exploration of the personal-emotional and social adjustment to university life in students with and without learning disabilities, no differences in personal-emotional adjustment were found. Moreover, learning disabled students scored higher in social adjustment. The findings of this study, more recent than many of the others outlined, may reflect an increased understanding of the difficulties of student with disabilities, and thus more effective provision for their needs.

### 2.2.1.9 *Course of Study*

Whilst comparisons of different study disciplines with respect to university adjustment are relatively scarce, there are some indications that arts students may experience poorer psychological adjustment or psychiatric difficulties than science students (Cooke et al., 2006; Hawton, Haigh, Simkin, & Fagg, 1995; Springett & Szulecka Lekarz, 1986).

Possible explanations for the findings are that different academic disciplines place different demands on students, or attract different types of student. However, Springett et al.'s (1986) finding that between-faculty differences were apparent at the *commencement* of courses, would appear to provide some support for the latter explanation.

## 2.2.2 *Psychosocial Variables*

Psychological variables have been extensively explored in relation to university adjustment. Indeed Bean and Eaton (2000) stress their importance in their Psychological Model of College Student Retention. According to their theorising, three key psychological processes predict good levels of academic and social integration. With 'attitude-behaviour' as the overarching theory for the model, it postulates that self-efficacy assessments, coping processes and attributions (specifically locus of control) may lead respectively to positive self-efficacy, reduced stress, increased confidence, internal attributions and greater levels of motivation. These in turn influence academic and social integration (and, ultimately, persistence).

As illustrated below, a substantial amount of empirical research has explored these and other psychosocial variables with regard to their relation to student adjustment.

### 2.2.2.1 *Personality*

A number of studies have focused on the influence of personality on adjustment. One means by which this has been undertaken is by exploration of broad personality taxonomies. Using the CAQ to measure adjustment, Halamandaris and Power (1999) found that scores were positively associated with extraversion, negatively with neuroticism, and negatively with psychoticism. In a similar vein, Brooks and Dubois (1995) found that extraversion correlates negatively with

psychological symptoms related to the transition, and positively with overall adjustment, social adjustment and institutional attachment. Emotional stability (the opposite of neuroticism, as referred to by Halamandaris and Power, 1999, above) correlated negatively with psychological symptoms during the transition and positively with personal-emotional adjustment.

However, in a study of Chinese students in Japan, Jou and Fukada (1996) found that neuroticism was unrelated to adjustment as measured by the Freshman Transition Questionnaire (Baker, 1981) although, consistent with other research, extraversion was significantly and positively related. The findings may be explained by possible effects of cultural differences, or international student status, on the relationships between the variables.

Other, narrower, personality traits have also been studied. Of these, perfectionism has emerged in a number of studies as being negatively related to college adjustment. A key issue of note is that studies generally differentiate among perfectionist typologies. Some research (e.g., Rice & Dellwo, 2002; Rice & Lapsley, 2001; Rice & Mirzadeh, 2000) differentiates between ‘adaptive’ and ‘maladaptive’ perfectionism.<sup>9</sup> Unsurprisingly, negative adjustment outcomes tend to be more closely related to maladaptive than adaptive perfectionism. For example, Rice and Mirzadeh (2000) found that maladaptive perfectionism was related to students being less academically integrated and more depressed. Adaptive perfectionism, on the other hand, was beneficial in terms of academic integration. Other research has found that maladaptive (but not adaptive) perfectionism is associated with higher levels of stress (Chang, Watkins, & Banks, 2004).

There is also evidence to suggest that maladaptive perfectionism predicts both concurrent and prospective adjustment, with perfectionism being more closely related to concurrent outcomes when they are measured later in the semester (Rice, Leever, Christopher, & Porter, 2006), raising the possibility that maladaptive perfectionism influences adjustment more strongly under situations of academic pressure.

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<sup>9</sup> According to Aldea and Rice (2006), adaptive perfectionists strive for high standards, which generally has positive outcomes in terms of the individual’s well-being and performance. However, maladaptive perfectionists are prone to having *unrealistically* high standards and, as a result, tend to be overly-self-critical and to experience high levels of anxiety and distress.

In a comparison of adaptive perfectionists, maladaptive perfectionists and non-perfectionists, Rice and Dellwo (2002) found that maladaptive perfectionists evidenced significantly greater levels of depression than adaptive perfectionist and non-perfectionists, although adaptive perfectionists in turn reported greater depression than non-perfectionists. In terms of college adjustment, maladaptive perfectionists reported lower academic integration than adaptive perfectionists, and lower social integration than both of the other two groups. Interestingly, although maladaptive perfectionists did not *consider themselves* to be as academically well-integrated as the other two groups, all three groups evidenced comparable levels of academic performance. This raises the question of whether adjustment differences found in such research are a reflection of students' negative perceptions, rather than actual levels of adaptation.

Other perfectionist typologies have also been explored. In a study focusing only on the institutional attachment (goal commitment) subscale of the SACQ, and exploring socially-prescribed perfectionism, other-oriented perfectionism, and self-oriented perfectionism<sup>10</sup> negative relationships were obtained between each of the three types of perfectionism and adjustment scores (Mann, 2004). Finally, using a brief indicator of perfectionism developed for their study, Pritchard et al. (2007), using the Profile of Mood States, found although perfectionism did not predict students' psychological well-being, it did predict poorer physical health at the end of the first year of university.

Another variable that has been studied is optimism. According to Scheier and Carver (1985, 1987), dispositional optimism is a stable, trait-like attribute of individuals which refers to the extent to which they have positive expectancies for the future. Its buffering effect in terms of university adaptation is another consistent finding in the literature. For example, Rice, Herman and Petersen (1993) found dispositional optimism to be a significant predictor of lower levels of psychological distress, whilst in Pritchard et al.'s (2007) study of first year law and medical students, optimism was related to both better physical and psychological health. Similarly, having a positive outlook has been found to be important to first year students' social and

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<sup>10</sup> Self-oriented perfectionism relates to wanting perfection for oneself; other-oriented perfectionism relates to expecting others to be perfect; socially-prescribed perfectionism is the perception that others require perfection of oneself (Hewitt & Flett, 1991).

emotional adjustment to university (Stevens & Walker, 1996). In a study of African-American college students that conceptualised adjustment in terms of stress levels, however, optimism was negatively related to less global stress, but not significantly correlated with reported academic stress (although results were in the expected direction; Baldwin, Chambliss, & Towler, 2003).

There is some evidence that other variables may mediate the relationship between optimism and adjustment: Aspinwall & Taylor (1992) [assessing university adjustment by means of various measures tapping stress, well-being and the facets of adjustment comprising the SACQ] found that optimism predicted higher levels of college adjustment, both directly and also mediated by social support and active coping. Other research has identified optimism as a mediating variable in relationships between other variables and college adjustment. Specifically, the relationship between adjustment and authoritative parenting has been found to be mediated by optimism (Jackson, Pratt, Hunsberger, & Pancer, 2005).

Related to optimism is research on students' expectations and their relation to university adjustment. For example, Jackson et al. (2000) found that students with fearful, as opposed to optimistic, prepared or complacent expectations, were more likely to report stress, depression and poorer university adjustment.

Findings regarding optimism may appear to be somewhat at odds with ideas surrounding 'the freshman myth' and expectations regarding starting university. As discussed previously, there is evidence in the literature that students who have unrealistically high expectations about university tend to become disillusioned and drop out (e.g., Baker et al., 1985). However, as Jackson et al. (2000, p. 2103) point out:

“... findings that discrepancies between expectancies and experiences were associated with negative outcomes may have reflected primarily the degree of discontent of those with poor adjustment. They do not necessarily demonstrate that the discontent followed from particularly positive expectations per se.”

Moreover they assert that, notwithstanding the freshman myth, optimistic expectancies regarding the university transition should generally predict better adjustment, particularly if these expectations combine with positive beliefs about one's self-efficacy.

Along similar lines, constructs relating to displaying psychological strength or resilience in the face of adversity or change have also been linked with adjustment. Kobasa (1979) defined hardiness as a set of personality characteristics (viz., a sense of control over life circumstances, a commitment to activities, and the viewing of life events and changes as challenges rather than threats) that combine to protect the individual against stress and disease. Measuring hardiness using Kobasa's (1985) Personal Views Survey, Mathis and Lecci (1999) found strong positive correlations between hardiness and all SACQ subscales, even after controlling for positive and negative effect. The similar construct of adaptability to change (using an unpublished self-report instrument where participants indicate how difficult they would find it to manage various types of life changes) was also found to be related to the adjustment of first year students as measured by self-esteem, social support, depression, anxiety and physical symptoms (Holmbeck & Wandrei, 1993).

Turning now to perceptions of control, the changes involved during the transition to university may result in feelings of loss of control for students (Fisher, 1986, cited in Fisher & Hood, 1987). The construct of locus of control (LOC), the extent to which one feels that one controls events in the world, rather than their being determined by fate or chance (Rotter, 1966) has been explored extensively in relation to well-being and education, with an internal locus of control generally relating to positive outcomes. For example, LOC has been found to moderate the relationship between stress and mental health (Parkes, 1994), and has been consistently related to positive educational academic outcomes such as better academic performance (e.g., Traub, 1982). Bar-Tal and Bar-Zohar (1977) suggest that this may be due to LOC being related to mediating motivational and cognitive reactions.

Similarly, research tends to conclude that an internal locus of control (both general and domain-specific) tends to be positively related to adjustment to university. In a study of university upperclassmen (as opposed to freshmen) Martin and Dixon (1994) found that those with an internal orientation on Rotter's generalized LOC scale scored higher than externals on university adjustment as measured by the Freshman Transition Questionnaire (FTQ; Baker & Siryk, 1984), a precursor of the SACQ.



Some studies have found similar positive results associated with internality using domain-specific measures of locus of control. For example, in Mooney et al.'s (1991) study of traditional-aged female students, an internal academic LOC (beliefs in personal control over academic outcomes) was positively correlated with the SACQ full scale score and each of the subscales.

However, there is evidence that the importance of LOC may depend on outcome valence. Using measures of social and academic locus of control, Njus and Brockway (1999) found that an internal LOC was associated with first year university students' high school academic and social adjustment, as measured by instruments based on the SACQ. Further, internality relating to positive outcomes was associated with higher levels of adjustment than internality relating to negative outcomes, the latter being largely irrelevant. Other research has found relationships between LOC and adjustment in the expected direction, with the relationship mediated by non-use of active coping (Aspinwall & Taylor, 1992).

However, contrary to most extant research, Estrada et al. (2006), in a study of students with and without learning disabilities, found that an external locus of control predicted higher levels of personal and emotional adjustment on the SACQ (the only subscales employed). They suggest that, contrary to established thinking on the subject, these results may be due to an external orientation being the more adaptive orientation in an environment and at a life stage when so many new adjustments are required.

Finally with regard to personality, some researchers have been critical of studies predicting university adjustment using assessments such as the Five Factor Model, on the basis that they may be too broad to allow specificity of predictions, and conversely, that focusing on narrow personality traits may overlook other important aspects of personality (Lidy & Kahn, 2006). Instead, the aforementioned researchers proposed that Cattell's (1965) 16 PF personality theory may represent an appropriate compromise. Using this approach in a mediational model of university adjustment, they found that emotional stability, social boldness, abstractedness and apprehension were each correlated with at least  $r = .25$  with at least two of the adjustment

domains. Specifically, students who were more emotionally stable, socially venturesome, practical and less apprehensive were better-adjusted to university. However, for emotional stability, social boldness and abstractedness, relationships with the various indices of adjustment were mediated by social support, rendering some of the relationships between personality and adjustment indirect.<sup>11</sup>

#### 2.2.2.2 *Psychological Health*

As discussed previously, although a number of studies define adjustment in terms of various aspects of psychological health, the latter have also been explored as determinants or correlates of adjustment (i.e., when measures of psychological well-being have been taken pre-transition, or concurrently). These studies are based on the notion that students may have stressors or mental health problems that pre-date the transition to university, or that changes in levels of symptomatology over the first year may affect adjustment.

For example, in a study by Friedlander, Reid, Shupak, and Cribbie (2007) it was found that when first year undergraduates were assessed during the first semester and again 10 weeks later, decreased levels of stress over the time period were associated with better overall, academic, personal-emotional, and social adjustment.

Other research yielded similar results but also suggests that results may differ for males and females. Wintre and Yaffe (2000) studied the effects on adjustment of stress and depression measured in week one of the academic year, and changes in symptomatology over the first six months of university. For both males and females, it was found that both initial stress levels, and changes in stress levels between the start of the academic year and February/March of the academic year predicted overall adjustment as measured by the SACQ. However, whilst initial depressive symptomatology and also change in depressive symptomatology affected females' adjustment, only the latter predicted male students' adjustment.

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<sup>11</sup> Relationships between personality and adjustment were as follows: emotional stability and academic adjustment: indirect; emotional stability and institutional attachment: indirect; emotional stability and social adjustment: direct and indirect; social boldness and institutional attachment: indirect; social boldness and academic adjustment: direct and indirect; social boldness and social adjustment: direct and indirect; abstractedness and social adjustment: indirect; abstractedness and institutional attachment: indirect.

Finally, in one of the few studies where measures were taken pre-transition (facilitating stronger inferences regarding causality) Pancer et al. (2000) found that self-reported stress levels in the summer prior to starting university predicted adjustment to university in February of the first year.

#### 2.2.2.3 *Self-evaluative Constructs*

Turning to self-evaluative constructs, positive views of the self are related to various aspects of well-being and positive functioning in various life domains (e.g., Leitschuh & Rawlins, 1991; Rogers, 1951) and have also been shown to be important predictors of university adjustment. A positive relationship between university adjustment and self-esteem, the latter usually measured using the Rosenberg Self Esteem Scale (RSES; Rosenberg, 1965) or Coopersmith Self-Esteem Inventory (CSEI; Coopersmith, 1981) has been one of the most consistent findings in the literature. For example, in a study of traditional-aged female college students, Mooney et al. (1991) found positive correlations between self-esteem and the full scale score and each subscale score of a precursor to the SACQ, whilst Hickman, Toews and Andrews (2001) found that self-esteem was related to overall college adjustment for both males and females, although some research indicates a role for self-esteem for females only (Wintre & Yaffe, 2000).

Self-esteem also appears to predict adjustment as measured by overall well-being: Pritchard et al. (2007), surveying students at the beginning and end of their first year, found that self-esteem was related to better physical and psychological outcomes as measured by the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971).

Moreover, associations between self-esteem and overall SACQ scores have also been demonstrated in Hispanic first year students (Yazedjian & Toews, 2006), and with social and academic adjustment in an ethnically-diverse sample (Grant-Vallone, Reid, Umali, & Pohlert, 2003-2004). However, Toews and Yazedjian (2007) found that the importance of self-esteem in relation to adjustment differed depending on race and gender: self-esteem was generally the strongest predictor (out of self-esteem, parental education, parental support, and peer support) of overall SACQ scores, although this relationship did not hold for Hispanic males.

Whilst the importance of personal self-esteem is evidenced by the studies outlined above, both personal and collective self-esteem (in relation to residence hall membership) measured using the Collective Self-Esteem Scale (CSES; Luhtanen & Crocker, 1992) have been shown to be associated with the social and academic adjustment subscales of the SACQ (Bettencourt et al., 1999). Moreover, increases in personal self-esteem between the start and end of the academic year were associated with increases in social and academic adjustment, whilst increases in collective self-esteem were associated with academic adjustment only. These results regarding collective self-esteem appear to underscore the importance of identity and belonging for first year students. Also in terms of different types of self-esteem, increases in global, academic, and social self-esteem have been associated with lower levels of depression and better academic and social adjustment (Friedlander et al., 2007).

With regard to how self-esteem may exert its effects on adjustment, there is evidence to suggest that the relationship may be mediated by social support seeking and the use of active coping (Aspinwall & Taylor, 1992).

Another self-evaluative construct is self-efficacy, defined as the belief in one's ability to successfully perform a task or behaviour (Bandura, 1977). Importantly, self-efficacy beliefs are implicated in an individual's decisions regarding initiation of and persistence in tasks (Bandura, 1977, 1986). This construct features prominently in Bean and Eaton's (2000) psychological model of student retention, and also has empirical links with academic performance (Lent, Brown, & Larkin, 1984). With regards to empirical research linking self-efficacy with university adjustment and retention, a sense of self-confidence has been shown to be an important longitudinal predictor of student persistence for students who are not struggling academically (Gerdes & Mallinckrodt, 1994). Conversely, a lack of confidence with respect to coping with personal or academic demands has been found to be a feature of students who withdraw in the first term, or are considered 'at risk' and undergoing counselling (Rickinson & Rutherford, 1995).

With specific regard to university adjustment, a number of studies have found relations between both generalised and domain-specific self-efficacy. Silverthorn and Gekoski (1995) found that generalized self-efficacy as measured by the Hale-Fibel Generalized Expectation for Success Scale (Fibel & Hale, 1978) was related to SACQ scores. Associations have also been found using a different measure of generalised self-efficacy (Self-Efficacy Scale; Sherer et al., 1982), with correlations between self-efficacy scores and the social, academic and personal-emotional adjustment subscales of the SACQ (Saracoglu et al., 1989).

More commonly, variables relating to domain-specific self-efficacy are employed in the study of university adjustment, the most widely studied being academic self-efficacy. This has been shown to significantly predict more successful adjustment to college as measured by the SACQ overall score (Martin, Swartz-Kulstad, & Madson, 1999) and also by questions relating to academic progress and the intention to continue with studies (Chemers, Hu & Garcia, 2001). However, this was an indirect relationship, it being totally mediated by challenge-threat evaluations, such that adjustment was predicted by students' interpretation of the transition as a challenge rather than a threat.

When other aspects of college-specific self-efficacy have been measured (viz., course efficacy, social efficacy and roommate efficacy) results have indicated that high self-efficacy in these domains at the beginning of the academic year predicted higher scores on the academic adjustment subscale of the SACQ (Ramos-Sanchez & Nichols, 2007).

Finally, Jackson et al.'s (2000) research on university adjustment and fearful expectations, outlined previously, also appears to substantiate the importance of positive self-efficacy for adjustment to university.

#### 2.2.2.4 *Coping*

Research on coping has attempted to determine whether certain coping styles and techniques are more adaptive than others in terms of dealing with the stresses of university life, and hence to university adjustment. Studies in this area have explored both dispositional and situational

coping styles. Some interesting results from this research include the findings that negative coping tactics measured in week 1 such as denial and ‘learning to live with it’ were associated with poorer physical health and alcohol use at the end of the first academic year (Pritchard et al., 2007) and similarly that task-oriented coping was negatively and emotion-oriented coping positively correlated with depressive symptomatology (Bouteyre, Maurel, & Bernaud, 2007). Research using the SACQ has also supported the thesis that activity-oriented as opposed to emotion-focused styles of coping are more likely to be related to better university adjustment (Leong, Bonz, & Zachar, 1997; Rice & Lapsley, 2001).

Where research has assessed the relative importance of dispositional and situational coping in relation to university adjustment, results indicated that both have utility in predicting outcomes, and also that coping techniques that centre around cognitive reinterpretation of events and problem solving were associated with fewer psychological problems than those based on emotional expression and support seeking (Sasaki & Yamasaki, 2007).

In sum, certain coping styles seem more likely than others to attenuate problems of adjustment, and may be a useful target for interventions. All of the studies reviewed suggest that a focus on active and problem-focused coping appears more adaptive than more avoidant and passive approaches, and support Tinto’s (1987) position that teaching appropriate coping mechanisms to beginning university students may reduce the risk of dropout.

#### 2.2.2.5 *Motivation*

The role of motivational and goal theories has also proved to be a fruitful area of research in this area. Baker (2004) studied the relationship between motivational orientations (reasons for studying) and university adjustment in second year students. The study compared intrinsic (doing an activity for its own sake), extrinsic (doing an activity for external rewards or to avoid punishment) and amotivational (i.e. the absence of motivation, either intrinsic or extrinsic) orientations. The latter was related to poorer psychosocial adjustment to university (as measured by the CAQ), higher levels of perceived stress and poorer general well-being. Although one type of intrinsic motivation (‘intrinsic motivation to know’, i.e., undertaking

learning for pleasure and satisfaction and the enjoyment of exploration) was linked to lower perceived stress it was not related to CAQ-measured adjustment nor to higher levels of well-being.

Closely related to motivation, goal-directedness has been positively associated with higher levels of academic and personal-emotional adjustment (Robbins, Lese, & Herrick, 1993) and having autonomous college goals before starting college has been associated with higher social and personal-emotional subscales of the SACQ (Conti, 2000).

#### 2.2.2.6 *Cognitive Functioning*

Various aspects of cognitive functioning have also been explored in relation to university adjustment. In terms of academic ability and intellect, American College Testing scores have been shown to be correlated with overall, social and personal emotional adjustment and in a related vein, intellect (as measured by the Goldberg Big-Five Factor Markers [Goldberg, 1992]) positively related to overall adjustment, social adjustment and institutional attachment (Brooks & Dubois, 1995). Similarly, aptitude as measured by the Quick Word Test (Borgatta & Corsini, 1964) has been shown to relate to social adjustment and overall adjustment to university (Hickman, Bartholomae, & McKenry, 2000).

Self-perceived problem-solving abilities have been associated with overall university adaptation as measured by the College Adaptation Questionnaire (Baker, 2003), although Brooks and Dubois (1995) found a relationship with self-appraised problem-solving skills only with the academic subscale of the SACQ. Similarly, social problem-solving abilities have been shown to predict lower levels of transition stress (D’Zurilla & Sheedy, 1991).

Turning to thinking styles, adjustment has been shown to be higher for students who have complex, rather than simple, expectations about university (Pancer et al., 2000). These findings appear to be corroborated to some extent by the findings of Rice, Vergara, and Aldea (2006) who found that maladaptive thinking patterns such as categorical (dichotomous) thinking is associated with lower academic, social, and psychological adjustment. Taken together, the

findings suggested that engaging in more complex and thorough thought processes in relation to the transition and university matters may facilitate adjustment.

Finally, with regard to cognitive functioning regarding emotions, Kerr, Johnson, Gans, and Krumrine (2004) exploring college adjustment and alexithymia (the inability to identify emotions or use words expressively), found that alexithymic individuals were significantly lower in adjustment as measured by the academic and personal-emotional subscales of the SACQ than their non-alexithymic counterparts. Relatedly, Abdullah, Elias, Mahyuddin, & Uli (2009a) found that the overall SACQ score and all its subscales were related to scores on the MSCEIT (Mayer, Salovey, & Caruso, 2002), a measure of emotional intelligence that assesses an individual's cognitive abilities with respect to reasoning about emotional matters.

### 2.2.3 *Interpersonal Variables*

In addition to individual psychological functioning, various aspects of how people relate to and interact with others have also been shown to be related to university adjustment.

#### 2.2.3.1 *Social Support*

The importance of social support for emotional well-being and for attenuating the effects of stress is well-documented (e.g. Sarason, Pierce, & Sarason, 1990; Thoits, 1995). Consistent with this, research strongly supports a relationship between university adjustment and social support. Indeed social support is considered one of the most important protective factors in students' adjustment to a university setting (Solberg & Villarreal, 1997).

Some studies have found relationships between overall social support and adjustment (e.g., Brooks & DuBois, 1995, found a particular role for this variable in predicting social adjustment), whilst other have differentiated among support from specific sources such as peer, family, friends and faculty. Social support from people on campus has been shown to be related to adjustment in a number of studies (e.g., Barthelemy & Fine, 1995, Napoli & Wortman, 1998; Toews & Yazedjian, 2007). Moreover, the importance of support from peers and friends is underscored by findings regarding the importance of friendships. Paul and Brier (2001) found



that friendsickness (concerns regarding the loss of or changes to pre-college friendships) was related to indices of college adjustment (viz., loneliness and 'college friendship self-esteem' and 'social acceptance self-esteem'). In a similar vein, Buote et al. (2007), employing an interview technique, found that the *quality* of friendships made at university were also positively associated with university adjustment. Further, the association between friendship and adjustment was stronger for students living on campus compared to commuters.

In terms of family support, Friedlander et al. (2007) found that perceived social support from family and friends measured during the first semester predicted adjustment to university ten weeks later, whilst in a study of married students, support from family and friends was associated with adjustment, although spousal support was not (Meehan & Negy, 2003).

Other research similarly suggests that social support from some sources may be more important than that from others. For example, whilst Martin et al. (1999) found that parental support (as well as peer and faculty support) predicted adjustment, it was support from friends that was the strongest predictor of overall adjustment. In a similar vein, Grant-Vallone et al.'s (2003-2004) findings indicated that peer support was more important than parental support.

Other findings suggest that moderating factors may need to be considered: some research suggests that support from family is not a main effect predictor of adjustment (Lafrenière & Ledgerwood, 1997) and there is evidence that the importance of parental support may differ as a function of gender and ethnic group: in Toews and Yazedjian's (2007) study, parental support was a predictor of adjustment for white students only and not Hispanics.

The role of social support as a mediator of the relationship between adjustment and the predictors of optimism, self-esteem and locus of control has also been identified (Aspinwall & Taylor, 1992) suggesting that positive relationships between some individual difference characteristics and university adjustment may be due to these characteristics enabling individuals to establish and maintain effective social support.

### 2.2.3.2 *Attachment*

According to attachment theory as conceptualized by Ainsworth, Blehar, Waters and Wall, (1978) and Bowlby (1969) the nature of an infant's relationship with its primary caregiver leads to the development of relatively stable attachment styles and working models of relationships. Specifically, infants whose needs are met by the caregiver tend to develop secure attachment styles, whilst intrusive or neglectful caregiver behaviours are associated with insecure attachment.

Research suggests a clear link between secure attachments and positive psychological and socio-emotional functioning, whilst insecure attachments have been associated with a range of psychological difficulties and negative outcomes (e.g., McCarthy, Moller, & Fouladi, 2001). In terms of college adjustment, leaving home for college has been conceptualised as the adult analogue of the Strange Situation (Kenny, 1987) whereby attachment security allows the parent to be used as a secure base from which the student may negotiate college life. A range of measures for assessing parent-adolescent attachment exist and have been used in this research, the most widely-used being the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) and the Parental Attachment Questionnaire (PAQ; Kenny, 1987).

A number of studies have found relationships between attachment security and college adjustment, the latter usually measured by the SACQ. Research by Rice, Fitzgerald, Whaley, and Gibbs (1995), measuring attachment using the IPPA and adjustment using the SACQ and CIAA, indicates that students reporting a secure attachment style score higher than insecurely attached students on academic, social emotional and curricular adjustment, as well as on goal maturity, study skills, mental health and personal relations.

Lapsley, Rice, and Fitzgerald (1990) in a study of both freshman and upperclassmen found that attachment to parents and peers predicted academic and personal-emotional adjustment for freshman. For upperclassman, parent and peer attachment predicted social adjustment, personal-emotional adjustment and institutional attachment; attachment to parents predicted

academic adjustment. The authors note that the results illustrate that the effects of a secure attachment are not just related to the first year, but also to subsequent college years.

A limitation of the literature on attachment and college adjustment noted by Lapsley and Edgerton (2002) is that the majority of studies focus on parental attachment as opposed to adult attachment. Moreover, they indicate that dating relationships and more general interpersonal relationships are frequently sources of distress for university students and may be a more fruitful target for interventions than parental attachment. As such, they employed the Relationship Questionnaire (Bartholomew & Horowitz, 1991), a measure of adult attachment, in their study, and explored its relationship to personal-emotional and social adjustment. Consistent with most other studies of adaptation, attachment security was positively related to both facets of adjustment measured. Moreover, fearful or preoccupied attachments were negatively correlated with adjustment scores. Dismissing attachment, on the other hand, was not related to adjustment.

Some studies have found that gender may act as a moderating variable in the relationship between student-parent attachment and adjustment. In Rice and Whaley's (1994) study, attachment to both parents was important for women's adjustment, whereas for male students, attachment to the father appeared to predict adjustment only towards the end of the semester, possibly due to it being a more stressful time.

Whilst dyadic attachments have been extensively explored in relation to college adjustment, Marmarosh and Markin (2007) applied group attachment theory to university adjustment. Both dyadic (i.e., personal) and group attachments (based on group and family experiences) strongly influenced adjustment to university, with group attachment explaining variance in overall SACQ scores above and beyond personal attachment in hierarchical multiple regression analyses (although personal dyadic attachment style accounted for the most variance in adjustment). Moreover, group attachment avoidance, but not anxiety, was associated with transition difficulties.

Other research similarly suggests that different types of insecure attachment differentially influence outcomes. For example, in Bernier, Larose, Boivin, and Soucy's (2004) study, preoccupation with attachment was associated with poor college adjustment, though there was no relationship between adjustment and a dismissing style of attachment.

Overall, therefore, there appear to be reliable patterns of relationships between secure attachment and smoother transitions to university. Explorations of the mechanisms by which insecure attachments affect adjustment appear to indicate that they are associated with difficulty with help-seeking during the transition, distrust of others, and loneliness (Larose & Bernier, 2001). Moreover, it has been suggested that anxiously-attached students may struggle with the separation from attachment figures when leaving home for university, may feel unable to cope with the increased independence and self-regulation required of them in their new environment; and also that an avoidant attachment style may be related to a defensiveness that makes persistence in academically challenging tasks less likely (Mikulincer & Shaver, 2007).

Overall, the findings regarding university adjustment and attachment security appear to provide support for the central tenets of attachment theory and in particular the secure base phenomena, with individuals potentially using attachment figures as a secure base from which to engage with their new environment and successfully negotiate the challenges of transition.

#### 2.2.3.3 *Autonomy*

Related to attachment is the development of autonomy in relation to parents, or psychological separation-individuation: the development of a sense of self that is separate from one's parents. Gaining autonomy features in Chickering's (1969) model of student development and is also considered to be a critical developmental task of late adolescence (Hoffman, 1984). It is generally measured using the Psychological Separation Inventory (PSI; Hoffman, 1984) and has been conceptualized as consisting of two dimensions: positive feelings about separation from parents and gaining independence from parents (e.g., Beyers & Goossens, 2003). Moreover, different types of independence, including conflictual independence (the freedom from guilt, anxiety and anger in relation to feelings for parents) and emotional independence (freedom from

an excessive need for closeness and approval from parents have been identified (Hoffman, 1984).

Positive relationships are generally found between university adjustment and psychological separation. For example, numerous studies have found expected-direction effects between independence from parents and SACQ-measured adjustment. For example, Silverthorn and Gekoski (1995) found that PSI-measured independence from parents was related to SACQ scores. Similarly, Haemmerlie, Steen and Benedicto (1994, using the SACQ), and Kenny and Donaldson (1992, using psychological symptoms as a marker of transition success) also found a positive relationship between independence from parents and university adjustment.

Where studies have explored the relative importance of the two components of psychological separation, the positive separation feelings aspect appears to emerge as more important than sense of independence from parents. For example, whilst Beyers and Goossens (2003) found that both independence from parents and positive separation feelings were related to better adjustment to university, positive separation feelings were the better predictor. Similarly, Lapsley and Edgerton (2002), using only the personal-emotional and social adjustment scales of the SACQ, concluded that the best correlational predictor of college adjustment was the presence of positive separation feelings regarding separation rather than sense of independence from parents. A more important role for the positive separation feeling aspect was also demonstrated by Rice, Cole, and Lapsley (1990).

Other studies have explored separation-individuation alongside attachment style, and appear to draw different conclusions with regard to how they may exert their effects. Some research appears to suggest that attachment and separation-individuation additively predict college adjustment (e.g., Holmbeck & Wandrei, 1993). However, in Mattanah, Hancock, and Brand's (2004) exploration of these two variables, secure attachment to parents and healthy separation-individuation predicted academic, social, and personal-emotional adjustment to college, but variables related to separation-individuation mediated the effects of attachment.

#### 2.2.3.4 *Family Functioning*

In addition to issues of attachment and individuation, other aspects of family functioning have been shown to influence university adjustment. The effect of parenting style has been extensively explored in this regard. Baumrind (1967, 1971) proposed three different parenting styles: authoritative (moderately strict and encourage children to become autonomous), authoritarian (impose strict discipline and are unresponsive) and permissive (do not tend to impose strict discipline). It is generally concluded that an authoritative (rather than permissive or authoritarian) parenting style is positively related to college adjustment (e.g., Hickman et al., 2000; Wintre & Yaffe, 2000). Research also suggests mechanisms through which the effects of authoritative parenting may operate. For example, Wintre and Yaffe (2000) concluded that authoritative parenting style had an indirect relationship to adjustment, mediated by supportive current relationships with parents and psychological well-being. There is also evidence that this style may encourage the development of adaptive personality traits that are conducive to success in the college environment. Specifically, Strage and Brandt (1999) related authoritative parenting to a greater degree of intrinsic motivation and an internal locus of control. The findings on parenting therefore suggest that the balance of freedom and structure associated with the authoritative style is conducive to the development of the characteristics and skills necessary for adaptation in the university environment.

Other family-of-origin issues explored relate to conflictual or dysfunctional relationships. Students from maritally-distressed families have reported significantly lower college adjustment as assessed by the College Adjustment Inventory (CAI; Baker & Siryk, 1984) compared to students from low-conflict homes (Lopez, Campbell, & Watkins, 1989). Similarly, the absence of parental marital conflict has been associated with better adjustment defined in terms of psychological functioning (Kenny & Donaldson, 1991). However, it should be noted that contradictory results have been found in this area, with some studies finding no differences in adjustment when comparing students from divorced and intact families (Lopez, Campbell, & Watkins, 1988) or that students who had divorced parents reported higher levels of adjustment (Hickman et al., 2000).

Other aspects of positive family functioning have also been explored and linked to better university adjustment. For example, with regard to relations with parents, perceived reciprocity and engaging in discussion (Wintre & Yaffe, 2000) and attitudinal similarity with parents (Kenny & Donaldson, 1992) have all been related to a smoother transition.

However, it should be noted that, given the correlational nature of many of the studies relating to attachment and family functioning, with measures being taken post-transition, the possibility that adjustment difficulties may precipitate negative re-interpretations of various aspects of family relationships should be considered.

In summarising, the foregoing research suggests that attachment security acts as a protective factor against the stresses and challenges associated with starting university, and that adjustment outcomes differ as a function of insecure attachment type. For traditional-aged students a balance of attachment to and individuation from parents is associated with better adaptation to university. Findings also generally support the conclusion that the quality of family relationships is an important predictor of college adjustment, with conflictual and dysfunctional relationships presenting a risk factor for poorer outcomes.

### **2.3 CONCLUSIONS AND FUTURE DIRECTIONS**

In conclusion, a wide range of personal and interpersonal variables have been explored in relation to university adjustment. The above review, although not exhaustive, discusses some of the major findings in the literature. The variables identified provide an insight into the nature of transitional adjustment to university, and suggest how pre-screening for transition difficulties may be undertaken. Whilst some variables identified as risk or protective factors may be amenable to change, other more stable attributes of individuals will be less so. The findings highlight the importance of positive psychological and interpersonal functioning and the individual's internal and external resources for facilitating a smooth transition.

However much of the research has been undertaken in US settings, with a focus on traditional students making the transition from high school to university. In comparison, there have been

relatively few British studies exploring predictors and correlates of adjustment, nor have the factors relating to non-traditional students received adequate attention. Widening access initiatives in the UK have led to much-changed student body, who access higher education through more diverse pathways and bring with them a greater diversity of personal characteristics than was previously the case. As such, more up-to-date and context-specific research on university adjustment and its predictors needs to be undertaken.

Also, whilst the foregoing review illustrates the diversity of factors that have been explored in relation to university adjustment, one area that still appears to be relatively unexplored is the relationship between transition to higher education and emotional intelligence (EI). Research has highlighted the emotional nature of transitioning to higher education (e.g. Christie et al, 2008) and there is also significant emerging evidence of the relationship between EI and academic success and student persistence (Parker, Hogan, Eastabrook, Oke, & Wood, 2006; Parker, Summerfeldt, Hogan, & Majeski, 2004; Schutte & Malouff, 2002). It has also been found that incoming students who disclose emotions relating to the transition have better wellbeing (measured in terms of subsequent health care utilization) compared to students who do not (Pennebaker, Colder, & Sharp, 1990). Moreover, as cited in this chapter, relations between emotional functioning and SACQ scores have been identified (Abdullah et al., 2009a; Kerr et al., 2004). Further research in this area should explore whether and how separate EI subcomponents differentially influence the various facets of university adjustment, and whether EI appears to be able to offer anything new to the understanding of university adjustment, beyond existing established predictors.

To conclude, transitional adjustment to university has been the focus of a considerable amount of research interest, and much is now known about risk and protective factors during the transition to university. However, a number of issues merit further exploration. Specifically, research that generates more population-specific data and more fully explicates the role of emotional intelligence will contribute to a more complete understanding of the transition process and facilitate the development of more appropriate and theoretically-driven interventions.



## **CHAPTER 3: STUDY 1: PRELIMINARY INVESTIGATION OF ADJUSTMENT TO UNIVERSITY IN A UK POST-1992 INSTITUTION**

### **3.1 INTRODUCTION**

The literature on predictors of adaptation to university life generally yields consistent support for the view that variables representing personal and interpersonal strengths are related to better outcomes (see Chapter 2, Sections 2.2.2 and 2.2.3). Some consistently-identified protective factors are self-evaluative constructs such as self-efficacy (both general and domain-specific) and self-esteem (Bettencourt et al., 1999; Chemers et al., 2001; Grant-Vallone et al., 2003-2004; Mooney et al., 1991; Silverthorn & Gekoski, 1995; Yazedjian & Toews, 2006) and an internal locus of control (LOC; Aspinwall & Taylor, 1992; Martin & Dixon, 1994; Mooney et al., 1991). There is also accumulating evidence that emotional factors (e.g., Kerr et al., 2004; Lidy & Kahn, 2006; Pekrun, Elliot, & Maier, 2006, 2009), including emotional intelligence (Abdullah et al., 2009a; Chapman & Hayslip, 2005, Parker et al., 2006; Parker, Summerfeldt, et al., 2004; Qualter Whiteley, Morley, & Dudiak, 2009; Schutte & Malouff, 2002), affect how well students are able to cope with the academic and other adjustment demands of tertiary-level education. A considerable number of studies also indicate that aspects of positive interpersonal functioning such as attachment security (Kenny & Donaldson, 1991; Lapsley et al., 1990; Lopez, Mitchell, & Gormley, 2002) and high levels of perceived social support (Aspinwall & Taylor, 1992; Barthelemy & Fine, 1995; Napoli & Wortman, 1998; Toews & Yazedjian, 2007) are predictive of better university adjustment.

Findings regarding relationships between demographic variables and adjustment outcomes tend to be more mixed. There is reasonably consistent support for the view that female students may be at risk for poorer psychological adjustment during the transition to university compared to males (e.g., Alfeld-Liro & Sigelman, 1998; Vivona, 2000). There are also indications that married students may be at greater risk for problems relating to institutional attachment (i.e., their feelings about being at university) and social adjustment (Meehan & Negy, 2003). Findings regarding socioeconomic and generational status suggest that being from a lower socioeconomic group, or a first generation student, is associated with poorer educational

outcomes, including adjustment to university (Ostrove & Long, 2007; Pascarella et al., 2004). The effects of residential status, however, are somewhat unclear, with studies generating complex and contradictory results in relation to how living on- or off-campus is associated with various indices of university adjustment. However, a body of research appears to be emerging that suggests that living on-campus is better in terms of students' social adjustment to university (e.g., Brooks & Dubois, 1995; Christie, et al., 2005; Holdsworth, 2006).

Findings such as these are important to educational practitioners and researchers, as poor adjustment outcomes may have implications for student well-being and success, and for the likelihood of them persisting with their studies until graduation (e.g., Baker & Siryk, 1989). In view of the rapidly-changing landscape of higher education, and substantial differences between institutions, up-to-date and context-specific research which expands our knowledge of this area is required.

## **3.2 CURRENT STUDY**

### *3.2.1 Overview*

A major limitation of the research on adjustment to university is that it is predominantly US-based, with very little comparative UK data available. The current research augments the literature base by exploring university adjustment and its predictive factors within the context of a UK post-1992 institution. This will be conducted using the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989). This instrument provides measures of a student's personal, academic and social adjustment as well as their feelings of attachment to the institution. Although in widespread use in the US, the measure has seldom been used in Europe. However, in a Belgian study, Beyers and Goossens (2002) concluded that it demonstrated promise as a tool for research in European university settings. It is not thought that any UK studies have employed the instrument.

Specifically, the current study explores whether a number of psychosocial variables that are associated with higher levels of adjustment in the US transition literature (viz., self-esteem, self-efficacy, attachment style, social support and an internal locus of control) also predict better

outcomes in the current context. Moreover, the research on university adjustment and LOC is extended by employing a multidimensional LOC measure, which explores the utility of differentiating external LOC into 'chance' and 'powerful others' dimensions.

In light of the emerging importance of emotional factors in relation to education and educational transitions, another important aspect of the current research is the exploration of the role of emotional intelligence in relation to university adjustment, after competing variables have been controlled. Aside from a recent Malaysian study, which found that overall MSCEIT scores correlated with all four SACQ dimensions and the full-scale score (Abdullah et al., 2009a), no other studies have explored the relationship between emotional intelligence (EI) and adjustment as measured by the SACQ. Similarly, little is known about the incremental validity of EI in predicting university adjustment, nor about how different EI subcomponents differentially predict the separate facets of adjustment. The question of incremental validity is important in this context due to criticisms that EI is merely a re-packaging of existing well-established psychological constructs (e.g., Davies, Stankov, & Roberts, 1998). Further, the utility of a new predictor is determined in part by its ability to predict variance in criteria over and above competing predictors (see Hunsley & Meyer, 2003). It is thought that only one other study (i.e., Chapman & Hayslip, 2005) has explored the incremental validity of EI in relation to university adjustment, and how EI subcomponents are related to different facets of adjustment. The study employed the Schutte Emotional Intelligence Scale (SEIS; Schutte, et al., 1998) to assess the potential impact of EI on university adjustment (operationalised as ratings of study habits and attitudes, GPA, loneliness, and academic, personal, social, family and overall stress) after controlling for personality and cognitive intelligence. Findings indicated that overall EI predicted unique variance only in loneliness, although when SEIS subscales were employed the optimism/mood regulation and appraisal of emotions subcomponents incrementally predicted variance in study habits and social stress respectively. Moreover, mediational analyses indicated that optimism/mood regulation was related to various criteria, both directly and indirectly.

A review of the literature yielded no studies that have explored the relationship between EI as measured by the SEIS, and SACQ-measured university adjustment. Therefore, the current study investigates relationships between these two measures. Moreover, analyses will be conducted at both the global and subscale levels, to determine whether EI subcomponents differentially predict separate facets of adjustment. Additionally, the incremental validity of the SEIS after controlling for demographic variables and established psychosocial predictors of adjustment will also be assessed. This approach has the potential to strengthen the case for EI being a useful and valuable construct in the prediction of university adjustment. To shed further light on this issue, the extent to which demographic and established psychosocial predictors attenuate the relationship between overall EI and adjustment criteria are also explored.

Another important question that the current study addresses is whether there are differences in adjustment based on student demographics in the current institution, which, due to its strong commitment to widening access initiatives, has a diverse student body. Scores on the different SACQ dimensions provide a means of determining whether there are differences in the type of adjustment problems experienced by the various student subpopulations. Moreover, as very little was found in the literature on the question of how having dependants (i.e., children or elderly parents) is related to university adjustment, this question is also addressed in the present study. The issue warrants attention as the increasing number of mature students is likely to be associated with increased numbers of students with dependants, and there is some evidence that their additional commitments may make their life as a student more difficult (e.g., Green Lister, 2003).

### *3.2.2 Research Questions*

On the basis of the preceding arguments, the present study seeks to address the following research questions:

1. What are adjustment levels in the first year for the current sample of UK students?
2. How are SACQ subscales correlated in the current sample?

3. Are there differences between student subpopulations in terms of levels of adjustment to university?
4. Do the variables shown to predict adjustment in international research continue to do so in the current context?
5. Is there utility in differentiating external LOC into ‘chance’ and ‘powerful others’?
6. Does having dependants affect adjustment to university?
7. What is the relative importance of the predictors and does overall EI or its separate dimensions predict adjustment indices over and above other study variables?
8. Do other study variables mediate the relationship between EI and adjustment?

### 3.2.3 Hypotheses

In view of the consistent findings linking psychosocial variables to indices of university adjustment, and to adaptive functioning in general, it is predicted that EI and established psychosocial predictors will be related to better university adjustment. It is also hypothesised that the relationship between EI and adjustment will be mediated by other psychosocial variables. This rationale stems from empirical and theoretical links between EI and other aspects of adaptive individual and interpersonal functioning. As the question regarding the utility of the two external LOC orientations was exploratory, no predictions are advanced in this regard. Similarly, as few other studies have compared important predictors of adjustment with each other, no hypotheses are advanced with respect to the relative importance of the predictors, nor in relation to the incremental validity potential of EI over and above other study variables.

Further, due to the paucity of studies exploring university adjustment in a diverse institution such as the current setting, which endeavours to accommodate the needs of a broad cross-section of the population, and the fact that no UK study has employed the SACQ, no *a priori* hypotheses are advanced in relation to subpopulation differences in adjustment, levels of adjustment, and relationships among SACQ subscales.

### 3.3 METHOD

#### 3.3.1 Design

The study was a cross-sectional correlational design, with demographic data, psychosocial variables and measures of adaptation taken concurrently. Dependent variables were the SACQ total and subscale scores. Independent variables were the predictors listed below in Section 3.3.3.1.

#### 3.3.2 Participants

Participants were 306 first year full-time undergraduate students at a UK post-1992 university. Data from three part-time students were eliminated from analyses, due to the possibility that their experience of transition may be different from that of full-time students. Participants were recruited from first year lectures and seminars. Students were enrolled on the following undergraduate programs: psychology, business studies, computing, nursing and a foundation degree. As a result of recruiting participants from the female-dominated Schools of Nursing and Psychology, there was a substantial gender bias: 64 (20.9%) males and 242 (79.1%) females. Participants ranged in age from 17 to 50 years, with a mean age of 22.23 years ( $SD = 6.66$ ). Participants aged 21 or over were defined as mature students.<sup>12</sup> Self-reported ethnic origins were as follows: White ( $n = 269$ ; 87.9%), Black/Black British ( $n = 5$ ; 1.6%), Asian/Asian British ( $n = 17$ , 5.6%), Chinese ( $n = 2$ , 0.7%), other ( $n = 12$ , 3.9%) and undisclosed ( $n = 1$ , 0.3%). With regard to generational status, 187 (61.1%) identified themselves as first generation college students. Approximately one-third ( $n = 111$ ; 36.3%) of students had moved away from home to attend university. The majority of students ( $n = 233$ , 76.1%) were single (never married), 29 (9.5%) were married, 23 (7.5%) students were cohabiting, 6 (2.0%) students were separated and 5 (1.6%) students were divorced. No marital status information was given by 10 (3.3%) participants. The overall response rate was 33.6%. Whilst this might be considered slightly lower than desirable according to some benchmarks (e.g., Draugalis, Coons, & Plaza, 2008) and raises the possibility that non-response bias may influence results (Fowler,

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<sup>12</sup> Whilst there exist in the literature a number of definitions of the term 'mature student', UK universities generally classify students as mature or traditional-aged on the basis of whether they are aged 21 or over at the time of their enrolment. This is therefore the criterion adopted in this thesis.

1984), it is comparable to the response rates achieved in some other studies of university adjustment (e.g., Locks, Hurtado, Bowman, & Oseguera, 2008; Wei, Russell, & Zakalik, 2005).

### 3.3.3 *Materials*

The study employed a questionnaire pack containing the following measures:

#### 3.3.3.1 *Predictors*

*Demographic variables.* A demographic form developed for this study was used to collect the following data: gender, age, marital status, term-time residence, parental experience of HE (i.e., 'generational status'), socioeconomic status (using the three-category National Statistics Socio-economic Classification [NS-SEC]), whether the student has dependants, and course of study.

*Emotional intelligence.* Emotional intelligence was assessed using the 33-item Schutte Emotional Intelligence Scale (SEIS; Schutte et al., 1998). Based on Salovey and Mayer's (1990) model of EI, it assesses an individual's self-perceived emotional intelligence. Sample items are 'I am aware of the non-verbal messages I send to others', 'I have control over my emotions', and 'When I feel a change in emotions, I tend to come up with new ideas'. Respondents answer on a scale of 1 ('Strongly disagree') to 5 ('Strongly agree'). Possible scores range from 33 to 165. The scale was originally conceptualized by Schutte et al. (1998) as a unifactorial scale, and this has been supported by Brackett and Mayer (2003). However, subsequent studies have identified (slightly differing) four-factor solutions (Ciarrochi, Chan, & Bajgar, 2001; Ciarrochi, Deane, & Anderson, 2002; Petrides & Furnham, 2000; Saklofske, Austin, & Minski, 2003). Another study identifies a three-factor structure (Austin, Saklofske, Huang, & McKenney, 2004). The current study utilises both the full-scale score and the factor structure proposed by Petrides and Furnham (2000), viz., 'optimism/mood regulation' (i.e., the ability to be positive and control emotions), 'appraisal of emotions' (i.e., the ability to perceive emotions in oneself and others), 'social skills' (i.e., the ability to empathize with and understand others) and 'utilisation of emotions' (i.e., the ability to use emotions in problem-solving or for personal development). The scale was chosen for the present study as it is the leading brief measure of self-report EI, and there is good evidence for its reliability and validity: Schutte et al.

(1998) reported internal consistencies of .87 to .90 and expected-direction correlations with theoretically-related constructs such as alexithymia, optimism and depression. Chan (2006) reported an overall internal reliability (Cronbach's alpha) of .82. Cronbach's alphas in the present study were good for overall EI (.84) and for the optimism/mood regulation (.76) and appraisal (.70) subscales. Those for the social skills (.65) and utilisation (.61) scales were less reliable.<sup>13</sup> A copy of the SEIS is presented in Appendix A.

*Self-esteem.* Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965), a well-validated and widely-used 10-item scale designed to measure positive or negative attitudes toward the self. Sample items are 'At times, I think I am no good at all', 'I feel that I'm a person of worth, at least on an equal plane with others' and 'I am able to do things as well as most other people'. In this study, participants used a 4-point scale ranging from 1 ('Strongly disagree') to 4 ('Strongly agree'), with higher scores indicative of higher self-esteem. Previous research has demonstrated good psychometric integrity of the measure: a coefficient alpha of .85 was found by Derogatis and Melisaratos (1983). Cronbach's coefficient alpha for this sample was .87. A copy of the RSES is presented in Appendix B.

*Self-efficacy.* Self-efficacy was measured using the 10-item Generalised Self-Efficacy Scale (GSES; Schwarzer & Jerusalem, 1995). Sample items are 'I can always manage to solve difficult problems if I try hard enough', 'Thanks to my resourcefulness, I know how to handle unforeseen situations' and 'I can remain calm when facing difficulties because I can rely on my coping abilities'. Participants reply on a scale of 1 ('Not at all true') to 4 ('Exactly true'). Higher scores indicate higher self-efficacy. Previous research has yielded Cronbach's coefficient alphas ranging from .76 to .90 (Schwarzer, 2002). Cronbach's alpha was .82 for the present sample. See Appendix C for a copy of the GSES.

*Attachment.* Attachment was measured using Bartholomew and Horowitz' (1991) four-category model of attachment, based on positive and negative views of the self and others. With a focus on relationships in general, as opposed to adult romantic relationships or relationships with

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<sup>13</sup> In the case of the 'utilisation' scale, this may be due its brevity.



parents or peers, this was considered appropriate as an attachment measure suitable for both traditional and mature students. The model yields four attachment styles: secure, preoccupied, dismissing and fearful. Participants choose which of the following four statements best describes the way they generally are in their close relationships: ‘It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don’t worry about being alone or having others not accept me.’ (secure attachment); ‘I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.’ (fearful attachment); ‘I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don’t value me as much as I value them.’ (preoccupied attachment) and ‘I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.’ (dismissing attachment). Subsequently, participants rate themselves on a Likert scale ranging from 1 (‘Not at all like me’) to 7 (‘Very much like me’) in relation to each of the statements. Only the four continuous ratings, and not the attachment category, are used in this study.<sup>14</sup> The scale has been shown to have good reliability and validity (Bartholomew & Horowitz, 1991). See Appendix D for a copy of the RQ.

*Locus of control.* Locus of control was measured using Levenson’s (1981) multidimensional locus of control scale. This is a 24-item measure which differentiates external locus of control into ‘chance’ and ‘powerful others’, thus producing three scores: ‘internal’, ‘chance’ and ‘powerful others’. Example items are: ‘I feel like what happens in my life is mostly determined by powerful people’, ‘I am usually able to protect my personal interests’ and ‘Whether or not I get to be a leader depends on whether I’m lucky enough to be in the right place at the right time’. Levenson (1974) found Kuder-Richardson reliabilities of .64, .77, and .78 for the ‘internal’, ‘powerful others’ and ‘chance’ scales respectively. In the present study, Cronbach

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<sup>14</sup> Both the ‘categorical’ and ‘continuous’ sections must be administered, even if the categorical data is not required; the forced-choice paragraphs section minimises order effects when participants subsequently complete the rating scales (Bartholomew, n. d.).

alphas were good for the ‘powerful others’ subscale but less good for the ‘internal’ (.58) and ‘chance’ (.69) subscales. Levenson states that only moderately high internal consistency estimates should be expected, since the items relate to a wide variety of situations. See Appendix E for a copy of the scale.

*Social support.* Social support was measured using the Social Provisions Scale (SPS; Cutrona & Russell, 1987). This is a 24-item measure of perceived social support, i.e., the extent to which the individual feels that there are others available to provide them with the support they need to cope with challenges in their life. Example items are: ‘There is no one I can turn to in times of stress’, ‘There is no one who has the same interests and concerns as me’ and ‘I do not have a feeling of closeness with anyone’. It has six four-item subscales based on Weiss’ (1974) six ‘social provisions’: guidance, reliable alliance, reassurance, attachment, social integration and nurturance. Participants respond to items on a 4-point Likert scale ranging from 1 (‘Strongly disagree’) to 4 (‘Strongly agree’). Subscale values are summed to create an overall social support score. Possible full-scale scores range from 24 to 96. Higher values indicate greater perceived social support. Cutrona and Russell report a coefficient alpha of .92 for the overall scale. In the present study, internal reliability for the overall scale was .91. Reliabilities for the subscales were as follows: attachment .79, social integration .74, reassurance of worth .63, reliable alliance .80, guidance .80, and nurturance .65. Therefore with the possible exception of the reassurance of worth and nurturance subscales, all alphas were satisfactory. Only the full-scale score was used in these analyses. A copy of the SPS is presented in Appendix F.

### 3.3.3.2 *Outcomes*

*Adjustment to university.* Adjustment to university was assessed using the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989).<sup>15</sup> This is a 67-item self-report instrument comprising four subscales: academic adjustment (how the student is coping with the academic demands of university), personal-emotional adjustment (how the student is feeling psychologically and physically), social adjustment (how well the student is coping with the

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<sup>15</sup> The SACQ is not included in the appendices of this thesis due to copyright considerations.

interpersonal demands of university, such as fitting in and making friends) and institutional attachment/goal commitment<sup>16</sup> (the quality of the bond between the student and institution/the student's feelings about being at college in general and at their institution in particular). A full-scale score represents overall adjustment. Thus the measure construes adjustment to university as a multifaceted construct. The measure is widely used in US contexts not only in research, but also in higher education institutions to screen for adjustment difficulties and dropout, and to suggest a focus for interventions. Example items are 'Lately I have been giving a lot of thought to transferring to another university' (institutional attachment scale), 'I am experiencing a lot of difficulty coping with the stresses imposed upon me in university' (personal-emotional adjustment scale), 'I am attending classes regularly' (academic adjustment scale) and 'I am very involved with social activities in college' (social adjustment scale). Items are rated on a 9-point Likert scale ranging from 'Does not apply to me' to 'Applies very closely to me'. Scores for the full scale range from 67 to 603. Scores for the academic, social, personal-emotional and institutional attachment subscales range from 24 to 216, 20 to 180, 15 to 135 and 15 to 135 respectively. Higher scores indicate better self-assessed adaptation to university. As the scale was originally developed for use in North American settings, with the permission of the copyright holders some items were adapted to suit the UK and institutional context (e.g., by changing 'college' to 'university', 'professor' to 'lecturer' and 'dormitory' to 'halls of residence'). Reliability and validity for the SACQ are well-established, with evidence of criterion validity presented via associations with academic performance, attrition and involvement in college activities (see Baker & Siryk, 1989, for a review). With regard to internal reliability, Baker and Siryk (1989) report alpha coefficients of .81 to .90 for the academic subscale, .83 to .91 for the social adjustment subscale, .77 to .86 for the personal-emotional adjustment, .85 to .91 for the institutional attachment subscale and .92 to .95 for the full scale. Internal reliabilities for the subscales and full scale score in the current study were good, ranging from .87 (personal-emotional subscale) to .95 (full scale score). There is also evidence of the measure's reliability and validity across educational institutions (Baker & Siryk 1989). Beyer and Goossens (2002) found the measure to be reliable and valid in a European

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<sup>16</sup> Hereafter referred to as the 'institutional attachment' subscale

(Belgian) setting, with good internal consistency. Confirmatory factor analysis undertaken by Beyers and Goossens also supported the hypothesised factor structure.

### 3.3.4 Procedure

The study was approved by the Ethics Committee of the University of Central Lancashire's School of Psychology. Participants were recruited via announcements made in first year lectures and seminars. Questionnaires were distributed at the start of these sessions, after a brief explanation of the nature and aims of the study had been given. It was emphasized that participation was voluntary and that results would be kept confidential. Participation was incentivized by entering respondents into a draw for one of three Amazon vouchers (£100, £50 and £50). Participants signed a consent form to take part in the study and for the researchers to obtain their academic data from the University's computerized student records system (the latter for use in a separate study). Participants completed a paper-based questionnaire pack, which included a demographic questionnaire and measures of psychosocial constructs (i.e., emotional intelligence, locus of control, social support, self-esteem, self-efficacy and attachment) and adaptation to university. Participants completed the questionnaire at the end of the lecture or seminar or took it away to complete and return later. Completed instruments were handed in at the end of the session, or returned later either to a collection box or via Royal Mail.

## 3.4 RESULTS

### 3.4.1 Overview of the Statistical Analyses

All analyses were performed using SPSS version 17. Data were analysed by means of descriptive statistics, t-tests, product moment correlational analyses and hierarchical multiple regressions. Descriptive statistics indicated the levels of adjustment in the current sample. Correlational analyses were performed to test for associations between SACQ subscales, and between university adjustment and the study variables. T-tests were used to explore differences in adjustment between males and females, those with and without dependants, mature and traditional-aged students, first- and second- generation students, those with professional and non-professional backgrounds, those married/cohabiting vs. those not married/cohabiting and

those who had moved away to attend university vs. those who were still living at home. Finally, hierarchical multiple regressions were conducted to explore predictors of adjustment, the incremental validity potential of study variables, and to test for mediators of the relationship between EI and adjustment. An alpha level of .05 was set for hypothesis testing. Marital, socioeconomic, generational and residential statuses were collapsed into dichotomous category variables (viz., married/cohabiting vs. not married/cohabiting, professional vs. non-professional, some vs. no parental higher education experience, moved away from home vs. not moved).

### 3.4.2 *Data Screening*

Missing data on psychosocial measures were replaced using person mean (or subscale mean, where available) substitution, whereby the intra-individual mean of the other items on that scale or subscale are substituted for the missing item. This is the technique recommended in the SACQ user manual for replacement of missing SACQ data, and yields good representations of the original data when missing data are 20% or less (Downey & King, 1998). Scatterplots, histograms, normal P-P plots and correlation coefficients were inspected to check the assumptions of normality, linearity, homoscedasticity and multicollinearity. There was some evidence of skewness on a number of variables (age, preoccupied attachment, overall EI, social support and institutional attachment). However, in most cases this was not substantial. Since skewness is not considered to present a significant problem in large samples (Tabachnick & Fidell, 2007) it was concluded that the data were suitable for parametric analyses. Outliers were dealt with according to the procedures outlined in Tabachnick and Fidell (2007). Screening for univariate outliers identified 16 data points across 10 variables with z-scores > 3.29. The impact of these was reduced by amending scores to one above or below the most extreme non-outlying score. Multivariate outliers were detected using regression analysis to compute Mahalanobis distance ( $p < .001$ ). One case was identified as a multivariate outlier and was deleted, leaving a final usable sample of 305.

### 3.4.3 *Preliminary Analyses*

Descriptive statistics (means and standard deviations) and inter-measure correlations for all study variables were calculated and are presented in Table 3.1, overleaf.

Table 3.1: Means (M), Standard Deviations(SD) and Inter-measure Correlations for the SACQ and the Predictor Variables (N=305)

		M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1	SACQ Total	422.83	69.68	–												
2	SACQ-A	151.42	26.98	.87***	–											
3	SACQ-S	122.64	24.36	.81***	.52***	–										
4	SACQ-P	88.86	21.90	.83***	.62***	.54***	–									
5	SACQ-I	106.49	18.57	.86***	.65***	.85***	.57***	–								
6	Age	22.19	6.63	.17**	.20***	-.03	.24***	.07	–							
7	Gender	.21	.41	.01	-.09	.10	.08	-.01	-.06	–						
8	Marital Status	.18	.38	.09	.19**	-.07	.09	.01	.44***	-.18**	–					
9	Dependants	.19	.40	.07	.15*	-.10	.12*	-.01	.58***	-.09	.51***	–				
10	SES	.30	.46	.07	.10	.05	.05	-.01	-.07	-.02	-.01	-.01	–			
11	Residence	.39	.49	.00	-.07	.16**	-.06	.03	-.36***	.20***	-.34***	-.34***	.05	–		
12	Parents HE	.39	.49	.01	.03	.01	-.01	-.03	-.21***	.00	-.11	-.13*	.33***	.18**	–	
13	Attach-S	4.52	1.89	.32***	.26***	.32***	.24***	.28***	-.12	-.07	.08	.00	.09	.00	.10	–
14	Attach-F	3.63	1.96	-.31***	-.20***	-.28***	-.34***	-.25***	-.13*	-.03	-.25***	-.09	-.03	.06	.02	-.51***

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
15	Attach-P	3.00	1.76	-.20 ***	-.16 **	-.10	-.25 ***	-.16 **	-.02	.04	-.03	-.10	.03	-.04	.04	-.09
16	Attach-D	3.40	1.81	.04	.06	-.08	.10	-.01	.16 **	-.01	.07	.15 *	-.04	-.06	-.12 *	-.24 ***
17	LOC-I	31.48	6.16	.26 ***	.26 ***	.21 ***	.18 **	.18 **	.09	-.03	.06	.10	.06	-.06	.07	.23 ***
18	LOC-P	19.19	7.74	-.30 ***	-.27 ***	-.16 **	-.34 ***	-.21 ***	-.14 *	-.03	-.06	-.07	-.04	.01	.10	-.12 *
19	LOC-C	22.21	7.55	-.32 ***	-.28 ***	-.17 **	-.39 ***	-.20 ***	-.16 **	-.13 *	-.08	-.05	-.08	.03	.01	-.16 **
20	Self-esteem	18.60	4.70	.48 ***	.37 ***	.39 ***	.47 ***	.36 ***	.06	.08	.05	.00	.05	.06	.13 *	.38 ***
21	Self-efficacy	29.71	3.66	.38 ***	.35 ***	.29 ***	.34 ***	.28 ***	.11	.13 *	.01	.04	-.01	.08	.10	.22 ***
22	Support	81.08	9.10	.48 ***	.39 ***	.44 ***	.38 ***	.45 ***	.07	-.17 **	.09	.09	.17 **	-.03	.14 *	.46 ***
23	SEIS Total	120.90	10.85	.39 ***	.39 ***	.34 ***	.24 ***	.33 ***	.15 *	-.03	.06	.07	.07	.00	.12 *	.32 ***
24	SEIS-O	32.52	4.47	.43 ***	.36 ***	.35 ***	.37 ***	.33 ***	.12	.06	.05	.00	.07	-.02	.08	.28 ***
25	SEIS-A	32.74	3.96	.28 ***	.29 ***	.24 ***	.16 **	.24 ***	.06	-.04	-.01	.08	.03	.07	.09	.15 *
26	SEIS-S	41.05	4.36	.25 ***	.28 ***	.25 ***	.08	.24 ***	.16 **	-.14 *	.09	.09	.03	-.06	.10	.33 ***
27	SEIS-U	14.55	2.00	.11	.15 **	.09	.01	.08	.09	.07	.06	.03	.10	.06	.10	.06



		14	15	16	17	18	19	20	21	22	23	24	25	26	27
14	Attach-F	–													
15	Attach-P	.15**	–												
16	Attach-D	-.08	-.22***	–											
17	LOC-I	-.16**	-.09	.09	–										
18	LOC-P	.14*	.28***	-.04	.11	–									
19	LOC-C	.18**	.20***	-.01	-.07	.56***	–								
20	Self-esteem	-.38***	-.25***	.06	.25***	-.36***	-.32***	–							
21	Self-efficacy	-.23***	-.20***	.14*	.35***	-.19***	-.19***	.51***	–						
22	Support	-.32***	-.10	-.13*	.35***	-.12*	-.22***	.49***	.31***	–					
23	SEIS Total	-.23***	-.03	.00	.39***	-.09	-.08	.44***	.56***	.46***	–				
24	SEIS-O	-.27***	-.17**	.10	.40***	-.22***	-.17**	.56***	.54***	.39***	.77***	–			
25	SEIS-A	-.10	.02	.07	.22***	-.05	-.03	.21***	.37***	.23***	.74***	.36***	–		
26	SEIS-S	-.19***	.09	-.17**	.26***	.03	-.02	.26***	.36***	.48***	.80***	.44***	.47***	–	
27	SEIS-U	-.02	.02	.08	.23***	.04	.07	.19**	.30***	.19***	.54***	.31***	.27***	.35***	–

Note. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . SACQ Total = Overall adjustment; SACQ-A = Academic adjustment; SACQ-S = Social adjustment; SACQ-P = Personal-emotional adjustment; SACQ-I = Institutional attachment; Gender was coded 0 = female, 1 = male; marital status was coded 0 = not married nor cohabiting, 1 = married or cohabiting; dependants was coded 0 = has no dependants, 1 = has dependants; SES was coded 0 = non-professional occupation, 1 = professional occupational; residence was coded 0 = student lives in own or parents' house, 1 = lives in student halls or house; parents' HE was coded 0 = neither parent has HE qualifications, 1 = one or both parents have HE qualifications; Attach-S = secure attachment; Attach-F = fearful attachment; Attach-P = pre-occupied attachment; Attach-D = dismissing attachment; LOC-I = internal locus of control; LOC-P = 'powerful others' locus of control; LOC-C = 'chance' locus of control; Support = Social Support; SEIS Total = overall emotional intelligence; SEIS-O = Emotional intelligence: optimism and mood regulation; SEIS-A = Emotional intelligence: Appraisal of emotions; SEIS-S = Emotional intelligence: social skills; SEIS-U = Emotional intelligence: Utilisation of Emotions. Higher scores on psychological variables are indicative of higher levels of the construct.

### 3.4.4 Adjustment Levels

The first research question was addressed by calculating mean item scores for items relating to the SACQ full scale score and each of the subscale scores. Means were also calculated for the full-scale and subscales scores and compared with those for the normative sample.

Table 3.2 presents mean item scores for each type of adjustment. Scores were highest on institutional attachment ( $M = 7.10$ ) and lowest on personal-emotional and adjustment ( $M = 5.92$ ).

*Table 3.2: Mean Item Scores for each Adjustment Type*

<b>Adjustment type</b>	<b>Mean (SD)</b>
SACQ Total	6.31 (2.41)
SACQ-A	6.31 (2.21)
SACQ-S	6.13 (2.48)
SACQ-P	5.92 (2.62)
SACQ-I	7.10 (2.16)

*Note.* SACQ-Total = Overall adjustment, SACQ-A = Academic adjustment, SACQ-P = Personal-emotional adjustment, SACQ-S = Social adjustment, SACQ-I = Institutional attachment.

Table 3.3 shows mean and standard deviations for each adjustment type, compared to those for the normative sample of students (combining data from four separate student cohorts measured in both semesters) from Clarke University, Worcester, Massachusetts (Baker & Siryk, 1989). The above results demonstrate that the means for the present study are broadly comparable to those of the normative sample.

Table 3.3: Comparison of Means (*M*) and Standard Deviations (*SD*) between Present Sample and Normative Sample

<b>Adjustment Type</b>	<b>Present sample M (SD)</b>	<b>Normative sample M (SDs)</b>
SACQ Total	422.83 (69.68)	404.70 (64.30) - 441.80 (70.50)
SACQ-A	151.42 (26.98)	137.80 (24.50) - 153.10 (27.30)
SACQ-S	122.64 (24.36)	121.30 (26.00) - 133.80 (26.50)
SACQ-P	88.86 (21.90)	84.90 (20.20) - 96.00 (18.00)
SACQ-I	106.49 (18.57)	98.50 (21.20) - 108.80 (20.20)

*Note.* SACQ-Total = Overall adjustment, SACQ-A = Academic adjustment, SACQ-S = Social Adjustment, SACQ-P = Personal-emotional adjustment, SACQ-I = Institutional attachment.

#### 3.4.5 Intercorrelations among SACQ subscales

Pearson product-moment correlation coefficients were inspected in order to examine intercorrelations among the five SACQ scores. It should be noted that the 15-item institutional attachment subscale shares eight items with the social adjustment subscale, and one item with the academic adjustment subscale; correlations between the institutional attachment subscale and these two scales are thus inflated.

The overall adjustment score was very highly correlated with each of the subscales (academic adjustment:  $r = .87$ ,  $p < .001$ ; social adjustment:  $r = .81$ ,  $p < .001$ ; personal-emotional adjustment:  $r = .83$ ,  $p < .001$ ; institutional attachment:  $r = .86$ , and  $p < .001$ ). There was also a very strong correlation between institutional attachment and social adjustment ( $r = .85$ ,  $p < .001$ ), as expected due to overlapping items, and strong correlations between personal-emotional and academic adjustment ( $r = .62$ ,  $p < .001$ ) and institutional attachment and academic adjustment ( $r = .65$ ,  $p < .001$ ). There were slightly smaller relationships between social and academic adjustment ( $p = .52$ ,  $p < .001$ ), social and personal-emotional adjustment ( $p = .54$ ,  $p < .001$ ) and personal-emotional adjustment and institutional attachment ( $r = .57$ ,  $p < .001$ ). See Table 3.1 for correlation results.

### 3.4.6 *Subpopulation Adjustment Differences*

Two-tailed independent samples t-tests were conducted to determine whether there were differences in adjustment between student subpopulations. Comparisons were made between the five SACQ scores and dichotomous demographic variables (i.e., mature vs. traditional age, male vs. female, moved away vs. not moved away, professional vs. non-professional occupation, dependants vs. no dependants, married/cohabiting vs. not married/cohabiting, first generation vs. second generation status). This entailed a large number of tests, with associated inflation of the risk of Type 1 error. However, there is no universally-accepted method for adjusting for multiple comparisons (see Curran-Everett, 2000) and full Bonferroni correction is deemed inappropriate (i.e., too conservative) when DVs are intercorrelated (see Sankoh, Huque, & Dubey, 1997). Moreover, such adjustments increase the likelihood of Type 2 error and thus the risk of missing important findings. In view of such considerations, and the fact that the present analyses were viewed as exploratory, the decision was made not to adjust for multiple comparisons, as advocated by Rothman (1990) in such circumstances. Nonetheless, inferences drawn from these analyses should be treated with a degree of caution.

Mature students scored significantly higher ( $M = 159.26$ ,  $SD = 25.38$ ) than traditional-aged students ( $M = 147.75$ ,  $SD = 26.91$ ),  $t(277) = 3.47$ ,  $p < .01$  on academic adjustment. They also scored significantly higher ( $M = 436.76$ ,  $SD = 63.30$ ) than traditional-aged students ( $M = 415.99$ ,  $SD = 71.57$ ) on overall adjustment,  $t(277) = 2.40$ ,  $p < .05$  and higher ( $M = 94.72$ ,  $SD = 20.12$ ) on personal-emotional adjustment ( $M = 85.66$ ,  $SD = 22.17$ ),  $t(277) = 3.36$ ,  $p < .01$ ). Students who were married or cohabiting had higher levels of academic adjustment ( $M = 162.52$ ,  $SD = 24.62$ ) than their non-partnered counterparts ( $M = 149.30$ ,  $SD = 27.05$ ),  $t(293) = 3.25$ ,  $p < .01$ , and students who had moved away from home to attend university had higher ( $M = 127.43$ ,  $SD = 26.86$ ) levels of social adjustment than those who had not moved away ( $M = 119.71$ ,  $SD = 21.76$ );  $t(200) = 2.54$ ,  $p < .05$ ). Those with dependants had higher ( $M = 94.37$ ,  $SD = 21.38$ ) personal-emotional adjustment than those without ( $M = 87.50$ ,  $SD = 21.92$ ),  $t(301) = 2.17$ ,  $p < .05$  and also higher academic adjustment ( $M = 159.54$ ,  $SD = 26.86$ ) than those without ( $M = 149.68$ ,  $SD = 26.69$ );  $t(301) = 2.54$ . There were no statistically significant group

differences in adjustment based on gender, socioeconomic status (professional vs. non-professional) nor generational status (some vs. no parental experience of higher education).

### 3.4.7 *Correlations between Student Characteristics and Adjustment*<sup>17</sup>

#### 3.4.7.1 *Overall Adjustment*

Examination of bivariate associations between overall SACQ scores and student demographics/psychosocial variables revealed moderate positive correlations with EI optimism/mood regulation, self-esteem and social support ( $r_s = .43$  to  $.48$ ,  $p < .001$ ). There were smaller positive correlations with EI social skills, EI appraisal, secure attachment, self-efficacy and overall EI ( $r_s = .25$  to  $.39$ ,  $p < .001$ ) and negative correlations with preoccupied attachment, 'powerful others' LOC, fearful attachment and 'chance' LOC ( $r_s = -.20$  to  $-.32$ ,  $p < .001$ ). There were very weak positive relationships with EI understanding emotions and age ( $r_s = .11$  to  $.17$ ,  $p < .001$ ).

#### 3.4.7.2 *Academic Adjustment*

There were weak to moderate positive associations between academic adjustment and age, secure attachment, internal locus of control, EI social skills, EI appraisal, self-efficacy, EI optimism/mood regulation, self-esteem, self-efficacy, social support ( $r_s = .20$  to  $.39$ ,  $p < .001$ ) and weak negative associations with fearful attachment, 'powerful others' LOC, 'chance' LOC ( $r_s = -.20$  to  $-.28$ ,  $p < .001$ ). Very weak positive relationships were found with EI understanding emotions, marital status ( $r = .15$ ,  $r = .19$ ,  $p < .01$ ) and dependants status ( $r = .15$ ,  $p < .05$ ). A very weak negative relationship was found between academic adjustment and preoccupied attachment ( $r = -.16$ ,  $p < .01$ ).

#### 3.4.7.3 *Social Adjustment*

There was a moderate correlation between social adjustment and social support ( $r = .44$ ,  $p < .001$ ) and smaller correlations with internal locus of control, EI appraisal of emotions, EI social

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<sup>17</sup> Note that, for completeness, all significant correlations are reported in the results sections of this thesis. However, it should be borne in mind that, in evaluating the importance of such results, it is also useful to consider them in the light of cutpoints such as those advanced by Cohen (1988). According to Cohen's effect size construct, correlations of less than 0.1 are unlikely to represent a noteworthy effect, and those between 0.1 and 0.3 represent only a small effect. Correlations between 0.3 and 0.5, and  $> 0.5$  are considerable moderate and large effect sizes respectively.

skills, self-efficacy, secure attachment, overall emotional intelligence, emotional intelligence optimism/mood regulation and self-esteem ( $r_s = .21$  to  $.39$ ,  $p < .001$ ). There was a weak negative correlation with fearful attachment ( $r = -.28$ ,  $p < .001$ ). Very weak positive correlations were found with residential status ( $r = .16$ ,  $p < .01$ ) and very weak negative correlations were found with both external LOC orientations ( $r_s = -.16, .17$ ,  $p < .01$ ).

#### 3.4.7.4 *Personal-emotional Adjustment*

There was a moderate positive correlation with self-esteem ( $r = .47$ ,  $p < .001$ ) and smaller positive correlations with age, overall EI, secure attachment, self-efficacy, EI optimism mood regulation, social support ( $r_s = .24$  to  $.38$ ,  $p < .001$ ) and negative correlations with preoccupied attachment, fearful attachment, and both types of external LOC ( $r_s = -.25$  to  $-.39$ ,  $p < .001$ ). There were very weak positive correlations with EI appraisal of emotions and internal LOC ( $r = .16$ ,  $r = .18$ ,  $p < .01$ ) and with dependants status ( $r = .12$ ,  $p < .05$ ).

#### 3.4.7.5 *Institutional Attachment*

There was a moderate positive correlation between institutional attachment and social support ( $r = .45$ ,  $p < .001$ ) and smaller correlations with EI appraisal, EI social skills, secure attachment, self-efficacy, EI optimism, overall EI and self-esteem ( $r_s = .24$  to  $.36$ ,  $p < .001$ ). There was a weak positive correlation between institutional attachment and internal LOC ( $r = .18$ ,  $p < .01$ ) and weak negative correlations with preoccupied attachment ( $r = -.16$ ,  $p < .01$ ), both external LOC orientations and fearful attachment ( $r_s = -.20$  to  $.25$ ).

See Table 3.1 for correlation matrix.

#### 3.4.8 *Relative Importance of Predictors and Incremental Validity Potential of EI*

As hierarchical multiple regression is the approach typically employed to establish incremental importance (Tabachnick & Fidell, 2007) this method was used to examine the independent contributions to adjustment of various demographic and psychosocial variables. A series of ten hierarchical multiple regression analyses were conducted. The five SACQ scores were the criterion variables (academic adjustment, social adjustment, personal-emotional adjustment, institutional attachment and the full-scale score). Predictors were background demographic

variables (marital status, residential status, gender, parents' HE, SES, dependants and age), attachment style (secure, dismissing, preoccupied and fearful), self-esteem, locus of control ('internal', 'powerful others' and 'chance'), social support and EI. For each criterion variable the regression was run twice, first employing the EI full scale score, and second the EI subscale scores (optimism/mood regulation, appraisal of emotions, social skills, and utilisation of emotions). This was in order to test whether the individual EI subcomponents were differentially related to the separate facets of university adjustment. Missing data were handled using the listwise deletion method in all regression analyses.

For these analyses, independent variables were added to the regression model in the following five steps: 1) background demographic variables; 2) attachment style; 3) self-esteem, self-efficacy, locus of control; 4) social support; and 5) EI. Variables were entered in Steps 1 to 4 in line with the principle that variables should be entered on the basis of causal priority and that demographic variables are good candidates for initial step entry (Cohen & Cohen, 1983). EI was added at the final step as the study is primarily concerned with determining the unique relationship between EI and university adjustment after controlling for demographic variables and other predictors of adjustment. If the change in  $R^2$  at this final step is significant, it can be concluded that emotional intelligence is a unique predictor of adjustment (Cohen & Cohen, 1983). Descriptive statistics and intercorrelations between study variables are summarized in Table 3.1.

#### *3.4.8.1 Overall Adjustment*

Overall adjustment was correlated with two demographic variables (marital status and age), three attachment styles (secure, fearful and preoccupied), all three LOC orientations (internal, chance and powerful others), self-esteem, self-efficacy, social support, the EI full scale score and three of its subscales (optimism/mood regulation, appraisal and social skills).

The model was significant overall ( $F(18, 223) = 7.82, p < .001$ ) and accounted for 38.7% of the variance in adjustment. All of the blocks apart from the first (demographics) contributed a significant amount of variance to the model. In the final model, adjustment was predicted only

by social support, with higher levels of social support predicting higher levels of overall adjustment ( $\beta = .22, p < .01$ ).

When the regression was re-run with EI subscale scores entered at Step 5, this also contributed significant additional variance. The model as a whole accounted for 40.3% of the variance in overall adjustment ( $F(21,220) = 7.08, p < .001$ ). Higher levels of social support ( $\beta = .25, p < .001$ ) and EI appraisal of emotions ( $\beta = .17, p < .01$ ) significantly predicted higher overall adjustment.

#### 3.4.8.2 *Academic Adjustment*

Academic adjustment was correlated with three demographic variables (dependants, age and marital status), three attachment types (secure, fearful, preoccupied), all three LOC orientations (internal, powerful others and chance), self-esteem, self-efficacy, social support, the EI full-scale and all subscale scores

The model was significant overall ( $F(18, 223) = 5.04, p < .001$ ) and accounted for 28.9% of the variance in academic adjustment. As with overall adjustment, steps 2 to 5 contributed additional significant variance to the model, although the amounts of variance explained at each step were generally lower for this SACQ score than the other four. In the final model higher levels of overall EI was the only significant predictor of adjustment ( $\beta = .19, p < .05$ ) although social support approached significance ( $\beta = .152, p = .051$ ).

Adding EI subscales at Step 5 added significant variance to the model. The total variance explained by the model was 29.5 % ( $F(21, 220) = 4.39, p < .001$ ). As with overall adjustment, greater levels of social support ( $\beta = .16, p < .05$  and higher levels of EI appraisal of emotions ( $\beta = .15, p < .05$ ) significantly predicted academic adjustment.

#### 3.4.8.3 *Social Adjustment*

Social adjustment was correlated with gender, residential status, two attachment types (secure and fearful), all three LOC orientations (internal, powerful others and chance), self-esteem, self-



efficacy, social support, overall EI and three EI subcomponents (optimism/mood regulation, appraisal and social skills).

The total model explained 36% of the variance in social adjustment ( $F(18, 223) = 6.97, p < .001$ ). As before, Steps 2 to 5 contributed significant variance to the model. In the final model only higher levels of social support ( $\beta = .25, p < .001$ ), living in students halls or a student house ( $\beta = .15, p < .05$ ), higher levels of EI ( $\beta = .18, p < .05$ ) and lower levels of fearful attachment ( $\beta = -.15, p < .05$ ) predicted adjustment.

Adding EI components separately at Step 5 added a significant amount of variance. The model as a whole explained 37.1% of the variance in adjustment  $F(21, 220) = 6.17, p < .001$ . Place of residence ( $\beta = .14, p < .05$ ), social support ( $\beta = .27, p < .001$ ) and EI appraisal of emotions ( $\beta = .16, p < .05$ ) predicted social adjustment at this step.

#### 3.4.8.4 *Personal-emotional Adjustment*

Personal-emotional adjustment was correlated with three demographic variables (dependants, age and marital status), three attachment types (secure, fearful and preoccupied), all three LOC orientations (internal, powerful others and chance), self-esteem, self-efficacy, social support, overall EI and the optimism/mood regulation and appraisal of emotions subcomponents.

The regression model was significant and explained 37.7% of the variance in personal-emotional adjustment ( $F(18, 223) = 7.49, p < .001$ ). For this aspect of adjustment, the first four steps all contributed significant variance to the model, although adding EI at Step 5 did not. In the final model, higher levels of fearful attachment ( $\beta = -.16, p < .05$ ), 'chance' locus of control ( $\beta = -.18, p < .01$ ), self-esteem ( $\beta = .22, p < .01$ ) and social support ( $\beta = .16, p < .05$ ) were significant predictors of adjustment.

Finally, EI subscale scores contributed a significant increment in variance when controlling for variables entered in Steps 1 to 4. The model as a whole explained 41% of the variance in personal-emotional adjustment ( $F(21, 220) = 7.28, p < .001$ ). At this step, personal-emotional adjustment was positively predicted by age ( $\beta = .17, p < .05$ ), self-esteem ( $\beta = .16, p < .05$ ),

social support ( $\beta = .21, p < .001$ ) and EI optimism/mood regulation ( $\beta = .16, p < .05$ ); and negatively by higher levels of fearful attachment ( $\beta = -.14, p < .05$ ), a 'chance' LOC orientation ( $\beta = -.18, p < .01$ ) and EI social skills ( $\beta = -.20, p < .05$ ).

#### 3.4.8.5 *Institutional Attachment*

Institutional attachment was correlated with three attachment types (secure, fearful and preoccupied), all three LOC orientations (internal, powerful others and chance), self-esteem, self-efficacy, social support, and both full scale EI score and the following EI subscales: optimism and mood regulation, appraisal of emotions and social skills.

The total variance explained by the model as a whole was 29% ( $F(18, 223) = 5.07, p < .001$ ). As with the first three adjustment scores, only Steps 2 to 5 contributed significant variance to the model. In the final model, institutional attachment was predicted only by higher levels of social support ( $\beta = .26, p < .001$ ) and overall EI ( $\beta = .19, p < .05$ ).

Adding EI subscale scores at Step 5 did not explain significant additional unique variance. The model as a whole accounted for 30.1% of the adjustment in institutional attachment ( $F(21, 220) = 4.50, p < .001$ ). At this step social support ( $\beta = .28, p < .001$ ) and EI appraisal of emotions ( $\beta = .16, p < .05$ ) contributed significantly and positively to adjustment.

Table 3.4 shows beta coefficients, squared semi-partial correlations (unique contributions of variance to criteria),  $R^2$  and  $R^2$  increments for hierarchical multiple regression analyses of the SACQ. Full regression results are not included in this thesis but are available from the author.

Table 3.4: Hierarchical Multiple Regression Analysis of SACQ Scores: Beta Coefficients and Squared Semi-partial Correlation Coefficients of Statistically Significant Predictors (N=242)

Variables	SACQ Total	SACQ-A	SACQ-S	SACQ-P	SACQ-I
<i>Step 1</i> $\beta(\text{sr}^2)$					
Age		.18(.018)*		.21(.025)*	
Residence			.16(.021)*		
R <sup>2</sup>	.036	.053	.053	.065*	.014
<i>Step 2</i> $\beta(\text{sr}^2)$					
Age	.20(.021)*	.23(.028)**		.23(.029)**	
Residence			.16(.021)*		
Attach-S	.29(.049)***	.31(.055)***	.24(.033)**		.26(.041)**
Attach-F			-.21(.027)**	-.23(.031)**	
Attach-P	-.15(.020)*			-.22(.044)***	-.13(.016)*
$\Delta R^2$	.183***	.101***	.167***	.176***	.146***
<i>Step 3</i> $\beta(\text{sr}^2)$					
Age				.15(.011)*	
Residence			.16(.020)*		
Attach-S	.16(.014)*	.20(.020)*			.17(.016)*
Attach-F			-.16(.015)*	-.17(.016)*	
LOC-C				-.20(.025)**	
Self-esteem	.26(.041)***	.17(.016)*	.25(.036)***	.28(.045)***	.23(.030)**
Self-efficacy		.16(.019)*			
$\Delta R^2$	.116***	.094***	.074***	.120***	.059**
<i>Step 4</i> $\beta(\text{sr}^2)$					
Residence			.15(.018)*		
Attach-S		.16(.013)*			
Attach-F			-.15(.013)*	-.16(.014)*	
LOC-C				-.18(.021)**	
Self-esteem	.17(.016)*		.15(.011)*	.22(.025)**	
Self-efficacy		.16(.017)*			
Support	.26(.039)***	.20(.022)*	.29(.049)***	.17(.015)*	.30(.053)***
$\Delta R^2$	.039***	.022*	.049***	.015*	.053***

Variables	SACQ Total	SACQ-A	SACQ-S	SACQ-P	SACQ-I
<b>EI Total</b>					
<i>Step 5</i> $\beta(\text{sr}^2)$					
Residence			.15(.018) *		
Attach-F			-.15(.013) *	-.16(.014) *	
LOC-C				-.18(.021) **	
Self-esteem	.15(.012) *			.22(.025) **	
Support	.22(.027) **		.25(.034) ***	.16(.014) *	.26(.036) ***
SEIS Total	.16(.014) *	.19(.019) *	.18(.017) *		.19(.019) *
$\Delta R^2$	.014 *	.019 *	.017 *	.000	.019 *
Overall F	7.82 ***	5.04 ***	6.97 ***	7.49 ***	5.07 ***
<b>EI Subscales</b>					
<i>Step 5</i> $\beta(\text{sr}^2)$					
Age				.17(.014) *	
Residence			.14(.016) *		
Attach-F				-.14(.012) *	
LOC-C				-.18(.021) **	
Self-esteem				.16(.013) *	
Support	.25(.032) ***	.16(.013) *	.27(.037) ***	.21(.023) **	.28(.039) ***
SEIS-O				.16(.012) *	
SEIS-A	.17(.020) **	.15(.015) *	.16(.017) *		.16(.018) *
SEIS-S				-.20(.018) *	
$\Delta R^2$	.030 *	.025	.027	.033 *	.030
Overall F	7.08 ***	4.39 ***	6.17 ***	7.28 ***	4.50 ***

*Note.* \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . SACQ Total = Overall adjustment, SACQ-A = Academic adjustment, SACQ-S = Social adjustment, SACQ-P = Personal-emotional adjustment, SACQ-I = Institutional attachment. Residence was coded 0 = Student lives in own or parents' house, 1 = Student lives in student halls or house. Attach-S = Secure attachment. Attach-F = Fearful attachment. Attach-P = Pre-occupied attachment. LOC-C = 'Chance' locus of control. Support = Social support. SEIS Total = Overall emotional intelligence. SEIS-O = Emotional intelligence: optimism and mood regulation. SEIS-A = Emotional intelligence: appraisal of emotions. SEIS-S = Emotional intelligence: social skills. Higher scores on psychological variables are indicative of higher levels of the construct.

### 3.4.9 Attenuation of the Relationship between EI and Adjustment

A second series of hierarchical multiple regression analyses were undertaken to explore the mediational role of other predictor variables in the relationship between EI and adjustment. This involved measuring the amount of EI-related variance in adjustment before and after controlling for another variable or variables. Using this technique, where substantial attenuation of the proportion of EI-related variance occurs, this would suggest an important mediational role for the variable(s) in the relationship between EI and adjustment. Adjustment scores were the

criterion and overall EI the predictor variable. Separate statistical controls for other study variables were introduced in five stages as indicated in Table 3.5.

Table 3.5: University Adjustment: Change in  $R^2$  for EI after Separate Statistical Controls for other Variables (N=242)

	Criteria									
	SACQ Total		SACQ-A		SACQ-S		SACQ-P		SACQ-I	
Control	$R^2$	F	$R^2$	F	$R^2$	F	$R^2$	F	$R^2$	F
No controls	.170	49.28***	.157	44.54***	.146	40.88***	.063	16.13***	.128	35.38***
Demographics	.154	44.34***	.133	37.98***	.153	45.03***	.049	12.98***	.132	35.93***
Demographics Attachment	.071	22.99***	.075	22.38***	.072	23.28***	.013	4.09*	.063	18.54***
Demographics Attachment Self-Esteem Self-Efficacy LOC	.026	9.22**	.028	8.71**	.032	10.57**	.001	.32	.036	10.85**
Demographics Attachment Self-Esteem Self-Efficacy LOC Support	.014	5.11*	.019	5.84*	.017	5.83*	.000	.00	.019	6.11*

Note. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . SACQ Total = Overall adjustment; SACQ-A = Academic adjustment; SACQ-S = Social adjustment; SACQ-P = Personal-emotional adjustment; SACQ-I = Institutional attachment; 'Attachment' comprises all four attachment styles scores: secure, fearful, pre-occupied and dismissing; LOC comprises scores for all three orientations: internal, powerful others and chance; Support = Social support.

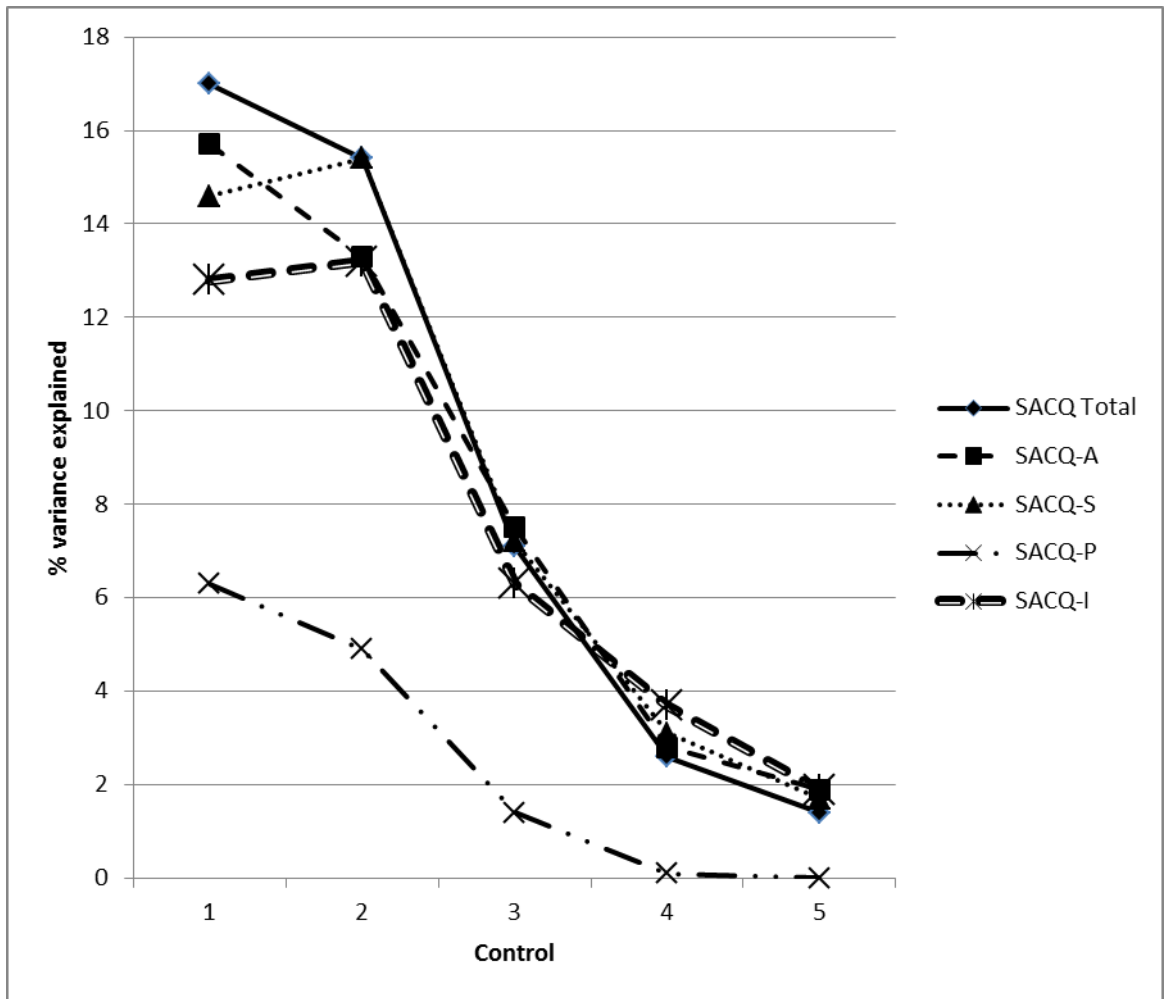


Figure 3.1: University Adjustment: Change in  $R^2$  for EI after Separate Statistical Controls for Other Variables<sup>18</sup>

As depicted in Figure 3.1, above, similar patterns of attenuation were observed for the overall adjustment, academic adjustment, social adjustment and institutional attachment variables. EI entered with no controls explained between 12.8% (institutional attachment) and 17% (overall adjustment) in these criteria. Controlling for demographics on the first step either slightly increased or decreased the amount of variance explained. However, subsequently controlling for attachment in step 3 and self-esteem, self-efficacy and locus of control in step 4 removed approximately half of the variance at each step. After controlling for social support at the final step, only approximately 2% of variance in criteria remained for each of the four variables.

However, patterns of attenuation were somewhat different for personal-emotional adjustment.

For this subscale, the variance in adjustment explained by EI with no controls was substantially

<sup>18</sup> Controls introduced as follows: Step 1 = No controls; Step 2 = Demographics; Step 3 = Demographics, Attachment; Step 4 = Demographics, Attachment, Self-esteem, Self-efficacy, LOC; Step 5 = Demographics, Attachment, Self-Esteem, Self-Efficacy, LOC, Social support.

lower than for other the other SACQ scores, at only 6%. As with two of the other subscales (overall adjustment and academic adjustment), controlling for demographics reduced the proportion of variance explained slightly. However, controlling for attachment reduced this substantially and to a greater degree than for the other four SACQ scores (from 5% to 1.5%). Moreover, in contrast to the other adjustment criteria, after subsequently controlling for self-efficacy, self-esteem and LOC, no variance in adjustment remained.

### **3.5 DISCUSSION**

#### *3.5.1 Overview*

The current study aimed to explore various aspects of first year adjustment to university in a UK post-1992 university context. Specifically, the study aimed to explore adjustment levels, relationships between separate aspects of adjustment, between-group adjustment differences, the importance of predictors (including the incremental predictive validity of EI) and the mechanisms via which EI may influence adjustment.

#### *3.5.2 Main Findings*

##### *3.5.2.1 Adjustment Levels*

Findings with respect to adjustment levels, in terms of item means and comparison of mean SACQ overall and subscale scores with the normative sample, suggest that levels of adjustment are generally good; scores were comparable to the range of scores relating to the four cohorts that comprised the normative sample. Whilst direct comparisons with scores from the aforementioned sample are of limited value in some respects (i.e., the instrument was normed twenty years ago on first year students at a small, exclusive, private university in the US) the findings are nonetheless of interest for a number of reasons. The present study took place in a large university with a high proportion of non-traditional students, many of whom may be academically or otherwise less prepared for university life than was traditionally the case, or indeed may still be the case in other types of institution. The transition literature typically presents the move to an educational institution that is larger and more anonymous than what the student has been used to as one of the major challenges and stresses of the transition to university. Similarly, students who are not as



'academically prepared' or not of the type who would have traditionally attended university are seen to be at greater risk of difficulties. The positive findings with regard to self-reported adjustment in the present sample may therefore suggest that these factors do not represent as great a risk as was previously thought to be the case. A possible reason for this may be that students' needs are being more effectively addressed with better and more sophisticated transition and induction programs, and ongoing support systems to facilitate student adjustment. Moreover, students at smaller and more exclusive institutions may have their own, different, problems of adjustment. These may relate to pressures due to high expectations placed upon them, and having fewer opportunities to socialise widely.

These promising results notwithstanding, Baker and Siryk (1989) advise caution when interpreting SACQ scores, due to the transparency of purpose of the measure. As with many self-report instruments, participants may endeavour to present themselves in a good light and may be reluctant to admit to having difficulties with their university adaptation. Additional evidence of adjustment levels in the form of more objective measures of adaptation, or follow-up interviews, would corroborate students' self-reported assessments of their functioning in this area.

#### *3.5.2.2 Intercorrelations among SACQ Subscales*

SACQ subscales were highly intercorrelated, with findings comparable to those from 34 US college samples presented by Baker and Siryk (1989) and also to those of Beyers & Goossens' (2002) Belgian study. The findings contribute to the validation of the instrument in the current context, as correlations are large enough to indicate that the subscales are measuring a common construct, yet small enough to support the conceptualisation of university adaptation as a multi-faceted construct comprising four distinct facets.

The correlations between academic and personal-emotional adjustment mirror the findings of Duchesne et al.'s (2007) study of trajectories of adjustment, where the majority of students who were considered 'at risk' (i.e., a member of a 'decliner' trajectory group) on academic adjustment were also at risk on personal-emotional adjustment. The authors speculate that the

findings may suggest that the two aspects of adjustment are mutually reinforcing. In other words, emotional problems may affect academic functioning, and vice versa. Of course, an alternative explanation is that there are common factors underlying both.

Similarly, the relationship between academic adjustment and institutional attachment may indicate that students' feelings about the academic challenges they are facing may influence their feelings about being at university in general, and hence affect persistence and withdrawal behaviours.

### *3.5.2.3 Subpopulation Adjustment Differences*

Turning to student subgroup differences, the current study found that older (aged 21 or over) students had better academic and overall adjustment than traditional-aged students. The findings may be due to older students' greater experience and maturity. According to Graham and Donaldson (1999), for example, mature students are likely to attend university with a clear purpose in mind, and have richer life experiences on which to draw, whilst Arthur and Hiebert (1996) proposed that the selection of appropriate and effective coping strategies may depend to some extent on life experience. The results suggest that, in the current context at least, the difficulties that mature students may experience (see Donaldson, 1999; Graham & Donaldson, 1999, as discussed in Chapter 2) do not present significant threats to adjustment. Moreover, the current study also added to the sparse literature on marital status and adjustment to university, finding that those who are married or cohabiting have greater levels of academic adjustment than those who are not. As married/cohabiting students are also likely to be mature students, the question arises as to whether the key issue in relation to differences between mature and traditional-aged students is not merely age, or maturity, but differences in life circumstance (e.g., being in a committed relationship). In a related vein, in these analyses of group differences, students with dependants scored higher on academic and personal-emotional adjustment than those without, although again these results may be due to the participants' age or other aspects of their life situation. They may also indicate that the institution is sufficiently flexible and learner-focused that it is able to provide adequate support that meets students' personal situations and needs. From the point of view of the student, the possibility must be

considered that constraints on the extent to which they can fully integrate into university life may not be an important consideration for them. To put it another way, they perceive themselves to be well-adjusted, even though their levels of integration may be, to some degree, limited.

The question of whether residential status is related to differences in adjustment is an important one as students are living at home rather on campus or in a student house in much greater numbers than was traditionally the case (Holdsworth, 2006). Consistent with existing research, it was found that having moved away from home was associated with better social adjustment. The most obvious explanation for this finding is that living off-campus limits students' potential to make friends and fully engage with student life. However, in line with previous comments, social integration may not be important for many mature students; they are likely to have relationships and commitments, and a social life, elsewhere. Therefore, it should not be assumed that low social adjustment scores are necessarily a cause for concern. Some of the items on this scale explicitly tap students' own assessment of whether their situation is problematic, e.g. "I am quite satisfied with my life at college", "I am meeting as many people and making as many friends *as I would like* at college" (italics added), "I feel that I am very different from other students at college *in ways that I don't like*" (italics added). However, students may score low on items such as "I have several close ties at college" and "I am very involved with social activities in college" without this necessarily being a problem for them. As with the issues surrounding the adjustment of students with dependants, perhaps the key issue is student perceptions of what is important. Thus whilst off-campus students may score lower in social adjustment, it may be the case that this is not problematic and does not affect other facets of adjustment, or their success at college. Further exploration of how social adjustment relates to other aspects of adjustment, student retention and academic performance for off-campus students would shed further light on the importance of social adjustment for non-residential students.

However, note that if one inspects the point-biserial correlation results for demographic variables (a different statistical representation of the same underlying differences in the data)

effect sizes do not ever exceed what would be classed as a small effect size according to Cohen's criterion, suggesting that these findings may be of small practical significance.

In contrast to most of the research on university and gender, that tends to find that females report more emotional and psychological difficulties than males (e.g., Arthur & Hiebert, 1996, Alfeld-Liro & Sigelman, 1998; Fisher & Hood, 1988; Vivona, 2000), this result did not emerge in the current study (although there was a non-significant trend in that direction). There are a number of possible reasons for this finding. First, the majority of participants were drawn from the Schools of Psychology and Nursing. This may have meant that the females in this study had better adjustment due to being in regular contact with many other females, with attendant increased opportunities for close friendships and social activities. Better adjustment for females may also be related to social changes where it is currently more acceptable for females to externalise distress and unhappiness in what may be in some respects anti-social behaviour but which may be preferable to internalising negative emotions (and thus better in terms of their well-being). Conversely, males may be reporting poorer well-being as a result of difficulties relating to studying in a disciplinary area where they are a gender minority; this may produce its own problems of adjustment. Another possible explanation may lie in the gender bias of the sample, since males formed only approximately one-fifth of the sample; it should be considered that with a more even gender distribution an effect of gender on adjustment may have been detected.

Turning to socioeconomic status and generational status, in contrast to most of the literature in this area this study found no differences in adjustment between higher and lower socioeconomic status students, nor between first- and second-generation students. There are several possible explanations for these apparently discrepant findings. The results in relation to SES may be due to different operationalisations of SES across studies. The current study employed the NS-SEC three-category model, an occupationally-based classification scheme which does not take account of income level, nor of subjective perceptions of social class. Hence it may not capture some of the significant aspects of how social class may affect educational experiences. A possible explanation for the finding that the related concept of generational status is not related

to adjustment may be found in Yazedjian and Toews' (2006) suggestion that generational status may be more important when *applying* to university rather than for adjustment once students have started their course, and that siblings' level of education may be a more fruitful avenue of research.

However, the findings may also be explained as a consequence of widening access initiatives that have resulted in a greater diversity of students attending university in the last two decades, and low-SES and first generation students no longer have a minority status to the extent that they previously did. This is of particular relevance given the fact that the current study took place in an institution with a commitment to widening access and hence has a diverse student population. Students may therefore experience less dissonance between the home and university environment than they might have done in a more elite institution or before the move to a mass higher education system. As such, the findings are consistent with the notion of higher education becoming more inclusive and less elitist.

However, methodologically, note that in light of the large number of t-tests conducted, and the associated inflated risk of Type 1 error, some degree of caution should be exercised in interpreting the results of these multiple tests of subgroup differences.

#### *3.5.2.4 Relationships between Established Predictors and Adjustment*

Exploration of established psychosocial predictors of adjustment substantiate past empirical work in non-UK settings. Specifically, positive aspects of individual and interpersonal functioning were related to better adjustment to university life, although some variables (viz., preoccupied attachment, internal LOC, appraisal of emotions and social skills), demonstrated only small effect sizes across all SACQ scores, suggesting that the practical implications of some of the findings may be limited. Overall, however, the results support the theoretical framework that students' individual characteristics are related to university adjustment and that psychological and interpersonal strengths may be viewed as protective factors when students begin university. In line with previous research (e.g., Aspinwall & Taylor, 1992; Bettencourt et

al., 1999; Grant-Vallone et al., 2003-2004; Napoli & Wortman, 1998) self-esteem and social support were particularly noteworthy strong and consistent predictors of adjustment.

#### 3.5.2.5 *Relative Importance of Predictors and Incremental Validity Potential of EI*

With regard to the relative importance of predictors, demographic variables were largely unrelated to criteria, with most demographic variables being non-significant when entered into the model and also in the final model. Exceptions to this were age and residential status; harmonious with the group-based analyses, being older predicted higher overall, academic and personal-emotional adjustment and moving away from home to attend university was related to better social adjustment.

Attachment was an important predictor of adjustment in relation to competing variables. On entry to the model, attachment security positively predicted all facets of adjustment apart from personal-emotional, whilst fearful adjustment negatively predicted social and personal-emotional adjustment, and preoccupied adjustment negatively predicted overall and personal-emotional adjustment, and institutional attachment. The positive effects of attachment security across four of the five adjustment scores are consistent with the theorising that a secure attachment style is predictive of positive outcomes, although it is unclear why in the present study it did not predict personal-emotional adjustment, in view of established links between attachment security and better emotional functioning (e.g., McCarthy, Moller, & Fouladi, 2001). Possibly, this result may be due to secure attachment scores competing for variance with the three other attachment types. Turning to fearful attachment, this style is characterised by the belief that the self is unworthy and others untrustworthy and rejecting (Bartholomew & Horowitz, 1991). Therefore the findings linking this style to poorer personal-emotional and social adjustment may be due to these views of self and other being detrimental to well-being during a stressful life transition and also preventing the student from trusting others enough to be willing to try and form friendships and engage socially in university life. That the preoccupied style, characterised as seeing the self as unworthy, but having a positive view of others, is negatively related to personal-emotional adjustment is likely due to similar reasons as for fearful attachment. With regard to its links to institutional attachment, this attachment style

may cause the student to feel that they do not deserve to be at the institution or to have feelings of not belonging related to difficulties in making friends. Indeed these ideas are consistent with Mallinckrodt and Wei (2005) who, in discussing attachment anxiety, linked it with social self-efficacy, loneliness and problems with social skills. However, it should be noted at the subsequent steps in the regression, secure and preoccupied attachment predictors were displaced in the model when self-esteem, self-efficacy, locus of control and self-esteem were entered, suggesting overlapping variance among these constructs. Fearful attachment, on the other hand, predicted both social and personal-emotional adjustment in the final step, suggesting that this attachment orientation is measuring something that is more distinct than the other three. Perhaps this is due to the ‘negative views of both self and others’ aspect of this orientation, which is clearly incongruent with the focus on psychological and interpersonal strengths inherent in the majority of the other study variables.

As expected, self-evaluative constructs were also shown to be important. Whilst self-efficacy was an important predictor of only academic adjustment, self-esteem predicted each facet of adjustment and also predicted overall and personal-emotional adjustment even after partialling variance from demographic and other competing psychosocial variables. These results suggest that self-esteem may overlap with social support and EI in relation to the prediction of adjustment. The important role for self-esteem is consistent with previous research (Grant-Vallone et al., 2003-2004; Hickman et al., 2000) and supports Rosenberg’s (1965) finding that self-esteem is related to a range of positive social and interpersonal outcomes. The findings are also supportive of theorising from the resilience literature: Rutter (1987) cites higher levels of self-esteem and self-efficacy as one of the main protective factors during key life ‘turning points’. In terms of academic performance and ability, students who were previously seen as being the more able among their peer group, and have been used to performing well academically, may find themselves now only average (or worse) and receiving poor marks, with deleterious effects in relation to their self-concept.<sup>19</sup> Clearly, having healthy levels of self-esteem may protect students in the face of such threats. Moreover, a generally positive view of

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<sup>19</sup> These ‘downward’ comparisons and their deleterious effects on self-concept have been explored at length in studies of school-aged children; see, for example, Marsh, Hau, and Craven (2004).

the self is likely to mean that, even when difficulties in relation to the transition are encountered, the student maintains a positive view of themselves overall and still takes pride in other aspects of their lives and functioning.

Importantly, however, with regard to causal ordering, we must also consider the possibility that positive or negative transition experiences may have influenced the scores on the self-evaluative variables, rather than the other way around. Clearly, pre-transition baseline measures of the constructs, and longitudinal designs, would be necessary in order to be able to make stronger causal inferences in this regard.

Turning to locus of control, the present study supports and extends the research regarding this construct and its relation to university adjustment. Although internality and externality showed expected-direction effects with adjustment in the correlational analyses, only the ‘chance’ orientation predicted adjustment when assessed alongside demographics, attachment, self-esteem and self-efficacy, and even then only for personal-emotional adjustment. This suggests a lesser role for LOC in uniquely predicting variance in adjustment compared to many of the other psychosocial variables. However, the findings generate some partial support for the construct validity of the multidimensional approach to LOC, in that the ‘chance’ and ‘powerful others’ orientations appear to be differentially related to outcomes. According to the theorising associated with the multidimensional approach to LOC, those with a ‘powerful others’ orientation do to some extent perceive *a potential* for control (via the possibility of influencing the ‘powerful others’), in contrast to those who see outcomes as depending purely on ‘chance’ and therefore completely uncontrollable (Levenson, 1981). Clearly the ‘chance’ orientation captures unique variance in personal-emotional adjustment that is not explained by the other psychosocial constructs. As with the ‘fearful’ orientation, an explanation for this may lie in the fact that this may be viewed as the most negative or maladaptive of the dimensions comprising the construct, and thus the most incongruent with the competing, positively-framed variables.

Results regarding social support were also in line with previous empirical research which found it a strong and consistent predictor of university adjustment (e.g., Barthelemy & Fine, 1995;



Napoli & Wortman, 1998): students who reported higher levels of social support were better adjusted than those students who reported lower levels. This variable was not only the strongest correlate of adjustment in a bivariate context, but in the regression analyses it also remained statistically significant after controlling for all other variables, predicting each individual facet of adjustment as well overall adjustment. The measure used was based on the 'provisions of social relationships' described by Weiss (1974) and as such relates to the receipt of advice or information, feeling confident that there are people to turn to in times of stress, receiving recognition of one's own worth, feeling emotional closeness and a sense of belonging, and having the opportunity to provide assistance to others.

The potency of social support as a predictor may therefore be due in some part to the fact that it incorporates a wide range of processes, many of which are theoretically and empirically linked to university adjustment. For example, in the above conceptualisation of social support there may be found means of building self-esteem, self-efficacy and perceptions of control, in addition to other important benefits such as receiving practical assistance. Moreover, social support may be related to the sociological constructs of social and cultural capital, whereby, via social and cultural capital transfer, relationships are a resource that allow benefits to be derived from co-operation between individuals. There is also considerable theory and empirical research linking social support to general well-being. For example, it has been suggested that social support attenuates stress since the perception that others are available to provide resources prevents a situation from being perceived as stressful (Thoits, 1986). Moreover, having someone to talk to has been linked to reducing the incidence of negative, intrusive thoughts (Lepore, Silver, Wortman, & Wayment, 1996).

Thus the findings of this study are supportive of the conceptualisation of social support as interactions with others that facilitate more adaptive engagement with one's environment (Caplan, 1974) and as a protective factor in the face of stressors and adversity. Findings are also congruent with the substantial body of empirical evidence strongly linking social support with better physical and emotional well-being, as well as a wide variety of other positive outcomes.

Turning to EI, global EI scores incrementally predicted variance in all but personal-emotional adjustment. However, when the incremental validity of EI subscales was explored it was found that, consistent with the findings of Chapman and Hayslip (2005), they differentially predicted the separate adjustment criteria. The ‘appraisal of emotions’ component (the ability to perceive emotions in oneself and others) was incrementally valid in relation to all but the personal-emotional subscale. A possible explanation for the relationship between academic adjustment and appraisal of emotions is that students who are better at identifying their own feelings are able to recognise their academic strengths and weaknesses and are therefore able to manage their academic situation more effectively. Appraisal of emotions skills may also be advantageous in terms of enabling students to effectively engage with those who can help them, by recognising the other person’s emotions and responding to them in appropriate manner. Another possible explanation for this finding is that being able to identify and respond to emotional expressions during group situations, in which much teaching and learning takes place, could enhance motivation and learning.

Theoretically, the findings regarding the unique contribution of the appraisal of emotions subcomponent are in line with Davies et al.’s (1998) work on the utility of the EI construct. Specifically, the researchers concluded that the “emotion perception” aspect of EI held the most promise in terms of representing a ‘new’ and unique construct, with other EI components appearing to be ‘repackaging’ of existing individual difference variables.

An unanticipated finding in the present study was that the social skills component of EI (i.e., the ability to empathize with and understand others, and hence manage their moods and emotions) was negatively related to personal-emotional adjustment in the hierarchical regressions. This result is counter-intuitive and contrary to what would be expected from reviewing the existing EI literature. Moreover, the simple correlation between the two variables was positive. Taking these facts into account, the result is suggestive of suppressor effects.

It is also surprising that the social skills component of EI did not predict social adjustment, given that understanding and managing the emotions of others would be expected to be

important for social interactions. However, it should be noted that reliability for this subscale in the present study was lower than the generally accepted cut-off value of .70, raising the question of whether the items within the scale are assessing a homogeneous construct and whether this aspect of EI may need to be further explored using an alternative EI instrument that may capture the construct more successfully.

The fact that optimism/mood regulation component of EI (i.e., the ability to be positive and control emotions) captured incremental validity only in personal-emotional adjustment may be due to its overlap with other theoretical covariates (for example, inspection of the simple correlations indicates that it is correlated with internal locus of control, self-esteem, self-efficacy and social support). This would seem to be a logical conclusion given that the simple correlations between this subcomponent and criteria were stronger than those of other subcomponents. Moreover, as discussed in the foregoing chapter reviewing the links between emotions and education, the emotional nature of learning of education and transitions would imply that effectively dealing with strong emotions and managing to maintain a positive mood in the face of difficulties would be expected to be important for all facets of adjustment. For example positive emotions and mood regulation would be expected to be important for well-being, engaging in positive interactions with others and persevering with academic work in the face of challenges and difficult moods. Therefore the lack of incremental validity observed in the present study should not be taken to indicate that emotional regulation is unimportant as a predictor of the various dimensions of adjustment, merely that it is not assessing anything unique.

With regard to the 'utilisation of emotions' aspect of EI (i.e., the use of emotions to facilitate problem-solving and creativity) it is unclear why this subcomponent appears unimportant to criteria in both the simple correlations and the regression analyses; we would expect it to play some role in enhancing academic outcomes, and yet it does not. However, as with the 'social skills' EI subcomponent, reliability for this subscale was lower than the generally-accepted cut-off and therefore results should be interpreted with caution. Plausibly, particularly in light of its

internal reliability score, the SEIS does not adequately capture the ‘utilisation of emotions’ construct.

Possible explanations for unexpected findings and for some EI scores failing to predictor criteria may lie in the limitations of the measure of EI employed in the current study. The SEIS has been criticised for its unclear dimensionality (Austin, et al. 2004; Petrides & Furnham, 2000; Saklofske, et al., 2003; Gardner & Qualter, 2010), which raises questions regarding the extent to which it corresponds to the Salovey and Mayer (1990) model. Other concerns relate to participants’ responses being inaccurate reflections of actual emotional abilities, due to biases in judging their own emotional skills (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006) or the scale’s susceptibility to deliberate faking (Day & Carroll, 2008; Grubb & McDaniel, 2007; Schutte et al., 1998).

In terms of the implications of the findings for the incremental importance of EI, the incremental validity demonstrated by EI variables ranged from 1.2-2.0% depending on the criterion variable. According to Hunsley and Meyer (2003) an increase of 1.5% constitutes a reasonable contribution of unique variance. Moreover, the regression analyses incorporated a large number of control variables including psychosocial variables that are not only strong predictors of adjustment but also have conceptual overlap with EI. These were therefore very stringent tests of incremental validity. As such, whilst the results may not suggest that EI is *crucially* important for adaptation beyond other competing predictors, they nonetheless represent some promising preliminary findings with regard to the role of EI in predicting adjustment.

That the incremental contribution of EI was higher for all criteria when subscales, rather than the global score, was employed, highlights the importance of testing the predictive value of the SEIS at varying levels of bandwidth and fidelity (i.e., at both the global and subscale level).

### 3.5.2.6 *Attenuation of the Relationship between EI and Adjustment*

The final research question asked whether the relationship between EI and adjustment was mediated by other variables. To explore the potential mediating effects of other study variables, the relationship between EI and adjustment was explored, whilst introducing separate statistical controls for other study variables.

The proportion of variance accounted for by EI without any controls was highest for overall and academic adjustment, and slightly less for social adjustment and institutional attachment. Surprisingly, EI with no controls accounted for substantially lower variance in personal-emotional adjustment. However, the introduction of statistical controls for other variables attenuated the proportion of variance explained by EI. Whilst controlling for demographics did not attenuate the effects of EI, subsequently controlling for psychosocial variables substantially reduced the variance explained at each step. This set of analyses sheds some light on what other factors are involved in the relationship between EI and adjustment and hence how EI may exert its influence. The magnitude of the variance explained after controlling for the other variables, and the substantial attenuation demonstrated after controlling for some of the theoretical covariates, suggest that EI influences adjustment via shared variance with other variables also related to adjustment. The findings also support research linking attachment and EI. For example MSCEIT scores have been linked to attachment security (Kafetsios, 2004) and the relationship between attachment security and peer social competence in a sample of schoolchildren was shown to be mediated by the ability to regulate one's emotions (Contreras, Kerns, Weimer, Gentzler, & Tomich, 2000). Moreover, a secure attachment style has been associated with greater engagement with (attachment-related) emotions (Kobak, Cole, Ferenz-Gillies, Fleming, & Gamble, 1993). Plausibly, then, EI may tap attachment constructs, or each may be tapping common underlying (e.g., biological) factors.

### 3.5.3 *Conclusion*

The current study makes several important contributions to both the university adaptation and EI literatures. The study is unique as it is the first to investigate relationships between SEIS and SACQ scores, and explores the incremental validity of EI after controlling for other competing

predictors of adjustment. The results presented here extend previous findings by showing empirical links between individual EI subcomponents and the dimensions of adjustment. The current study further extends work in the field by exploring adjustment to university in the context of a UK post-1992 institution, and is the first to employ the SACQ measure in a UK context. Another important contribution is that it addresses the question of how demographic variables influence adjustment after the move from an elite to a mass higher education system, and in an institution with a diverse student population and a commitment to widening access initiatives.

Findings suggest that the relationship between some demographic variables and adjustment are different from what reviews of the extant literature may suggest, though the findings support much of the US-based research on psychosocial predictors of adjustment, and provide corroboration for the particular importance of social support. The results also provide some promising findings regarding the incremental importance of EI for university adjustment, and suggest by what mechanisms EI may exert an effect on adjustment.

Taken together, the findings support the theoretical framework that success at university depends to a large extent on students' internal and external resources, and that aspects of adaptive individual and interpersonal functioning constitute protective factors that act as a buffer against the stresses of transitioning to higher education. Moreover, the results add to the accumulating research indicating that EI is a useful personal resource for adapting to life situations and suggest that EI shows promise as a framework for exploring adjustment to university.

#### *3.5.4 Limitations*

Before discussing the implications of the findings, some limitations of the present study require consideration. First, there are issues relating to the representativeness of the sample, and hence the generalisability of the findings. Specifically, participation was voluntary and those who elected to take part in the study may have differed in important ways from other students. It is possible, for example, that participants represented the more motivated, able and well-adjusted

of the general population of first year students. Related to this, participation depended on attendance at lectures and seminars, which also may have resulted in participants being unrepresentatively more well-adjusted and higher-functioning. Further, the fact that data were collected six to seven weeks into the first semester, when students with the more severe adjustment difficulties may have already withdrawn from their course, constitutes another limitation which compounds this problem further.

Moreover, the sample was not fully representative with respect to some demographic groups, it comprising disproportionately more females, white and home students. Similarly, the present research was concerned only with full-time students; results may not generalize to part-time students, who may face different issues in relation to adaptation. The study is also specific to a particular institution; all data were collected in a single, UK, post-1992 university which has a commitment to widening access, and hence a more diverse and less conventional student population than many other universities. Consequently, it cannot be assumed that the findings are transferrable to all students and to other institutions.

Results are also limited by an exclusive reliance on self-report methods, which depend on individuals accurately reporting their behaviour and experiences. Some other, more objective measures of adaptation (e.g., evidence of class attendance or involvement with other university activities) would have provided a useful corroboration of SACQ scores. Also in relation to this reliance on self-report methods, the possibility that common method variance (Podsakoff et al., 2003) inflated associations among study measures should also be considered.

Another consideration is that the cross-sectional study design, with measures taken concurrently and after starting university, precludes inferences regarding causality and relationships over time. It also raises the possibility that some unknown third variable accounts for associations among study variables. As discussed above, the possibility that the experience of transitioning to higher education (whether positive or negative) has influenced the psychosocial variables, rather than the other way around, also cannot be ruled out. In other words, variables that are construed as predictors or correlates of adjustment may in reality be *outcomes* of adjustment.

According to Hackett and Betz (1992), for example, students' self-efficacy beliefs may be strongly influenced by their college experiences. Nonetheless, the psychosocial variables employed in the study are generally thought to be reasonably stable constructs, and it seems unlikely that this issue constitutes a serious threat to the findings of the study. Longitudinal studies, involving pre-transition measures of psychosocial variables, would be necessary to address the question of causality.

### *3.5.5 Implications of the Findings*

The findings of the current study have practical implications for universities seeking to deal with issues of student adaptation. Educational practitioners may want to use the psychosocial measures explored in the current study, including EI, as a focus for mentoring or transition programs that could support students who have developed adjustment difficulties. The findings could also be used by schools and colleges to assist students in developing the attributes that they will need to be successful at university.

The particular importance of social support suggests that students should be encouraged to develop, maintain and utilise support networks. Developing mentoring schemes, and encouraging students to join university societies would be a possible means of facilitating the development of positive and supportive relationships. The findings also suggest that the pastoral role of university tutors (that may have become marginalised in recent years as students numbers have increased and one-to-one contact with students become more impractical) should be treated with greater importance. This is likely to be a valuable source of social support for many students.

However, depending on the facet of university adjustment that is being targeted, interventions based on the other psychosocial variables explored in the current study may also be important. Self-esteem and attachment security issues could be addressed by therapy and counselling. According to Bandura (1997) self-efficacy originates from four principal sources: past performance, vicarious experience, verbal persuasion and emotional cues. These principles give some indication of how self-efficacy can be developed. That emotional cues are considered



important for self-efficacy suggests that teaching students to manage emotions positively may be a useful means of fostering general self-efficacy (since negative emotional responses in the individual are likely to be interpreted by them as signifying a lack of self-efficacy). Interventions to maximise students' perceived control may also be useful. As with self-efficacy, these could involve the development of skills, and emphasising that positive outcomes are associated with deploying effort.

The findings of this research bear implications for the applied utility of EI in higher education institutions. There is accumulating evidence that emotional knowledge can be taught (e.g., Greenberg, Kusché, Cook, & Quamma, 1995), and the findings of this research provide some support for the notion that teaching socio-emotional skills may be beneficial. The findings of the current study suggest that the most important emotional skills for students to develop may be to manage their emotions, maintain a positive outlook and develop skills in appraisal of emotions (perceiving emotions). The findings from the incremental validity analyses suggest that where other psychosocial protective factors are being taken into account, only the addition of the appraisal of emotions aspect of EI may add any additional value to outcomes. However, it should be noted that in terms of interventions, the aspects of individuals that are most amenable to change may be the most appropriate targets. Although there is clearly much overlapping variance in the constructs investigated in this study, the fact that there is accumulating evidence that emotional skills can be taught may make this a more fruitful target for intervention efforts than competing variables that may be more stable attributes of individuals and therefore more resistant to change.

### *3.5.6 Future Directions*

The findings from the current study suggest some avenues for future research. First, there was modest support for the incremental validity of the SEIS in predicting university adjustment. However, in order to advance our understanding of the role of emotional intelligence in adjustment to university, further research is required to explore relationships between EI and university adjustment using multiple measures of EI, with different theoretical bases. As far as

the author is aware, no previous study has directly compared the utility of multiple measures of EI with respect to the criterion of university adjustment. This would be a useful development of the current work in light of the ongoing debate over how EI should be measured and conceptualized (e.g., Brackett et al., 2006; Roberts, Zeidner, & Matthews, 2001) and findings suggesting that outcomes of EI research may depend substantially on the conceptualization of EI employed (Zeidner, Shani-Zinovich, Matthews, & Roberts, 2005). The limitations of the SEIS measure outlined previously (i.e., in terms of its unclear dimensionality and the reliability of self-report assessments), taken together with the lack of expected relationships demonstrated between SEIS subcomponents and criteria in the current study, provide additional impetus for exploring EI by other means.

Comparisons of the strengths of the relationships between the various measures of EI and university adjustment, and the incremental validity afforded by the different measures, would be an important addition to both the university adaptation and EI literatures. The findings would add to the debate regarding which conceptualizations of EI have the greater utility in predicting real-life outcomes, and specifically which are most relevant in relation to university adjustment. This would yield potentially valuable information that could inform decisions regarding the selection of appropriate measurement instruments. Crucially, it will suggest whether it is self-perceptions of EI, or actual abilities, that are most important for university adjustment.

These analyses should incorporate a more rigorous test of incremental validity by also controlling for personality and cognitive intelligence, due to their shared variance with trait and ability measures of EI respectively (Brackett & Mayer, 2003; Newsome, Day, & Catano, 2000). This would potentially provide a stronger argument that EI is a useful construct in its own right in the current context, and that any incremental variance demonstrated is not merely a correlational by-product of other individual difference variables.

Another goal of future research should be to further explore the mechanisms by which EI is associated with adjustment to university. This may involve further explorations of the mediators of the relationship between EI and university adjustment, and could also incorporate

an exploration of Qualter et al.'s (2009) suggestion that higher-EI individuals are more likely to seek out and employ sources of support during the transition to university.

Further, the results of the current study suggest that the EI subcomponent 'appraisal of emotions' is a valuable incremental predictor of adaptation. Some speculative reasons for this were put forward in the foregoing discussion, but further exploration of why this aspect of EI is related to beneficial outcomes warrants further attention.

In light of the diversity of the student body in many institutions, research is also needed to analyse whether different predictor variables are salient for different demographic groups. In a related vein, as the current study sampled only a limited number of courses, another important focus for future research would be to explore whether predictors have more importance for some academic disciplines than others. Findings from studies such as these will have implications for the appropriateness of the different measures as screening and intervention tools for different types of student.

Finally, future studies could take multiple measures of adjustment over the course of students' university careers, in order to explore how predictors are related to long-term adjustment and to patterns of adjustment over time. Clearly, predictors that have long-term detrimental effects on adjustment may need to be prioritised with respect to screening and interventions.

## **CHAPTER 4: REVIEW OF LITERATURE: EMOTIONS, EMOTIONAL INTELLIGENCE AND THE TRANSITION TO UNIVERSITY**

### **4.1 INTRODUCTION**

This chapter begins by detailing the role of emotions in education and in educational transitions, using Baker and Siryk's (1989) multi-faceted theory of student adjustment (i.e., comprising personal, social, academic and institutional attachment subdomains) as a basis for discussing the challenges of transitions. This is followed by an overview of the construct of emotional intelligence (EI) and literature relating to EI and its relationship to aspects of educational transitions is presented. It will be argued that EI may bear promise as a framework for understanding adjustment to university life. Finally, some directions for future research are discussed.

### **4.2 EMOTIONS, EDUCATION AND EDUCATIONAL TRANSITIONS**

#### *4.2.1 Introduction*

Emotions are important in relation to education and adjusting to university life in two respects: (i) strong emotions can be generated by the experience of learning and of transitioning between educational stages, and (ii) the emotions that students experience can have a significant impact on their success and progression at university (Pekrun, Goetz, Titz, & Perry, 2002). What follows is a more detailed discussion of why emotions play an important role in adjustment to university life, from both of these perspectives.

#### *4.2.2 Emotions Generated by Transitions and Learning*

It has been postulated that changes in one's environment may often trigger strong emotions (Lazarus, 1991). Starting university, therefore, may be associated with a range of emotional responses in students, both positive and negative. In qualitative accounts of the experience of the transition to university, students often describe their experiences in emotional terms, sometimes reporting extreme emotional highs and lows (Christie et al., 2008). Whilst students frequently report feeling excitement and anticipation (e.g., Christie, Cree, Hounsell, McCune, & Tett, 2006) the transition can also invoke more difficult emotions: students may experience feelings of loss (Scanlon et al., 2007), dislocation (Christie et al., 2008), loneliness and

homesickness (Fisher & Hood, 1987), anxiety (Christie et al., 2008; Cooke et al., 2006; Rosslyn, 2004) and depression (Rosslyn, 2004).

Many of these emotions are likely to be related to the social and personal challenges associated with starting university, as students take on new roles and responsibilities, and re-structure social relationships. However, research has also highlighted the extent to which emotions and thinking interact, making academic learning emotionally, as well as cognitively, demanding. Whilst negative emotional responses such as test anxiety have traditionally been the focus of work in this area (e.g., Zeidner, 1990), more recently Pekrun, et al.'s (2002) research on academic emotions has highlighted the diversity of emotions that academic settings may invoke. In their exploration of the emotions of school and university students, Pekrun et al. (2002) found that overall, positive emotions were reported as frequently as negative. They found that anxiety was the most frequently-reported emotion, but feelings of hope, pride, relief, anger, shame, hopelessness and boredom were also commonly-experienced.

Whilst much of the research in this area has been conducted with students engaging in academic work individually, group work can also be powerfully emotionally-charged, with students frequently feeling enthusiastic and excited, but also distressed and antagonistic when problems with other students arise (Cartney & Rouse, 2006).

#### *4.2.3 The Importance of Emotions for a Smooth Transition to University*

Various aspects of emotional functioning are likely to influence how well a student adjusts during the transition to university. Perhaps the most important aspect of emotions is the student being in a positive emotional state. Indeed, the mutually reinforcing interactions of positive (and negative) affect with cognitions and behaviour is a fundamental principle of cognitive therapy (Beck, Rush, Shaw, & Emery, 1979). Positive emotions have also been shown to be associated with well-being and better social functioning (Diener, 2000; Diener, Sandvik, & Pavot, 1991; Lyubomirsky, King, & Diener, 2005), a more self-enhancing attributional style (Ashby, Isen, & Turken, 1999; Fredrickson & Joiner, 2002; Ryan & Deci, 2001) and the tendency to interpret events in a more positive manner (Lyubomirsky & Tucker, 1998).

Whilst negative emotions such as anxiety can impair cognitive processing (Eysenck & Calvo, 1992; Zeidner, 1998), positive emotions have been shown to be related to improved performance on cognitive tasks, improved memory functioning, and greater flexibility in thinking, judgment and behaviour, including more creative problem-solving (Ashby et al., 1999; Fredrickson & Joiner, 2002; Isen, 1999; Isen, Daubman, & Nowicki, 1987).

Pekrun et al. (2002) suggest that positive academic emotions enhance learning via better motivation, self-regulation, cognitive processing, problem-solving and resiliency, as well as the use of more adaptive learning strategies. Other research has identified relations between emotions and memory, attention and decision-making (see Cacioppo & Gardner, 1999, for a review). Similarly Schwarz (2002) proposes that moods influence information processing such that sad moods are related to a rigid processing style with a focus on details, whereas positive moods are linked to the ability to employ heuristics and adjust cognitive process styles according to the task.

Related to this, having control over emotions is likely to be important with respect to various outcomes. Research on academic emotions has highlighted the benefits of striving to achieve 'adaptive' levels of emotions (i.e., experiencing lower levels of negative emotions and higher levels of positive emotions), and has linked excessive levels of negative emotions to poorer academic performance and well-being, and the increased likelihood of withdrawal from a course of study (Ruthig et al., 2008; Zeidner, 1998)

Finally, there is evidence to suggest that being aware of emotions is likely to be advantageous to students in a number of respects. Recognising (and being able to convey) emotions has been associated with better interpersonal relationships (Nowicki & Duke, 1994; Reis & Patrick, 1996). Moreover, it has been suggested that the affective cues and information inherent in emotions are an important means of assessing whether or not particular situations are benign or problematic, and as such are important facilitators of effective judgment and decision making (Gohm & Clore, 2002; Schwarz, 2002).

The importance of emotions for first year undergraduates is further underscored by findings that emotional and social adjustment factors have been shown to be better predictors of attrition for this group than academic adjustment factors (Gerdes & Mallinckrodt, 1994). Similarly, Rickinson and Rutherford (1995) found that being emotionally unprepared for university was cited as one of the main reasons for withdrawal by students leaving university during the first term. Finally, research findings relating emotional stability (Lidy & Kahn, 2006), hardiness (a construct related to psychological resilience, or the ability to maintain positive emotions and recover from negative emotional experiences [Block & Block, 1980]; Mathis & Lecci, 1999) and alexithymia (Kerr et al., 2004) to SACQ scores suggest that emotional understanding and positive emotionality are important aspects of smoothing the transition to university.

#### *4.2.4 Summary*

The foregoing evidence suggests an important role for emotions in numerous aspects of student life. Moreover, it may be inferred from this that the construct of emotional intelligence has the potential to be a useful framework for understanding adjustment to university.

### **4.3 EMOTIONAL INTELLIGENCE: BACKGROUND**

#### *4.3.1 Overview*

The concept of emotional intelligence was originally defined by Salovey and Mayer (1990, p.189) as “the 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”. The construct has its roots in Thorndike’s (1920) concept of social intelligence and Gardner’s (1983) interpersonal and intrapersonal intelligences. The concept was popularised by Goleman (1995) in his book “Emotional Intelligence: why it can matter more than IQ” in which he presented EI as being, in some instances, more important than traditional cognitive intelligence, and an important predictor of human potential and success in a wide range of life domains. Subsequently, a number of different conceptualisations of EI have emerged and the topic has become the focus of a considerable amount of both scientific and popular interest. Results suggest that EI may predict success in a range of settings such as work, education and personal relationships (e.g.,

Schutte et al., 2001), although academic researchers have challenged what they regard as exaggerated and unsubstantiated popular claims for EI (e.g., Brackett, Lopes, et al., 2004; Matthews, Zeidner, & Roberts, 2002; Mayer, Salovey, & Caruso, 2000).

#### 4.3.2 *Models of EI*

Within the emotional intelligence literature, two competing models of EI have emerged. Whilst the ability model defines EI as a set of emotion-related cognitive skills, other researchers have proposed alternative conceptualizations of the construct. These tend to be referred to as ‘mixed’, ‘trait’ or ‘personality’ approaches to EI. In contrast to the ability model, these conceptualizations include cognitive and also non-cognitive processes such as personality traits related to adaptive coping, and social competencies (Petrides & Furnham, 2006).

EI researchers have developed measures that correspond to their own conceptualization of the construct, and different assessment modalities are associated with the different type of model. Whilst ability models of EI assess the construct using performance-based measures modelled on tests of cognitive intelligence (IQ tests) requiring respondents to solve emotion-related problems, the trait approach generally employs self-report instruments which ask respondent to describe themselves on Likert-scale items which assess self-perceived skills, abilities and personality traits. The difference between the two approaches is sometimes expressed as tests of typical vs. maximal performance (Petrides & Furnham, 2000).

##### 4.3.2.1 *The Ability Model of EI*

Whilst the Salovey and Mayer (1990) model incorporated aspects of personality, Mayer and Salovey (1997) produced a more focused definition. This ‘ability’ model conceptualises EI as a form of intelligence distinct from IQ that relates to the individual’s ability to reason with emotions and solve emotional problems in four areas: “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 emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth” (p.10). Thus the four ‘branches’ of the model are: perceiving emotions, using emotions, understanding emotions and managing



emotions. The model is hierarchical and developmental, with branches arranged from the more basic, earlier-developing skills to higher processes requiring greater maturity. So, for example, emotional regulation is likely to depend to some extent on the individual first having emotional perception and understanding.

The researchers developed the Multifactor Emotional Intelligence Scale (MEIS; Mayer, Caruso, & Salovey, 1999) and subsequently the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT, Mayer, Salovey, & Caruso, 2002) to test and measure their conceptualization of EI. The MSCEIT assesses perception of emotions by requiring respondents to indicate how much of a particular emotion is being suggested or expressed in pictures of faces, patterns or landscapes. Using emotions to facilitate thought is assessed by requiring respondents to describe emotional sensations and how they relate to other sensory modalities such as taste and colour, and also by having users identify which feelings are likely to facilitate or impede various tasks. Emotional understanding is assessed via a set of questions relating to how simple emotions combine to form more complex emotions, and how emotions may change in response to particular situations. Finally, tasks that assess the management of emotions present respondents with a number of emotion-laden hypothetical situations for which they choose the most effective way of managing their own or others' emotions.

#### *4.3.2.2 Trait/mixed Models of EI*

##### *4.3.2.2.1 Introduction*

Two distinct types of EI instrument are classified as 'trait' (or 'mixed' or 'personality') measures of EI: self-report instruments based on Salovey and Mayer's (1990) model of EI, and broader conceptualizations of the EI construct.

##### *4.3.2.2.2 Self-report Instruments Based on the Ability Model*

Self-report instruments based on the ability approach elicit the respondent's self-perceived emotional skills. The Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) was an early example of such a measure. Similarly, the Schutte Emotional

Intelligence Scale (SEIS; Schutte et al., 1998) is also considered a trait measure although it is based on the Salovey and Mayer (1990) ability model of EI.

#### 4.3.2.2.3 Broader Conceptualizations of the EI Construct

A popular model of EI based on a broad conceptualization of the construct is Petrides and Furnham's (2003) trait model, which conceptualises EI in terms of the emotion-related aspects of personality, and therefore as a personality trait (albeit one which is distinct from other traits such as the Big Five; Petrides & Furnham, 2001). According to this model EI is "a constellation of behavioral dispositions and self-perceptions concerning one's ability to recognize, process, and utilize emotion-laden information" (Petrides, Furnham, & Frederickson, 2004, p. 278) and "a constellation of emotion-related self-perceptions and dispositions located at the lower levels of personality hierarchies" (Petrides, Pérez-González, & Furnham, 2007, p. 26). It is measured using the Trait Emotional Intelligence Questionnaire (TEIQue; Petrides & Furnham, 2003), which comprises 153 items and 15 subscales organised under four factors: well-being, self-control, emotionality, and sociability.

A similar model is Goleman's (1995) Emotional Competencies model of EI. This is based on Salovey and Mayer's (1990) definition of EI, but additionally includes other ability, personality and temperament factors. It comprises five components: (a) knowing one's emotions, (b) managing emotions, (c) motivating oneself, (d) recognizing emotions in others, and (e) handling relationships. The Emotional Competencies Inventory (ECI; Boyatzis, Goleman, & Rhee, 2000) is based on Goleman's conceptualisation of EI.

Bar-On (1997) similarly employs a broad definition of EI and places emphasis on psychological well-being and adaptation to environmental demands. Bar-On's (1997) model defines EI as "an array of non-cognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures" (Bar-On, 1997, p.14). The model comprises the following abilities: intrapersonal (e.g., recognizing and understanding one's own feelings); interpersonal (e.g., empathy); adaptability (the ability to adapt one's emotions and behaviors according to the situation) and stress management. Bar-On developed

instruments to measure the construct as conceptualized by his model: the BarOn EQ-i (Bar-On, 1997) and the BarOn EQ-i: Youth Version (Bar-On & Parker, 2000). The EQ-i incorporates five dimensions of EI (intrapersonal skills, interpersonal skills, adaptability, stress management and general mood) and comprises 15 subscales and 133 items.

#### *4.3.3 Criticisms and Controversies*

There exist a number of areas of substantial disagreement among researchers with respect to EI, many of which relate to the legitimacy of the construct and how it should be defined and measured.

One of the most common criticisms levelled at EI relates to its uniqueness as a construct. Substantial overlap between measures of trait EI and personality, and between cognitive EI and intelligence (e.g., Davies et al., 1998; Newsome et al., 2000) have led to claims that EI is merely a ‘repackaging’ of well-established individual difference constructs that offers little in the way of unique predictive value (Bowman, Markham, & Roberts, 2001; Brody, 2004; Davies et al., 1998; Landy, 2005).

Other controversies centre around the relative merits of competing models of EI and associated definitional and measurement issues. Proponents of the ability model generally view trait or mixed models as being excessively broad conceptualizations of the construct that cannot readily be differentiated from models of personality, and are therefore weak and flawed (Brackett & Salovey, 2006). Trait EI measures have also been criticized for relying on the individual’s own perceptions of their emotional skills, when they may not be able to accurately assess their own abilities in this area (Brackett et al., 2006). Moreover, it has been suggested that self-report measures are susceptible to faking and socially-desirable responding (Grubb & McDaniel, 2007; Schutte et al., 1998) and may be influenced by the respondent’s mood (Mayer, 2001) as well as aspects of their self-concept and self-awareness (Mayer, Salovey, & Caruso, 2008). As such they may not accurately reflect actual abilities.

However, ability models and their related measurement instruments have also met with their share of criticism. Some researchers claim that there is insufficient evidence that EI is an intelligence comparable to traditional cognitive intelligence (e.g., Roberts, et al., 2001), a position that is taken by proponents of the trait approach, who claim instead that EI belongs within personality hierarchies (Petrides, Furnham, & Mavroveli, 2007). It has also been argued that test instruments relating to emotional experience do not readily lend themselves to veridical scoring criteria (Brody, 2004; O'Sullivan & Ekman, 2004; Petrides & Furnham, 2001; Roberts et al., 2001). Further, the use of consensus scoring (where the modal response is taken to be correct) raises questions regarding how accurate or representative this method is, and whether the test is, in effect, merely measuring conformity to social norms (Matthews & Zeidner, 2000; Roberts et al., 2001).

Finally, the fact that research generally indicates that self-report and ability measures share only small amounts of variance (e.g., Brackett et al., 2006; Brackett & Mayer, 2003; Brackett & Salovey, 2006; Goldenberg, Matheson, & Mantler, 2006; Livingstone & Day, 2005; Mayer, Salovey, & Caruso, 2004; O'Connor & Little, 1993; Van Rooy, Viswesvaran, & Pluta, 2005; Warwick & Nettelbeck, 2004; Zeidner et al., 2005) has led to suggestions that the two types of measure are tapping different constructs.

#### 4.3.4 *Summary*

To summarise, numerous different conceptualizations, models and measures of EI currently co-exist and there is ongoing disagreement about what factors should constitute emotional intelligence and how the term should be used. Whilst some researchers (e.g., Mayer, Salovey et al., 2000) see the different approaches as mutually exclusive, others suggest that they are complementary aspects of emotions and find utility in both models (e.g., Ciarrochi, Chan, & Caputi, 2000; Tett, Fox, & Wang, 2005).

However, regardless of the conceptualization of the construct, the various approaches share a number of common features which relate to the awareness, understanding and regulation of the emotions of oneself and others and the adaptive use of emotions to facilitate positive outcomes.

## 4.4 EMOTIONAL INTELLIGENCE AND THE TRANSITION TO UNIVERSITY

### 4.4.1 Introduction

This section considers how EI may predict university adjustment by discussing EI research that relates to each of the facets of university adjustment according to the framework proposed by Baker and Siryk (1989).

### 4.4.2 EI and Academic Performance

Clearly, the key indicator of student success in higher education is academic performance. Whilst predictors of academic success have been extensively researched, they have traditionally focused on cognitive variables. In recent years, however, there has been increasing interest in the influence of emotional competencies on academic outcomes. However, empirical studies of the links between EI and such criteria have yielded mixed findings.

In college and university settings a number of studies have found positive relationships between trait measures of EI and academic performance. Schutte et al. (1998) found that SEIS scores obtained at the start of the year predicted end-of-year academic performance in a diverse sample of undergraduate students, whilst using both undergraduate and postgraduate business students, Rozell, Pettijohn, and Parker (2002) found relationships between an EI test based on Goleman's model, and academic performance. Similarly, overall EQ-i scores and subscale (intrapersonal abilities, adaptability and stress management) scores collected at the start of the first year of university have been shown to differentiate between academically successful and unsuccessful students (as defined by year-end average grades of greater than 80% and less than 60% respectively; Parker, Duffy, Wood, Bond, & Hogan, 2005; Parker, Summerfeldt, et al., 2004). Moreover, Parker, Austin, Hogan, Wood, and Bond (2005) found similar results using a measure of alexithymia (a construct strongly inversely related to EI; Parker et al., 2001) and the same criteria for academic success.

The utility of broader conceptualizations of EI in predicting academic performance was also demonstrated by Van der Zee, Thijs, and Schakel (2002). Using their own EI scale encompassing similar components to those included in Bar-On and Goleman's models, EI

incrementally predicted academic outcomes after controlling for personality and intelligence. Positive results have also been found using ability measures. Lam and Kirby (2002) using the MEIS found that the overall MEIS score and two of its subscales (emotional perception and emotional regulation) were able to explain cognitive performance beyond the effects of general intelligence.

The possibility that EI is more closely related to academic success in subjects that involve emotion-related content or skills is supported by research demonstrating strong correlations between EI and performance in a postgraduate clinical psychology course, even after controlling for demographic and other academic variables (Boone & DiGiuseppe, 2002, cited in Mayer, et al., 2004). Similarly, in a study involving first year medical students, a significant correlation between EI and academic performance was found only for a course component involving emotional skills (Austin, Evans, Goldwater, & Potter, 2005).

Other research has similarly generated equivocal findings. Some results support the idea that outcomes may differ depending on the measure of EI employed: Ashkanasy and Dasborough (2003) found that ability, but not trait, EI predicted performance in an undergraduate leadership course. Further, there exists the possibility that the effects of EI are more indirect than direct: in a study conducted by Rode et al. (2007), only an interaction of EI with conscientiousness demonstrated incremental validity over cognitive ability and personality.

Other studies have demonstrated relationships between EI and academic performance but nonetheless have concluded that EI has little utility in this domain. For example, Barchard (2003) found that both ability and trait measures of EI predicted academic performance, but personality and intelligence were better predictors and that EI was unable to predict unique variance in the criterion after controlling for these two variables. Brackett and Mayer (2003) also failed to demonstrate an important role for EI in predicting academic performance: trait EI as measured by the EQ-i and SEIS was found to be uncorrelated with performance and the (weak) correlations between ability EI and the criterion decreased to non-significance after controlling for personality and intelligence.

Similarly, some studies have found weak or no relationships between the two variables. Bastian, Burns, and Nettelbeck (2005) found that correlations between EI and academic achievement in a sample of predominantly first year students were small and not statistically significant, whilst Newsome et al. (2000) found that neither the EQ-i total score nor any of its subcomponents predicted academic achievement as measured by GPA. In a study employing both self-report and ability EI (i.e., the EQi and the MSCEIT), it was found that only the EQ-i interpersonal and stress management subscales, and the MSCEIT understanding emotions subscale scores were correlated with academic performance, and that even these associations were weak (O'Connor & Little, 2003). Finally, using a modified version of Schutte et al.'s (1998) measure, Austin, Evans, Magnus, and O'Hanlon (2007) found little association between EI or any of its subcomponents and the academic performance of second, third and fifth year medical students.

Similarly mixed findings are evident in reviewing the literature on EI and academic performance in school settings. Studies of pupils making the transition from primary to high school have shown that higher levels of self-report EI are associated with better academic performance (Jordan, McRorie & Ewing, 2010; Qualter, Whiteley, Hutchinson, & Pope, 2007), whilst a Malaysian study revealed a linear relationship between secondary school students' level of EI and academic performance (Abdullah, Habibah, Rahil, & Jegak, 2004). Moreover, using the EQ-i:Youth Version, moderate to strong relationships between EI and academic performance in high school pupils have been found where student groups who had achieved very different levels of success (successful, moderately successful and unsuccessful) were compared (Parker, Creque, et al., 2004).

There have also been promising findings with respect to the incremental validity of both trait and ability EI, with some studies concluding that EI can predict academic outcomes after controlling for personality and/or intelligence (Di Fabio & Palazzeschi, 2009; Gumora & Arsenio, 2002; Márquez, Martín, & Brackett, 2006; Mestre, Guil, Lopes, Salovey, & Gil-Olarte, 2006; Petrides, Furnham, et al., 2004).

However, as with studies of university and college students, there are also some indications that the relationship between EI and academic performance may differ across academic disciplines. Petrides, Furnham, et al. (2004) found that trait EI predicted performance in English but not maths or science, and Downey, Mountstephen, Lloyd, Hansen, & Stough (2008) found that the emotional management and control components of the Adolescent Swinburne University Emotional Intelligence Test (A-SUEIT; Luebbbers, Downey, & Stough, 2007) were related to mathematics and science performance (as categorized by performance lying at the 20th or 80th percentiles, or in the middle groups), whereas understanding emotions was more relevant for art and geography.

Also as in the studies conducted in college and university settings, there is some suggestion that the effects of EI may be indirect: in Petrides, Furnham, et al.'s (2004) study, trait EI did not directly affect academic performance, but moderated the effect of IQ, such that EI was a predictor of academic performance only for those with lower IQs. Other research has found relations between trait EI and English and maths scores, but these associations decreased to insignificance after controlling for the effects of age and non-verbal IQ (Mavroveli, Petrides, Sangareau, & Furnham, 2009).

Studies of academic giftedness and EI in school children also produce mixed results. Using the EQ-i: Youth Version (Bar-On & Parker, 2002), Schwean, Saklofske, Widdifield-Konkin, Parker and Kloosterman (2006) found that gifted schoolchildren scored higher on intrapersonal and adaptability subscales. Using the same EI measure, Lee and Olszewski-Kubilius (2006) also found that gifted pupils scored higher on adaptability than the non-gifted, but surprisingly also found that the gifted were lower than the non-gifted on stress management and that gifted females scored lower on total EI than the normative females. There is again evidence that results may depend on the measure of EI used: Zeidner, et al. (2005) found that gifted high school students scored higher than the non-gifted on the MSCEIT understanding emotions and managing emotions scales, but lower on the SEIS.



Possible explanations put forward by EI researchers for why EI may positively affect academic performance are that higher-EI individuals are able to determine whether certain emotions facilitate or impede the performance of tasks (Lam & Kirby, 2002), and that EI has beneficial effects on decision-making, planning and motivation (Lam & Kirby, 2002; Mayer & Salovey, 1997). Other possible explanations may be related to findings that EI scores are related to cognitive task persistence (Schutte, Schuettelz, & Malouff, 2001), and that individuals with emotional competencies are better-equipped to manage test-taking stress (Salovey, Bedell, Detweiler, & Mayer, 1999).

To summarize, results regarding the relationship between EI and academic performance are inconsistent. Whilst some researchers report moderate to strong relationships between the variables, others conclude that they are unrelated. Similarly, whilst a number of studies find evidence for the incremental validity of EI in predicting academic outcomes, others find that associations drop to non-significance when personality and intelligence are controlled. Possible explanation for divergent findings are that studies have introduced confounds by employing heterogeneous samples, and have employed different operationalisations of EI as well as of academic success. In relation to this latter point, it is noteworthy that some of the studies reviewed used continuous measures of GPA in their analyses, whilst others conducted group-based analyses which compared students of very different levels of academic success. As noted by Parker, Duffy, et al. (2005) who employed and compared both techniques, only the group-based analyses resulted in an effect of EI on academic performance.

Another possible explanation for seemingly contradictory results, in light of the findings outlined above, are that EI differentially impacts student subgroups (Petrides et al., 2004) and academic subjects (Downey et al., 2008; Petrides et al., 2004). Further, the effects of EI may sometimes be indirect rather than direct (Petrides et al., 2004; Rode et al., 2007) and therefore the possibility of mediating and moderating effects (Baron & Kenny, 1986) need to be considered.

#### 4.4.3 *EI and Social Relationships*

Starting university necessarily involves forming new relationships whilst maintaining, or modifying, existing ones, and successfully socially integrating into university life (Baker & Siryk, 1989; Christie, Munro, & Fisher, 2004; Tinto, 1975, 1993). Most models of EI involve some aspect of social abilities and understanding the emotions of others, and there is evidence that EI influences social relationships.

Both trait and ability EI measures have been found to be related to positive aspects of interpersonal functioning. For example, EI has been related to interpersonal sensitivity (Lopes, Salovey, Côté & Beers, 2005), pro-social tendencies (Lopes et al., 2005), higher quality interpersonal interactions, relationships and friendships (Austin, Saklofske, & Egan, 2005; Brackett, Warner, & Bosco, 2005; Ciarrochi et al., 2001; Lopes et al., 2004; Lopes, Salovey, & Straus, 2003; Mayer et al., 1999; Schutte et al., 2001) and social network size and quality (Austin et al., 2005). Moreover, studies conducted with university undergraduates specifically highlight how EI may be related to social behaviours that are crucial for effective academic functioning. For example, higher levels of EI are related to group behaviour effectiveness in first year business undergraduates (Rode et al., 2007) and also to communication skills (Austin et al., 2007).

Conversely, lower levels of EI have been associated with negative aspects of social functioning such as social withdrawal and loneliness (Chapman & Hayslip, 2005; Engelberg & Sjoberg, 2004; Pau, Croucher, Sohanpal, Muirhead, & Seymour, 2004; Saklofske et al., 2003), deviant behaviour (Brackett & Mayer, 2003) and having poorer quality friendships (for males only; Brackett, Mayer, & Warner, 2004).

Similar findings have emerged when EI and interpersonal functioning have been explored in school settings. Higher trait EI scores are associated with better peer relations (Ciarrochi et al., 2001) and better overall peer competence (Mavroveli et al., 2009) in addition to being linked to more specific positive outcomes such as teacher-rated positive behaviour (Mavroveli, Petrides, Shove, & Whitehead, 2008), prosocial or co-operative behaviour, and peer nominations for

leadership (Mavroveli, Petrides, Rieffe, & Bakker, 2007; Petrides, Sangareau, Furnham, & Frederickson, 2006). Low trait EI, on the other hand, has been shown to be related to various aspects of anti-social behaviour among school children such as conduct and peer problems, unauthorized absences, lateness and school exclusions (Mavroveli et al., 2008; Petrides et al., 2004; Petrides et al., 2006; Qualter et al., 2007).

In summary, consistent relations have been documented between EI and aspects of social functioning. Moreover, it should be noted that many of these associations remained significant after controlling for personality and/or intelligence (e.g., Lopes et al., 2004; Lopes et al., 2005; Rode et al., 2007). Overall, the results suggest that higher levels of EI are likely to smooth the social aspects of the transition to university life, and that lower levels of EI may constitute a risk factor in this regard.

#### *4.4.4 EI and Well-being*

As discussed earlier in this chapter, the transition to university makes considerable demands on the individual's emotional resources which may ultimately impact on various aspects of students' well-being. Aside from psychological, emotional and physical health being important in their own right, they are also important for academic success, with difficulties in these areas having detrimental effects on student performance (e.g., Haines, Norris, & Kashy, 1996).

The EI construct has strong theoretical and empirical links with aspects of health and well-being. For example, higher levels of EI have been shown to relate to aspects of positive psychological functioning such as optimism (Schutte et al., 1998), happiness and positive affect (Chamorro-Premuzic, Bennett, & Furnham, 2007; Ciarrochi et al., 2000; Gannon & Ranzijn, 2005; Martinez-Pons, 1997; Saklofske et al., 2003; Schutte, Malouff, Simunek, McKenley, & Hollander, 2002), self-esteem (Ciarrochi et al., 2001; Schutte et al., 2002) and life satisfaction (Austin et al., 2005; Bastian et al., 2005; Ciarrochi et al., 2000; Gannon & Ranzijn, 2005; Martinez-Pons, 1997; Mayer, Caruso, & Salovey, 2000; Saklofske et al., 2003).

Conversely, lower levels of EI have shown consistent associations with a number of the types of psychological difficulty often encountered during the transition to university. Both ability and trait EI have been related to greater levels of depression, depressive thoughts and suicidal ideation (Bar-On, 2000; Ciarrochi et al., 2002; Dawda & Hart, 2000; Goldenberg et al., 2006; Martinez-Pons, 1997; Mavroveli et al., 2007; Petrides, Pérez-González, et al., 2007; Saklofske et al., 2003; Schutte et al., 1998; Tsaousis & Nikolaou, 2005). EI has also been shown to be negatively related to anxiety (e.g., Bar-On, 2000; Bastian et al., 2005; Ciarrochi et al., 2001; Mikolajczak, Luminet, Leroy, & Roy, 2007). In a similar vein, EI is linked to stress and coping. It has been suggested that the ability to perceive, appraise and regulate emotions should be associated with being able to cope with stressful situations (Salovey et al., 1999). Consistent with this, empirical research has shown EI to be negatively related to stress (Brackett et al., 2004; Chapman & Hayslip, 2005; Ciarrochi et al., 2002; Gohm, Corser, & Dalsky, 2005; Pau, et al., 2004) and positively related to more adaptive coping and problem-solving abilities (Bastian et al., 2005; Mavroveli et al., 2007; Saklofske, Austin, Galloway, & Davidson, 2007). However, in an experimental study which aimed to induce stress, EI was related to worry and maladaptive coping, although no relationship was found between EI and stress (Matthews et al., 2006).

In relation to physical well-being, higher levels of trait EI have been negatively associated with somatic complaints (Mavroveli et al., 2007). Moreover, lower levels of both ability and trait EI have been related to engaging in behaviours detrimental to physical health such as drug, alcohol and tobacco use (Austin et al., 2005; Brackett et al., 2004; Mayer & Warner, 2003; Riley & Schutte, 2003; Trinidad & Johnson, 2002).

Two recent meta-analyses also substantiate the findings regarding the importance of EI for psychological and physical well-being. Based on 44 effect sizes, Schutte, Malouff, Thorsteinsson, Bhullar, and Rooke (2007) found a positive association between EI and better mental, psychosomatic and physical health, with trait EI being more strongly associated with mental health than ability measures. In a later meta-analysis intended to update Schutte et al.'s

(2007) study by including more recent and non-English studies, results broadly supported the findings of the previous meta-analysis (Martins, Ramalho, & Morin, 2010).

To summarize, links between both trait and ability EI and aspects of well-being have been consistently demonstrated in the literature. However, it should be noted that not all studies controlled for the effects of personality and intelligence, and for some variables (e.g., life satisfaction, anxiety and problem-solving; Bastian, Burns, & Nettlebeck, 2005) no incremental effects of EI were present after controlling for these variables.

#### *4.4.5 EI and Student Persistence (Retention)*

One indicator of how well students are adjusting to the demands of university life is whether they stay or drop out of their course. In the context of Baker and Siryk's (1989) model, student retention has been shown to be related to the institutional attachment facet of adjustment, with difficulties in this area often resulting in students leaving their course early.

Parker et al. (2006), exploring the relationship between EI and persistence in students transitioning from high school to higher education, found that when students who persisted into their second year of university were compared to a matched (on the basis of age, gender and ethnicity) sample of those who had withdrawn from their course, persisters scored higher on most emotional dimensions as measured by the EQ-i: short compared to the leavers. Similarly, in a study conducted in a UK post-1992 university, Qualter et al. (2009) found that students who remained enrolled at the start of their second year at university scored higher than those who had discontinued enrolment on all four dimensions of the Schutte Emotional Intelligence Scale.

Thus, whilst there is a relative paucity of research on the relationship between student retention and emotional intelligence, there exists some preliminary evidence that the two may be related.

#### *4.4.6 Studies Employing Multi-faceted Measures of University Adjustment*

Unfortunately, the few existing studies that explore how EI is related to university adjustment tend to focus on only a single aspect of the adjustment construct, such as academic performance or retention. Few studies of the relationship between EI and university adjustment have

employed multi-faceted measures of adjustment. As far as the author is aware, only one study has explored EI in relation to the SACQ. Findings from this Malaysian study were that the overall MSCEIT score correlated with all four SACQ dimensions and with the full-scale score (Abdullah et al., 2009a).

Chapman and Hayslip (1995) conducted a more thorough investigation of the relationship between EI and multiple facets of university adjustment using the SEIS and the College Adaptation Rating Scale (CARS; Zitzow, 1984) and four other measures representing key indicators of college adjustment. After controlling for personality and intelligence, the overall EI score was able to predict unique variance in only loneliness, although when SEIS subscales were employed, optimism/mood regulation and appraisal of emotions incrementally predicted variance in study habits and social stress respectively. Moreover, mediational analyses indicated that optimism/mood regulation was related to various criteria, both directly and indirectly.

More studies of this nature, which incorporate multiple facets of adjustment, are clearly necessary in order to more fully understand how predictors are related to all relevant aspects of the experience of transitioning to university.

#### **4.5 TEACHING EMOTIONAL COMPETENCIES**

Finally, it should be borne in mind, when considering the implications of the literature on EI and facets of student adjustment, that emotional skills may be amenable to change. The relationships demonstrated between EI and success in various domains, and favourable outcomes of EI-related training programs, has led to suggestions that emotional competencies can and should be taught (Bar-On, 2006; Di Fabio & Palazzeschi, 2009; Downey et al., 2008; Jordan et al., 2010; Lopes & Salovey, 2004; Maurer & Brackett, 2004; VanderVoort, 2006).

Furthermore, there is accumulating evidence to suggest that interventions can improve emotional and social competencies in school settings (Kelly, Longbottom, Potts, & Williamson, 2004; Kam, Greenberg, & Kusché, 2004; Qualter et al., 2007) and are associated with reduced

emotional and behavioural problems (Caplan et al., 1992; Curtis & Norgate, 2007; Topping, Holmes, & Bremner, 2000), better social and academic adjustment (Greenberg et al., 1995) and improved results on standardized achievement tests (Hawkins, Von Cleve, & Catalano, 1991; Qualter, et al., 2007).

Moreover, emotional competency interventions in higher education settings have not only shown positive outcomes in terms of increased EI levels, but have also been associated with a greater likelihood of students persisting with their course of study (Qualter et al., 2009; Schutte & Malouff, 2002).

It should be noted, however, that it is not uncommon for there to be potential methodological problems associated with many studies of social and emotional learning. Issues include the failure to assess long-term effects, the possible lack of equivalence between control and experimental groups, the sparse emotional content of some programs, and whether techniques based around other principles would generate similar effects (Qualter et al., 2007; Zeidner, Roberts, & Matthews, 2002). Regarding the latter, Qualter et al. (2007) note that additional uncontrolled variables such as aspects of teacher training, the presence of mentors, or other features of the school environment, may have influenced outcomes. In a related vein, where studies have failed to include an appropriate alternative intervention, the possibility exists that positive outcomes may be due to the so-called Hawthorne effect.<sup>20</sup> Moreover, Qualter et al. (2007) note that the statistical phenomenon of regression towards the mean cannot be discounted in interpreting why some students with initially low levels of emotional skills scored higher post-intervention in their study. Other researchers assert that in some studies, improvements in EI can only be *inferred*, in view of the fact that they employ outcome measures (e.g., reductions in aggressive behaviour) that are not EI *per se*, but variables assumed to be influenced by EI (Humphrey, Curran, Morris, Farrell, & Woods, 2007).

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<sup>20</sup> This phenomenon is named after research at the Hawthorne Works of the Western Electric Company. It is characterised by participants' behaviours or reported scores on outcome variables being modified merely due to their knowledge that they are taking part in an experiment, and responding accordingly. As such, the character of the intervention may be in itself of little import. The precise means by which the effect is mediated is a matter of some debate. See Adair (1984) for a review.

These considerations notwithstanding, the possibility remains that EI and emotional competencies may be an appropriate focus for interventions, in preference to other competing predictors of adjustment that are likely to be more stable and less mouldable attributes of individuals.

#### **4.6 CONCLUSIONS AND FUTURE DIRECTIONS**

The foregoing review of the links between emotions, emotional intelligence and the various facets of university adjustment indicate that emotional competencies and higher levels of EI may help students more easily manage the demands of the transition to university.

In light of this, a useful avenue for future research would be a more rigorous investigation of the relationship between EI and university adjustment. As results have been shown to differ depending on the measure of EI employed, future research should incorporate multiple measures of EI in order to indicate which conceptualisations of EI have greater utility in predicting university adjustment outcomes. Moreover, performing analyses at the EI subscale level will facilitate a more fine-grained analysis of how EI is related to adjustment and suggest whether EI subcomponents differentially influence the separate facets of adjustment.

Achieving these aims would necessarily involve the use of a multi-faceted measure of university adjustment such as the SACQ, so that individual components of adjustment, as well as those of EI, may be assessed within the same study. This is important given that few studies explore EI in relation to the multi-faceted definition of adjustment as put forward by Baker and Siryk (1989), and it is not thought that there is any existing research which explores how different EI models and subcomponents relate to the different aspects of transition.

Another requirement should be to assess the incremental validity of EI in predicting university adjustment after controlling for other theoretical covariates and competing predictors. In light of the conceptual overlap between EI and several other established predictors of university adjustment, and the utility of a new variable depending in part on its ability to explain variance



that cannot be explained by competing predictors (Hunsley & Meyer, 2003), this will be an important aspect of assessing the value of EI in this context.

Also, given Qualter et al.'s (2009) suggestion that the beneficial effects of EI on student retention may be mediated by the willingness to access sources of support, some exploration of which variables predict help-seeking would be an interesting avenue of research. The link between EI and willingness to seek help seems plausible in light of some preliminary work in the area (Ciarrochi & Deane, 2001), and that perceiving and recognizing emotions would be an important pre-requisite for decided that seeking help was appropriate and necessary. This is an important question given that universities now invest substantially in numerous means of student support, yet research suggests that the students who most need help do not proactively seek it out (Baker & Siryk, 1984).

Finally, following Parker et al. (2005) a useful extension of existing research would be to conduct more longitudinal work which extends beyond students' first year of university, in order that the more long- term effects of levels of emotional skills may be explored.

The results of this research would suggest whether training in emotional competencies would be a useful intervention for first year undergraduates, and also whether there would be utility in assessing EI as part of the pre-screening of incoming students for transition difficulties. Employing multiple measures of EI and performing analyses at the subscale level would inform decisions regarding the selection of EI instruments and which particular aspects of EI on which to focus screening and intervention activities.

## **CHAPTER 5: STUDY 2: ADJUSTMENT TO UNIVERSITY AND EMOTIONAL INTELLIGENCE**

### **5.1 INTRODUCTION**

A number of theoretical perspectives on emotional intelligence (EI), each with their own associated measurement instruments, currently co-exist (Mayer et al., 2008). Further, there is ongoing debate about how best to assess the EI construct, and evidence that different measures produce divergent results in empirical studies (e.g., Côté, Lopes, Salovey, & Miners, 2010; Zeidner et al., 2005).

The results of Study 1 suggest that EI as measured by the SEIS incrementally, although modestly, predicts university adjustment outcomes beyond demographics and competing psychosocial predictors. However, as discussed in previous chapters, the instrument has been criticised on a number of grounds, including its weak psychometric and structural properties, its relative lack of reverse-keyed items and its failure to appropriately map on to the Salovey and Mayer (1990) model of EI on which it is based (e.g., Petrides & Furnham, 2000; Saklofske et al., 2003). More generally, self-report instruments may be susceptible to socially-desirable response biases (Paulhus, 1991; Mikolajczak et al., 2007) and deliberate faking (Day & Carroll, 2008; Grubb & McDaniel, 2007). These criticisms of self-report measures question whether actual emotional abilities may be reliably determined via self-report methods. That empirical studies typically yield only modest associations between self-report and performance measures of EI (e.g., Davies et al., 1998; Furnham, 2001; Paulhus, Lysy, & Yik, 1998; Van Rooy et al., 2005) also suggests that factors other than emotional abilities influence self-report scores, and that the two approaches may be measuring different constructs.

In light of these considerations, it would be reasonable to expect that the different conceptualisations and measures of EI would differentially relate to the criterion of university adjustment, and that some may have greater utility than others in understanding and predicting adjustment outcomes. The question of how the various EI measures perform in comparison to non-EI predictors of adjustment also warrants attention. The results of research exploring these areas would have implications for the selection of instruments for use in pre-screening for

adjustment difficulties, and for the approaches to take for interventions. More generally, they would indicate whether it is actual emotional skills (cognitive abilities related to solving emotional problems; Mayer, Roberts, & Barsade, 2008), or self-perceptions of one's emotional skills (Petrides, Furnham, et al., 2007), that are most important for adjusting to university life.

Whilst the magnitudes of associations between EI and university adjustment are an important indicator of the utility of the various EI measures, they are not the whole story. It is important to conduct more thorough investigations of the validity of the EI construct, by testing its relations with criteria over and above other variables (Conte, 2005; Matthews et al., 2002). This is a question that has often been overlooked in the EI literature, with the result that many claims for the importance of the construct may have been overstated and misleading. The extent to which the various EI measures can explain adjustment to university over and above the effects of other study variables is important in a number of respects. First, it would suggest to what extent each measure is able to contribute something new and unique to the understanding of university adjustment. In practical terms, it would suggest the relative utility of adding each of the measures to test batteries, or training the associated emotional skills. With regard to EI theory, it would add further evidence to the debate regarding the distinctiveness of the various measures of EI from other individual difference variables.

Overall, if trait and ability EI measures are differentially associated with criteria, this would add to the debate regarding which conceptualisations of EI have the greater utility in predicting real-life outcomes, and provide further support for the ability/trait EI distinction.

## **5.2 CURRENT STUDY**

### *5.2.1 Overview*

A review of the literature yielded little research that explored EI in relation to university adjustment as a multi-faceted construct (cf. Abdullah et al, 2009a; Chapman & Hayslip, 1995) and no studies have compared multiple measures of EI with respect to this criterion. The present study therefore aims to substantiate and extend some of the findings of Study 1 by conducting a more comprehensive study of EI and university adjustment. It achieves this end

by incorporating a number of different measures of emotional intelligence, in addition to the established predictors of adjustment employed in Study 1. This will facilitate direct comparisons among EI measures, and indicate which measures of EI have the most relevance and utility with respect to predicting and understanding university adjustment.

The EI measures that will be employed are the Schutte Emotional Intelligence Scale (SEIS; Schutte et al., 1998), the Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF; Petrides & Furnham, 2006), the Emotional Self-Efficacy Scale (ESES; Kirk, Schutte, & Hine, 2008) and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer et al., 2002). The rationale for including these particular four EI instruments is based on their status as well-supported measures of EI that each take a substantially different approach to measuring the construct. The SEIS was chosen as it is a self-report measure with an ability model (i.e., Salovey & Mayer, 1990) basis and hence is based on a comparatively narrow conceptualisation of the EI construct. Although some shortcomings of this instrument have already been noted, it is being included for completeness and to facilitate comparisons with other measures. In contrast, the TEIQue is a self-report measure with a much broader theoretical basis encompassing a ‘constellation’ of self-perceived non-cognitive emotional competencies, and emotion-related aspects of personality. The third measure of EI, the ESES, was chosen due to its explicit focus on self-efficacy for emotional functioning. The authors suggest that although trait EI has been conceptualised as ‘emotional self-efficacy’ (Petrides & Furnham, 2003; Petrides et al., 2006) the inclusion of dispositions as well as self-perceptions means that self-efficacy is only one component of trait EI measures (Kirk et al., 2008). In contrast, the ESES seeks to capture respondents’ confidence in their ability to perform emotion-related tasks, derived from the ability models of Salovey and Mayer (1997), and Mayer et al. (2004). Finally, the MSCEIT was included as a performance test of ability EI, which requires respondents to solve emotion-related problems that have associated correct and incorrect responses.

As in Study 1, the present study explores relationships between EI and adjustment, the incremental validity potential of EI, and how other study variables attenuate the relationship between EI and adjustment. As before, most of these analyses are performed at both the global

and subscale level for adjustment and EI, in order to explore the utility of individual EI subcomponents with regard to the distinct facets of university adjustment. In this study, however, the comparative utility of the different EI measures are explored, and commonalities and differences in patterns of association investigated. The present research also incorporates a more stringent test of incremental validity than that conducted in Study 1, by controlling for personality and cognitive ability, as well as for other robust predictors of adjustment to university. This is also a far more stringent test of the incremental validity of EI than most others in the extant literature, which generally partial only IQ and personality when assessing the additional contribution of EI.

### 5.2.2 *Research Questions*

This study will address the following research questions:

1. Which study variables demonstrate the strongest associations with university adjustment?
2. How do the four EI variables compare with regard to their strength of association with adjustment?
3. What is the incremental validity potential of the different measures of EI?
4. Which study variables predict the most unique variance in university adjustment?
5. Do other study variables attenuate the relationship between EI and adjustment and is the pattern of attenuation similar across the different measures of EI?

### 5.2.3 *Hypotheses*

In light of the accumulating research demonstrating links between different conceptualisations of EI and a wide range of indices of adaptive functioning, positive associations were anticipated between all four measures of EI and university adjustment outcomes. Moreover, in light of the broader theoretical basis of the TEIQue (Petrides & Furnham, 2003), it is expected that this measure will have an advantage and show higher associations with adjustment criteria than other EI measures. The MSCEIT, on the other hand, is expected to demonstrate the most incremental power. This is due to the fact that its overlap with cognitive intelligence is modest,

whereas, in contrast, trait EI appears to share substantial overlap with personality and, to a lesser extent, with competing predictors of adjustment (e.g., Davies et al., 1998). Hypotheses regarding attenuation are based on similar considerations: it would be expected that much of the variance accounted for by trait EI measures would be removed once the influence of personality is accounted for. Then, based on the findings of Study 1, it is likely to be reduced further in the face of other predictors of university adjustment. The MSCEIT, on the other hand, would be expected to maintain its predictive power to a greater extent. No hypotheses are advanced with regard to which study variables will have the greatest utility in predicting adjustment outcomes: whilst social support was clearly the superior predictor of outcomes in Study 1, there is little empirical evidence to indicate how it will perform in the presence of personality, IQ, and multiple measures of EI.

### **5.3 METHOD**

#### *5.3.1 Design*

The study was a cross-sectional correlational design, with demographic data, psychosocial variables and measures of adaptation taken concurrently. Dependent variables were the SACQ total and subscale scores. Independent variables were the predictors listed below.

#### *5.3.2 Participants*

Participants were 260 first year full-time undergraduate students at a UK post-1992 university. Participants were recruited during first year psychology laboratory sessions. As a result of recruiting participants from the School of Psychology, there was a substantial gender bias: 58 (22.7%) males and 197 females (77.3%). Participants ranged in age from 18 to 52 years, with a mean age of 20.38 years ( $SD = 5.27$ ). For the reason advanced in Study 1, participants aged 21 or over were defined as mature students. Self-reported ethnic origins were as follows: White ( $n = 235$ ; 92.2%), Black/Black British ( $n = 5$ ; 2%), Asian/Asian British ( $n = 12$ , 4.7%), Chinese ( $n = 1$ , .4%) and other ( $n = 2$ , .8%). With regard to generational status, 160 (62.7%) identified themselves as first generation college students. Over one half ( $n = 148$ ; 58%) of students had moved away from home to attend university. The majority of students ( $n = 237$ , 92.9%) were single (never married), 7 (2.7%) were married, 6 (2.4%) students were cohabiting, 2 (.8%)

students were separated and 3 (1.2%) students were divorced. The response rate for this study was 100% as, in contrast to Study 1, time was allocated during teaching sessions for the completion of questionnaires (see Section 5.3.4, below, for full details of the procedure).

### 5.3.3 Materials

The study employed a questionnaire pack containing the following measures:

#### 5.3.3.1 Predictors

*Demographic variables.* The same demographic form as in Study 1 was used in this study. An additional section at the end of the form requested that respondents indicate from which of a number of sources they had sought help in relation to university problems.<sup>21</sup>

*IQ.* Set 1 of the Raven's Advanced Progressive Matrices (APM; Raven, Raven, & Court, 1994) was used as an indicator of mental ability/non-verbal intelligence.<sup>22</sup> This was included in order to control for cognitive intelligence, due to its theorised overlap with ability EI. Set 1 of the APM consists of 12 abstract analogical reasoning tasks of escalating difficulty. Set 1 covers the same intellectual processes that comprise the longer, 36-item, Set 2. Each item consists of a figural relations problem consisting of a 3 x 3 matrix of black and white figures that share common features across rows and columns; the ninth image is missing. The respondent is required to select from among eight alternatives the image that most logically completes the geometric pattern. In the current study, following Smith, Foster, and Stovin (1998), participants were given five minutes to complete the 12 items. The number of matrices correctly completed is recorded, thus possible scores range from 1-12. This test was chosen since the requirement was for a very brief measure of ability that takes only minutes to administer, due to time limitations and in order to reduce respondent burden. Moreover, a test was needed that could avoid ceiling effects and discriminate among a respondent group with higher than average intellectual abilities.<sup>23</sup> Set 1 of the APM was considered to be an appropriate measure of

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<sup>21</sup> Help-seeking data were obtained for use in a separate study that is beyond the scope of the present thesis.

<sup>22</sup> The APM is not included in the appendices of this thesis due to copyright considerations.

<sup>23</sup> The APM was developed in order to differentiate among respondents scoring at or above the 90<sup>th</sup> percentile on the SPM (Raven, Court, & Raven, 1983).

cognitive ability given these considerations (J. Raven, personal communication, November 2009).

*Personality.* Personality was assessed due to its theorised overlap with self-report measures of emotional intelligence. It was assessed using the IPIP-50 Big-Five Factor Markers (Goldberg, 1999). This is a 50-item scale measuring the five domains of the Five Factor Model, with ten items per domain. Each item comprises a sentence in fragment form. Example items are ‘Spend time reflecting on things’(Intellect, sometimes labelled ‘Openness to Experience’), ‘Am exacting in my work’ (Conscientiousness), ‘Don’t mind being the centre of attention’ (Extraversion), ‘Make people feel at ease’ (Agreeableness), ‘Seldom feel blue’ (Emotional Stability; this may be scored in the opposite direction and labelled Neuroticism). Participants indicate how accurately the statement describes how they usually are, using a 5-point Likert scale ranging from 1 (‘very inaccurate’) to ‘5’ (‘very accurate’). Half of the items are reverse-scored. A score for each personality domain is then obtained by summing the ten items relating to that domain. Scores from the five subscales may be summed to produce a total IPIP score. High correlations between IPIP scales and the associated scales of the NEO-Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992) demonstrate the scale’s concurrent validity (Gow, Whiteman, Pattie, & Deary, 2005). The scale is psychometrically sound; Buchanan, Johnson and Goldberg (2005) reported internal consistencies as follows: Openness = .82, Conscientiousness = .81, Extraversion = .86, Agreeableness = .77 and Neuroticism = .86. Cronbach’s Alphas for the present study were good, ranging from .78 for agreeableness to .89 for extraversion. Unlike many competing measures of personality, the IPIP is brief, in the public domain, and easily-accessible by download from the internet. See Appendix G for a copy of the IPIP.

*Emotional intelligence.* This was measured using four instruments: the Schutte Emotional Intelligence Scale, the Trait Emotional Intelligence Questionnaire, the Emotional Self-efficacy Scale, and the Mayer-Salovey-Caruso Emotional Intelligence Test. Details of these are as follows:



i) The Schutte Emotional Intelligence Scale (SEIS; Schutte et al., 1998) was one of the measures of trait EI. Details of the SEIS are as described in Study 1 (refer to Chapter 3, Section 3.3.3.1. Cronbach's alphas in the present study were good for overall EI (.86) and for the optimism/mood regulation (.78), appraisal (.82) and utilisation (.72) subscales, whereas the social skills alpha of .67 fell slightly short of the desired cut-off point of .70.

ii) The Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF; Petrides & Furnham, 2006) was another measure of trait EI. This is a 30-item short form of the full TEIQue. This conceptualisation of EI regards the construct as self-perceptions and traits located at the lower end of personality hierarchies (Petrides & Furnham, 2001). The 30 items of the TEIQue-SF were derived by taking two items from each of the 15 facets that comprise the full TEIQue. The short form was chosen due to time considerations and to reduce participant burden. The instrument taps four superordinate factors (well-being, self-control, emotionality and sociability) and a full-scale score. Note that the 15 facet scores generated by the full instrument are not available when using this short form. Although the TEIQue-SF was designed primarily to yield a global trait EI score, subsequent research has confirmed the suitability of the measure for assessing both global EI and the four factor scores (Petrides et al., 2010). In light of this, and following other studies (e.g. Arora et al., 2011) the present study computed and employed the four super-ordinate factors in addition to the global score. The scale employs a Likert response format, ranging from 1 ('completely disagree') to 7 ('completely agree'). A global TEIQue score is obtained by summing all the items on the scale. Four items contribute only to the global score and do not contribute to the factor scores. Petrides et al. (2010) report internal consistency coefficients of .87 for global trait EI, .74 for well-being, .59 for self-control, .66 for emotionality and .60 for sociability. Cronbach's alphas in the present study were good for the overall, well-being and self-control (.86, .84, and .70 respectively) scales but less good for emotionality and sociability (.66 and .68). A copy of the TEIQue-SF is presented in Appendix H.

iii) The Emotional Self-Efficacy Scale (Kirk et al., 2008) contains 32 items and is designed to measure the respondent's self-efficacy for adaptive emotional functioning. It is based on the

four-branch model of emotional intelligence put forward by Mayer and Salovey (1997) and Mayer et al. (2004) and uses Bandura's (2001) guidelines for assessing self-efficacy. Thus, items relate to confidence in the areas of (a) perceiving emotions in self and others, (b) using emotions to facilitate thought, (c) understanding emotions and emotional knowledge in the self and others, and (d) regulating emotions in the self and others. The instrument employs a Likert scale where 1 denotes 'not at all' and 5 'very' with regard to the respondent's confidence in their ability to carry out emotional tasks. Example items are 'Notice the emotion another person's body language is portraying' (perceiving emotions), 'Get into a mood that best suits the occasion' (facilitating thought), 'Realise what causes another person to feel a negative emotion (understanding emotions), 'Change your negative emotion to a positive emotion' (regulating emotions). Although items are theoretically linked to these four factors, the authors' factor analysis of the scale produced a one-component solution and thus they present it as a unifactorial scale, with an overall score computed by summing the 32 items. They report an internal consistency of .96 and two-week test-retest reliability of .85. Notwithstanding the one-factor CFA solution, the current study also employs the theoretical subscales in addition to the global ESES score. This decision was made since, as the subscales relate to the four dimensions of the model underlying the MSCEIT, this affords some degree of comparison to be made between ability and self-report scores of the same aspects of emotional intelligence. Cronbach's alphas in the present study were .94 for the global EI score, .84 for perceiving emotions, .87 for facilitating thought, .79 for understanding emotions and .86 for regulating emotions. See Appendix I for a copy of the ESES.

iv) The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer et al., 2002) is a 141-item measure of ability emotional intelligence based on the Mayer and Salovey (1997) model.<sup>24</sup> It generates an overall EI score, two area scores, four branch scores and eight tasks scores.<sup>25</sup> The 'perceiving emotions' branch is assessed through the 'faces' and 'pictures' tasks, for which respondents are asked to identify the emotions expressed in faces and in

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<sup>24</sup> The MSCEIT is not included in the appendices of this thesis due to copyright considerations.

<sup>25</sup> However, in common with much of the research using the MSCEIT, the present study will employ only the four branches and the MSCEIT global score in statistical analyses.

landscapes/designs respectively. The second branch, 'using emotions to facilitate thought', is assessed by the 'sensations' and 'facilitation' tasks. The 'sensations' task requires respondents to draw comparisons between emotions and tactile and sensory stimuli, whilst the 'facilitation' tasks requires them to state which emotions would best facilitate the achievement of a particular task (e.g., following a complicated food recipe). The third branch, 'understanding emotions', comprises the 'changes' and 'blends' tasks. The 'changes' task involves stating what situations cause emotions to increase or decrease in intensity, or what circumstances may cause transitions from one emotional state to another. The 'blends' task requires participants to understand how emotions combine and form more complex affective states (e.g., what emotion, from a number of alternatives, would be the most likely product of disgust combined with anger). Finally the fourth branch, 'managing emotions' is assessed by the 'emotion management' and 'emotion relationships' tasks. 'Emotion management' involves respondents stating the most effective means of preserving or improving a mood, in a series of hypothetical scenarios (e.g., on hearing that an undeserving colleague has received an award). 'Emotion relationships' again presents respondents with hypothetical scenarios. For each, they are required to select from a number of alternatives which actions would most effectively manage the emotions of others to achieve a desired outcome. The two area scores, for 'experiential' and 'strategic' EI, are derived from the first and second, and the third and fourth branches respectively. Response formats include Likert scales, semantic differentials and multiple choice questions. The measure may be scored using either general consensus scoring (respondents receive credit for their answers to the extent with which they concur with those of a large normative sample of respondents) or expert scoring (scores are based on the extent to which responses match those of a group of 'emotion experts'), with the consensus method being the more commonly used. The two methods yield highly similar ( $r > .90$ ) results (Mayer, Salovey, Caruso, & Sitarenios, 2003). Scores are expressed in the same way as IQ (i.e., with a mean score of 100 and a standard deviation of 15). Discriminant validity with respect to personality and cognitive intelligence has been demonstrated (Brackett & Mayer, 2003). Mayer et al. (2002) report a Cronbach's alpha for the full scale of .93 and from .76 to .90 for the branches. Test-retest reliability for the overall score was .86. Since the test uses a proprietary scoring key, it is not possible to state internal

consistencies for the current study. The global MSCEIT score and the four branch scores were employed in the present analyses. Responses were processed and scored by Multi-Health Systems, the test distributor, using the consensus method.

*Self-esteem.* Self-esteem was measured using the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965). Details of the measure are as in Study 1. Cronbach's coefficient alpha for this sample was .87.

*Self-efficacy.* Self-efficacy was measured using the 10-item Generalised Self-Efficacy Scale (GSES; Schwarzer & Jerusalem, 1995). Details of the measure are as in Study 1. Cronbach's alpha was .82 for the present sample.

*Attachment.* Attachment was measured using the Relationship Scales Questionnaire (RSQ; Griffin & Bartholomew, 1994). This is an omnibus measure of attachment that is an amalgam of other self-report measures. It comprises 30 items relating to feelings about close relationships, drawn from the following models of attachment: Hazan and Shaver's Adult Attachment Questionnaire (1987), Bartholomew and Horowitz' (1991) Relationship Questionnaire, and Collins and Read's (1990) Adult Attachment Scale. Only a subset of the items is analysed, depending on the model of attachment being employed. The current study uses the Bartholomew and Horowitz (1991) model, as in Study 1, and thus the same four categories (secure, fearful, preoccupied and dismissing) are generated. The instrument can be worded in terms of one's orientation to general, romantic or a specific relationship; in this study it was worded in terms of relationships in general. Only 18 items from this 30-item measure are required to generate these categories: scores for each of the four attachment styles were derived by summing the four (fearful attachment, preoccupied attachment) or five (secure attachment, dismissing attachment) corresponding items. Thus each respondent receives a score for each of the four attachment styles. As several items are used to derive each category, it overcomes some of the psychometric and data-analytic limitations of the measure employed in Study 1 (i.e., Bartholomew & Horowitz' [1991] Relationship Questionnaire, where attachment was measured using only one item per style). Participants respond on a 5-point Likert scale ranging

from 1 ('not at all like me') to 5 ('very much like me'). Example items are 'I find it easy to get emotionally close to others' (secure attachment), 'I am somewhat uncomfortable being close to others' (fearful attachment), 'I worry that others don't value me as much as I value them' (preoccupied attachment), 'It is very important to me to feel self-sufficient' (dismissing attachment). Bernardon, Babb, Hakim-Larson and Gragg (2011) report Cronbach alphas of .63 for secure attachment, .80 for fearful attachment, .76 for preoccupied attachment and .59 for dismissing attachment. Cronbach alphas for the present study were .54 for secure attachment, .76 for fearful attachment, .46 for preoccupied attachment and .75 for dismissing attachment. Low Cronbach values such as these are not entirely unexpected where scales have a small (< 10) number of items and in such cases it may be appropriate to also inspect mean inter-item correlations (Pallant, 2010). Values of .20 (secure), .43 (fearful), .19 (preoccupied) and .37 (dismissing) were found in the present sample. As Briggs and Cheek (1986) recommend an optimal range of .2 to .4, reliability for the preoccupied attachment style is only slightly lower than the suggested cut-point. See Appendix J for a copy of the RSQ.

*Locus of control.* Locus of control was measured using Levenson's (1981) multidimensional locus of control scale. Details are as in Study 1. In the present study, Cronbach alphas were .70 for the 'powerful others' subscale, .57 for the 'internal' and .71 for the 'chance' subscales. However, as stated in the previous study, only moderately high internal consistency estimates should be expected, since the items relate to a wide variety of situations.

*Social support.* Social support was measured using the Social Provisions Scale (SPS; Cutrona & Russell, 1987). Details are as in Study 1. In the present study internal reliability for the overall scale was .91. Reliabilities for the subscales were as follows: attachment .87, social integration .74, reassurance of worth .71, reliable alliance .82, guidance .87, and nurturance .69. Only the full-scale score was used in these analyses.

#### 5.3.3.2 Outcomes

*Adjustment to university.* Adjustment to university was assessed using the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989). Details are as in Study 1. Internal

reliabilities for the subscales and full scale score in the current study were good, ranging from .87 (personal-emotional subscale) to .95 (full scale score).

#### 5.3.4 Procedure

The study was approved by the Ethics Committee of the University of Central Lancashire's School of Psychology. Participants completed the questionnaires in groups of 20-30 during first year social psychology laboratory classes. Questionnaires were distributed at the start of these sessions, after a brief explanation of the nature and aims of the study. Participants signed a consent form to take part in the study and for the researchers to obtain their academic data from the University's computerized student records system (the latter for use in a later study). Although students were requested to complete the questionnaire as part of the teaching session, those who did not want their results to be included in the study were informed that they did not need to sign the form, and could place it in a container for confidential waste at the end of the session. Participants completed a paper-based questionnaire pack, which included a demographic questionnaire and measures of psychosocial constructs (i.e., emotional intelligence, locus of control, social support, self-esteem, self-efficacy and attachment) and adaptation to university. It was emphasized that participation was voluntary and that results would be kept confidential. Questionnaire instruments were completed one at a time, as a class. There was no time-limit for completion of any questionnaires apart from the APM, for which a five-minute time-limit was imposed. Participants returned the completed questionnaires to the lecturer at the end of the session.

## 5.4 RESULTS

### 5.4.1 Overview of the Statistical Analyses

All analyses were performed using SPSS version 17. Data were analysed by means of descriptive statistics, product moment correlational analyses and hierarchical multiple regressions. Correlational analyses were performed to test for associations between EI and adjustment, and to illuminate any other interesting associations among study variables. Hierarchical multiple regressions were conducted to explore the relative importance of the predictors of adjustment and the incremental validity of study variables. These analyses were

conducted at both the global and subscale level for EI, in order to explore the independent role of the EI subcomponents. Hierarchical regressions were also used to address the question of attenuation of the relationship between EI and adjustment, although for these analyses EI was explored only as a global construct. The utility of the EI instruments was assessed on the basis of the following considerations, derived from the analyses outlined above: a) correlations between the EI instrument and adjustment criteria, b) the increase in the squared multiple correlation co-efficient at the final step when the EI instrument was added (incremental predictive validity), and, c) relative sizes of squared semi-partial correlation co-efficients (the size of the unique prediction of variance in criteria).

An alpha level of .05 was set for hypothesis testing. Marital, socioeconomic, generational and residential statuses were collapsed into dichotomous category variables (viz., married/cohabiting vs. not married/cohabiting, professional vs. non-professional, some vs. no parental higher education experience, moved away from home vs. not moved).

#### 5.4.2 *Data Screening*

Missing data on psychosocial measures were replaced using person mean substitution. The description of this method and rationale for its use are outlined in Study 1 (see Chapter 3, Section 3.4.2). Scatterplots, histograms, normal P-P plots and correlation coefficients were inspected to check the assumptions of normality, linearity, homoscedasticity and multicollinearity. Outliers were dealt with according to the procedures outlined in Tabachnick and Fidell (2007). Screening for univariate outliers identified 21 data points across 13 variables with z-scores  $> 3.29$ . The impact of these was reduced by amending scores to one above or below the most extreme non-outlying score. Multivariate outliers were detected using regression analysis to compute Mahalanobis distance ( $p < .001$ ). Five cases were identified as multivariate outliers and were deleted, leaving a final usable sample of 255. After dealing with outliers, all variables appeared to be broadly normally distributed apart from some negative skew on one of the outcome variables (institutional attachment). As skewness is not considered a significant problem in large samples (Tabachnick & Fidell, 2007) it was concluded that data were suitable for parametric analyses.

### 5.4.3 Preliminary Analyses

Descriptive statistics (means and standard deviations) and inter-measure correlations for all study variables were calculated and are presented in *Table 5.1*, overleaf.



Table 5.1: Means (M), Standard Deviations (SD) and Inter-measure Correlations for the SACQ and the Predictor Variables (N=255)

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1 SACQ Total	413.02	68.27	–																									
2 SACQ-A	145.69	25.54	.85 ***	–																								
3 SACQ-S	123.83	25.87	.82 ***	.49 ***	–																							
4 SACQ-P	85.48	21.91	.77 ***	.54 ***	.46 ***	–																						
5 SACQ-I	105.68	19.05	.84 ***	.62 ***	.87 ***	.44 ***	–																					
6 Age	20.38	5.27	.11	.15 *	.02	.06	.11	–																				
7 Gender	.23	.42	.00	-.10	.02	.11	-.05	.08	–																			
8 Marital Status	.05	.22	.07	.12 *	-.05	.07	.02	.45 ***	-.04	–																		
9 Dependents	.09	.29	.09	.16 *	.00	.01	.11	.66 ***	-.07	.55 ***	–																	
10 SES	.32	.47	.02	.01	-.01	.06	-.05	-.07	.09	.07	-.07	–																
11 Residence	.61	.49	.01	-.07	.12	-.09	.12	-.34 ***	.10	-.26 ***	-.34 ***	.03	–															
12 Generation	.37	.48	.00	.00	-.01	.01	-.04	-.13 *	.03	.01	-.04	.36 ***	.05	–														
13 IQ	9.42	1.69	-.04	-.05	-.02	-.08	.03	-.02	.05	.00	-.08	.06	.05	.01	–													
14 Extraversion	33.26	7.49	.34 ***	.20 **	.50 ***	.13 *	.35 ***	.04	-.05	-.02	.02	-.02	.01	.02	-.09	–												
15 Agreeableness	40.12	5.13	.30 ***	.28 ***	.27 ***	.16 *	.26 ***	.13 *	-.25 ***	.10	.15 *	.14 *	-.07	.12	.07	.24 ***	–											
16 Conscientiousness	32.11	6.25	.32 ***	.41 ***	.14 *	.24 ***	.14 *	.15 *	-.07	.15 *	.15 *	.01	-.09	.13 *	-.13 *	.09	.17 **	–										
17 Em. Stability	28.56	7.43	.50 ***	.35 ***	.33 ***	.63 ***	.30 ***	.13 *	.17 **	.05	.05	.06	-.01	.03	.00	.18 **	.12	.14 *	–									
18 Intellect	34.93	6.09	.13 *	.21 ***	.11	-.06	.12 *	.07	.24 ***	.03	.01	.12	.12	.19 **	.13 *	.25 ***	.09	.17 **	.07	–								
19 Personality	168.98	18.52	.57 ***	.51 ***	.50 ***	.41 ***	.42 ***	.18 **	.03	.10	.12	.10	-.01	.16 *	-.02	.66 ***	.51 ***	.54 ***	.58 ***	.54 ***	–							
20 Attach-S	17.34	3.27	.43 ***	.31 ***	.41 ***	.39 ***	.30 ***	.00	.16 **	.01	.00	.05	-.03	.05	.02	.44 ***	.29 ***	.05	.36 ***	.19 **	.48 ***	–						
21 Attach-F	10.96	3.50	-.36 ***	-.23 ***	-.32 ***	-.36 ***	-.25 ***	.00	-.08	-.05	.06	.03	-.06	.09	.00	-.20 **	-.21 ***	-.06	-.41 ***	.06	-.30 ***	-.59 ***	–					
22 Attach-P	11.17	2.62	-.19 **	-.06	-.20 **	-.23 ***	-.15 *	-.08	-.09	-.02	-.04	-.04	.04	.05	.09	-.06	.10	-.04	-.27 ***	.00	-.12	-.18 **	.17 **	–				
23 Attach-D	15.02	3.71	-.09	-.06	-.06	-.11	-.05	.00	.09	.02	.05	.06	-.06	.11	.00	-.10	-.24 ***	.09	-.08	.12 *	-.07	-.21 ***	.43 ***	-.39 ***	–			
24 LOC-I	31.51	6.15	.33 ***	.28 ***	.29 ***	.22 ***	.27 ***	.14 *	.13 *	.02	.10	-.12	.08	.09	.04	.20 **	.19 **	.40 ***	.24 ***	.33 ***	.47 ***	.29 ***	-.18 **	-.11	.11	–		
25 LOC-P	18.95	7.13	-.28 ***	-.29 ***	-.16 **	-.25 ***	-.17 **	-.12	-.10	-.15 *	-.10	-.02	-.02	-.07	-.02	-.17 **	-.08	-.06	-.24 ***	-.09	-.24 ***	-.28 ***	.22 ***	.18 **	.06	-.02	–	

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
26 LOC-C	21.99	7.74	-.34 ***	-.32 ***	-.23 ***	-.31 ***	-.20 **	-.17 **	-.15 *	-.14 *	.00	-.04	-.06	.02	.00	-.21 ***	-.07	-.22 ***	-.36 ***	-.21 ***	-.39 ***	-.33 ***	.27 ***	.18 **	.03	-.33 ***
27 Self-esteem	18.57	4.71	.54 ***	.45 ***	.40 ***	.52 ***	.36 ***	.11	.09	.10	.09	-.04	.02	.04	-.05	.31 ***	.10	.28 ***	.54 ***	.10	.49 ***	.50 ***	-.44 ***	-.23 ***	-.07	.31 ***
28 Self-efficacy	29.65	3.80	.36 ***	.34 ***	.29 ***	.23 ***	.25 ***	.10	.24 ***	.05	.08	.11	.04	.17 **	.06	.22 ***	.10	.25 ***	.33 ***	.53 ***	.51 ***	.30 ***	-.06	-.19 **	.22 ***	.44 ***
29 Support	81.99	8.90	.47 ***	.36 ***	.46 ***	.36 ***	.39 ***	.08	-.12 *	.08	.08	-.03	-.01	.06	-.05	.47 ***	.49 ***	.23 ***	.26 ***	.12	.54 ***	.61 ***	-.47 ***	-.06	-.23 ***	.30 ***
30 SEIS Total	119.86	11.72	.41 ***	.37 ***	.34 ***	.29 ***	.28 ***	.10	.04	.06	.07	.08	-.05	.22 ***	-.03	.36 ***	.35 ***	.34 ***	.35 ***	.38 ***	.63 ***	.45 ***	-.27 ***	-.07	-.02	.46 ***
31 SEIS-O	31.51	4.76	.47 ***	.40 ***	.36 ***	.42 ***	.31 ***	.01	.04	.04	.04	.07	-.04	.12 *	-.11	.26 ***	.18 **	.26 ***	.48 ***	.17 **	.49 ***	.39 ***	-.33 ***	-.23 ***	.04	.36 ***
32 SEIS-A	33.19	4.62	.19 **	.21 ***	.11	.14 *	.12	.08	.07	.08	.03	.07	-.02	.18 **	-.01	.21 ***	.16 *	.28 ***	.19 **	.35 ***	.41 ***	.28 ***	-.14 *	-.05	-.01	.35 ***
33 SEIS-S	40.96	4.28	.31 ***	.28 ***	.32 ***	.15 *	.23 ***	.12	-.05	.05	.09	.08	-.06	.19 **	.06	.42 ***	.51 ***	.30 ***	.16 *	.33 ***	.58 ***	.37 ***	-.20 **	.08	-.08	.34 ***
34 SEIS-U	14.17	2.37	.14 *	.14 *	.15 *	.04	.09	.07	.06	-.02	.07	-.04	-.02	.10	-.05	.13 *	.15 *	.11	.08	.28 ***	.25 ***	.21 ***	-.02	.06	-.01	.27 ***
35 TEIQue Total	144.49	20.04	.59 ***	.49 ***	.48 ***	.52 ***	.42 ***	.19 **	.05	.17 **	.14 *	.11	-.03	.14 *	-.06	.45 ***	.42 ***	.44 ***	.58 ***	.31 ***	.78 ***	.57 ***	-.43 ***	-.17 **	-.08	.46 ***
36 TEIQue-W	31.91	5.88	.54 ***	.40 ***	.48 ***	.49 ***	.40 ***	.11	-.02	.09	.10	.10	-.03	.03	-.10	.40 ***	.27 ***	.20 **	.46 ***	.07	.51 ***	.53 ***	-.43 ***	-.19 **	-.09	.31 ***
37 TEIQue-SC	24.69	5.86	.47 ***	.37 ***	.30 ***	.53 ***	.28 ***	.22 ***	.16 *	.12	.14 *	.04	-.01	.11	-.01	.14 *	.23 ***	.29 ***	.74 ***	.19 **	.58 ***	.37 ***	-.37 ***	-.27 ***	.02	.33 ***
38 TEIQue-E	39.96	6.88	.26 ***	.24 ***	.22 ***	.20 **	.18 **	.11	-.11	.15 *	.09	.13 *	-.05	.15 *	.01	.25 ***	.54 ***	.31 ***	.21 ***	.21 ***	.51 ***	.40 ***	-.34 ***	.11	-.25 ***	.27 ***
39 TEIQue-S	28.95	5.49	.27 ***	.21 ***	.27 ***	.18 **	.23 ***	.07	.19 **	.07	.00	.07	.04	.10	.02	.48 ***	.07	.28 ***	.20 **	.42 ***	.53 ***	.36 ***	-.08	-.16 *	.08	.36 ***
40 ESES Total	109.82	18.01	.36 ***	.27 ***	.30 ***	.33 ***	.23 ***	.10	.08	.11	.07	.10	.04	.18 **	.00	.31 ***	.28 ***	.29 ***	.43 ***	.36 ***	.59 ***	.40 ***	-.26 ***	-.16 *	.00	.47 ***
41 ESES-P	29.85	4.99	.21 ***	.20 **	.16 *	.14 *	.13 *	.09	.07	.15 *	.06	.12	.07	.16 *	.05	.24 ***	.14 *	.25 ***	.20 **	.37 ***	.42 ***	.26 ***	-.11	-.09	.05	.40 ***
42 ESES-R	26.56	4.97	.38 ***	.27 ***	.34 ***	.34 ***	.26 ***	.15 *	.09	.05	.13 *	.09	.03	.17 **	-.03	.31 ***	.34 ***	.25 ***	.50 ***	.33 ***	.61 ***	.40 ***	-.25 ***	-.19 **	-.01	.39 ***
43 ESES-F	25.09	5.69	.33 ***	.21 ***	.32 ***	.33 ***	.20 **	.03	.11	.04	.03	.04	.03	.14 *	-.04	.30 ***	.19 **	.21 ***	.45 ***	.33 ***	.53 ***	.40 ***	-.28 ***	-.20 **	.03	.43 ***
44 ESES-U	28.35	5.27	.32 ***	.26 ***	.23 ***	.31 ***	.20 **	.09	.01	.15 *	.05	.10	.02	.13 *	.03	.22 ***	.28 ***	.28 ***	.32 ***	.22 ***	.46 ***	.30 ***	-.25 ***	-.06	-.07	.41 ***
45 MSCEIT Total	93.34	11.99	.25 ***	.21 ***	.20 **	.20 **	.24 ***	-.17 **	.11	-.02	-.18 **	.08	.09	-.03	.26 ***	.02	.18 **	.05	.17 **	.18 **	.20 **	.15 *	-.17 **	.00	-.05	.11
46 MSCEIT-P	95.18	12.10	.22 ***	.14 *	.19 **	.16 *	.27 ***	-.06	.11	-.01	-.06	.03	.03	-.04	.19 **	-.01	.00	-.05	.12	.13 *	.07	.04	-.05	-.09	.05	.06
47 MSCEIT-F	97.69	13.67	.24 ***	.21 ***	.16 *	.23 ***	.18 **	-.06	.15 *	.04	-.11	.13 *	.09	.03	.23 ***	.05	.20 **	.07	.22 ***	.11	.22 ***	.21 ***	-.20 **	.03	-.09	.11
48 MSCEIT-U	103.13	14.96	-.03	.00	-.06	.01	-.05	-.32 ***	.18 **	-.12	-.29 ***	.02	.22 ***	.00	.19 **	-.05	.04	-.01	.04	.20 **	.07	.05	-.09	.13 *	-.05	-.02
49 MSCEIT-M	92.52	9.97	.23 ***	.19 **	.24 ***	.16 *	.19 **	-.21 ***	.13 *	-.09	-.22 ***	.12	.05	.00	.13 *	.06	.16 **	.08	.11	.12 *	.18 **	.23 ***	-.21 ***	-.04	-.08	.12

	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	
25 LOC-P	-																									
26 LOC-C	.33 ***	-																								
27 Self-esteem	-.25 ***	-.35 ***	-																							
28 Self-efficacy	-.15 *	-.24 ***	.37 ***	-																						
29 Support	-.21 ***	-.23 ***	.47 ***	.21 ***	-																					
30 SEIS Total	-.12	-.25 ***	.49 ***	.49 ***	.44 ***	-																				
31 SEIS-O	-.10	-.21 ***	.63 ***	.42 ***	.38 ***	.75 ***	-																			
32 SEIS-A	-.18 **	-.29 ***	.20 **	.33 ***	.21 ***	.72 ***	.29 ***	-																		
33 SEIS-S	-.05	-.14 *	.32 ***	.37 ***	.45 ***	.82 ***	.47 ***	.47 ***	-																	
34 SEIS-U	.05	.02	.20 **	.29 ***	.19 **	.57 ***	.34 ***	.22 ***	.41 ***	-																
35 TEIQue Total	-.31 ***	-.38 ***	.66 ***	.51 ***	.60 ***	.71 ***	.64 ***	.46 ***	.59 ***	.26 ***	-															
36 TEIQue-W	-.19 **	-.25 ***	.76 ***	.34 ***	.59 ***	.51 ***	.67 ***	.13 *	.39 ***	.23 ***	.76 ***	-														
37 TEIQue-SC	-.23 ***	-.36 ***	.54 ***	.45 ***	.28 ***	.46 ***	.52 ***	.30 ***	.29 ***	.14 *	.75 ***	.51 ***	-													
38 TEIQue-E	-.21 ***	-.16 *	.22 ***	.20 **	.48 ***	.57 ***	.28 ***	.48 ***	.60 ***	.20 **	.68 ***	.31 ***	.33 ***	-												
39 TEIQue-S	-.29 ***	-.28 ***	.30 ***	.43 ***	.29 ***	.44 ***	.25 ***	.42 ***	.38 ***	.17 **	.59 ***	.27 ***	.26 ***	.26 ***	-											
40 ESES Total	-.12 *	-.23 ***	.42 ***	.52 ***	.36 ***	.71 ***	.54 ***	.62 ***	.50 ***	.29 ***	.68 ***	.44 ***	.55 ***	.45 ***	.46 ***	-										
41 ESES-P	-.10	-.26 ***	.24 ***	.42 ***	.21 ***	.55 ***	.26 ***	.71 ***	.37 ***	.16 *	.47 ***	.19 **	.33 ***	.37 ***	.47 ***	.82 ***	-									
42 ESES-R	-.15 *	-.17 **	.40 ***	.53 ***	.35 ***	.62 ***	.53 ***	.45 ***	.47 ***	.27 ***	.68 ***	.47 ***	.63 ***	.41 ***	.39 ***	.87 ***	.57 ***	-								
43 ESES-F	-.08	-.15 *	.49 ***	.49 ***	.35 ***	.66 ***	.65 ***	.41 ***	.45 ***	.36 ***	.63 ***	.53 ***	.52 ***	.32 ***	.38 ***	.87 ***	.55 ***	.78 ***	-							
44 ESES-U	-.09	-.23 ***	.31 ***	.35 ***	.32 ***	.59 ***	.39 ***	.59 ***	.44 ***	.19 **	.53 ***	.30 ***	.41 ***	.44 ***	.32 ***	.87 ***	.72 ***	.63 ***	.63 ***	-						
45 MSCEIT Total	-.18 **	-.17 **	.11	.11	.16 *	.11	.05	.14 *	.09	-.01	.22 ***	.13 *	.16 *	.18 **	.18 **	.08	.15 *	.05	.00	.10	-					
46 MSCEIT-P	-.15 *	-.16 *	.11	.11	.11	-.01	.02	.00	-.01	-.05	.07	.10	.06	-.04	.09	-.01	.02	.01	-.04	.00	.74 ***	-				
47 MSCEIT-F	-.17 **	-.13 *	.16 *	.13 *	.17 **	.12	.10	.12	.11	-.02	.23 ***	.16 *	.20 **	.17 **	.13 *	.13 *	.17 **	.11	.05	.14 *	.79 ***	.49 ***	-			
48 MSCEIT-U	-.07	-.05	-.06	.02	-.04	.01	-.07	.13 *	-.03	-.01	.06	-.07	.08	.12 *	.12	.01	.07	-.02	-.04	.02	.61 ***	.20 **	.35 ***	-		
49 MSCEIT-M	-.13 *	-.15 *	.08	.09	.16 **	.17 **	.08	.15 *	.17 **	.07	.24 ***	.14 *	.11	.22 ***	.21 ***	.10	.15 *	.05	.06	.11	.69 ***	.28 ***	.46 ***	.38 ***	-	

Note. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . SACQ Total = Overall adjustment; SACQ-A = Academic adjustment; SACQ-S = Social adjustment; SACQ-P = Personal-emotional adjustment; SACQ-I = Institutional attachment; Gender was coded 0 = female, 1 = male; marital status was coded 0 = not married nor cohabiting, 1 = married or cohabiting; dependants was coded 0 = has no dependants, 1 = has dependants; SES was coded 0 = non-professional occupation, 1 = professional occupational; residence was coded 0 = student lives in own or parents' house, 1 = lives in student halls or house; Generation was coded 0 = neither parent has HE qualifications, 1 = one or both parents have HE qualifications; Attach-S = secure attachment; Attach-F = fearful attachment; Attach-P = pre-occupied attachment; Attach-D = dismissing attachment; LOC-I = internal locus of control; LOC-P = 'powerful others' locus of control; LOC-C = 'chance' locus of control; Support = social support; SEIS Total = overall emotional intelligence; SEIS-O = Emotional intelligence: optimism and mood regulation; SEIS-A = Emotional intelligence: appraisal of emotions; SEIS-S = Emotional intelligence: social skills; SEIS-U = Emotional intelligence: utilisation of emotions; TEIQue-W = Emotional intelligence: well-being; TEIQue-SC = Emotional intelligence: self-control; TEIQue-E = Emotional intelligence: emotionality; TEIQue-S = Emotional intelligence: sociability; ESES-P = Emotional intelligence: perceiving emotions; ESES-R = Emotional intelligence: regulate emotions; ESES-F = Emotional intelligence: facilitate emotions; ESES-U = Emotional intelligence: understanding emotions; MSCEIT-P = Emotional intelligence: perceiving emotions; MSCEIT-F = Emotional intelligence: facilitating emotions; MSCEIT-U = Emotional intelligence: understanding emotions; MSCEIT-M = Emotional intelligence: managing emotions. Higher scores on psychological variables are indicative of higher levels of the construct.

As shown in *Table 5.1*, there were strong associations among global trait EI scores ( $r_s = .68$  to  $.71$ ), whilst the MSCEIT was only weakly related to trait EI measures ( $r_s = .08$  to  $.22$ ). There were only weak associations between cognitive ability and the MSCEIT (global MSCEIT score:  $r = .26$ ; MSCEIT subscales:  $r_s = .13$  to  $.23$ ), and no associations between cognitive ability and trait EI ( $r_s = -.03, -.06$  and  $.00$  for global SEIS, TEIQue and ESES respectively). Associations between trait EI and personality were moderate ( $r_s = .36, .44, .33$  for the SEIS, TEIQue and ESES respectively) and very weak for ability EI and personality ( $r = .12$ ).

Whilst trait EI measures were generally moderately associated with a number of established predictors of university adjustment (*viz.*, secure attachment, internal LOC, self-esteem, self-efficacy and social support) the MSCEIT was unrelated to predictors of adjustment.

With regard to EI and university adjustment, the TEIQue demonstrated the strongest associations with criteria ( $r_s = .42$  to  $.59$  for the five facets of adjustment). The MSCEIT demonstrated the weakest associations ( $r_s = .20$  to  $.25$ ). The SEIS and ESES also demonstrated relatively low associations ( $r_s = .28$  to  $.41$ , and  $r_s = .23$  to  $.36$  respectively). Whilst the TEIQue had the strongest relations with criteria overall (including in comparison with non-EI study variables), self-esteem demonstrated similarly high associations for some aspects of adjustment ( $r_s = .36$  to  $.54$ ). Emotional stability, attachment security, self-esteem and social support also demonstrated respectable associations with at least some facets of adjustment ( $r_s = .30$  to  $.63, .30$  to  $.43, .36$  to  $.54$  and  $.36$  to  $.47$  respectively across the five university adjustment scores).

#### *5.4.4 Relative Importance of Predictors and Incremental Validity Potential of EI*

As hierarchical multiple regression is the approach typically employed to establish incremental importance (Tabachnick & Fidell, 2007) this method was used to examine the independent contributions to adjustment of various demographic and psychosocial variables. A series of hierarchical multiple regression analyses were conducted. The five SACQ scores were the criterion variables (academic adjustment, social adjustment, personal-emotional adjustment, institutional attachment and the full-scale score). Predictors were background demographic variables (marital status, residential status, gender, generational status, SES, dependants and

age), attachment style (secure, dismissing, preoccupied and fearful), self-esteem, locus of control (internal, 'powerful others' and 'chance'), social support and EI. Analyses were repeated for the five criterion variables, first, employing the EI full scale score at the final step and second, the EI subscale scores. As with Study 1, this was in order to test the incremental validity of EI at varying levels of instrument bandwidth and fidelity (Cronbach, 1970) and to explore whether the individual EI subcomponents were differentially related to the separate facets of university adjustment. These analyses were run separately for each different EI instrument, resulting in a total of 40 multiple regressions being conducted in all. Missing data were handled using the listwise deletion method in all regression analyses.

Independent variables were added to the regression model in the following five steps: 1) background demographic variables, IQ and personality; 2) attachment style; 3) self-esteem, self-efficacy, locus of control; 4) social support; and 5) EI. The rationale for this hierarchy was presented in Study 1 (See Chapter 3, Section 3.4.8). As noted in the previous study, a significant change in  $R^2$  at the final step denotes that emotional intelligence is a unique predictor of adjustment (Cohen & Cohen, 1983).

Results below are described in full for the Schutte scale. As Steps 1 to 4 results are the same for all analyses, only Step 5 and overall model results are presented for the TEIQue, ESES and MSCEIT. Similarly, non-EI correlates of adjustment variables were the same across all EI measures and therefore are listed only for the Schutte.

#### 5.4.4.1 *Schutte Emotional Intelligence Scale*

##### 5.4.4.1.1 Overall Adjustment

Overall adjustment was correlated with the following non-EI study variables: all five personality subscales and the overall personality score; secure, fearful and preoccupied attachment, all three locus of control orientations, self-esteem, self-efficacy and social support.

With regard to the Schutte scale, overall adjustment was correlated with the global Schutte scale and all four Schutte subscales. For full details of these and all subsequent correlation results see Table 5.1

Using the global Schutte score, the model was significant and able to explain 49.2% of the variance in overall adjustment,  $F(24, 212) = 8.56, p < .001$ . All apart from the final block contributed a significant amount of variance to the model. In the final model, adjustment was predicted by conscientiousness, emotional stability, self-esteem and social support, with higher levels of each being positively associated with adjustment.

When the regression was re-run with Schutte subscale scores entered at Step 5, this again did not predict significant variance at the final step. The model explained slightly more variance in overall adjustment (49.8%) than when only the global SEIS score was used,  $F(27, 209) = 7.68, p < .001$ . In the final model, conscientiousness, emotional stability and social support positively predicted overall adjustment.

#### 5.4.4.1.2 Academic Adjustment

Non-EI study variables correlated with academic adjustment were as follows: all five personality subscales and the overall personality score, marital status, dependants, age, secure and fearful attachment, all three LOC orientations, self-esteem, self-efficacy and social support. The global Schutte score and all four Schutte subscales were also correlated with academic adjustment.

The model using the global Schutte score was significant and explained 43.6% of the variance in academic adjustment,  $F(24, 212) = 6.82, p < .001$ . Only steps 1 and 3 contributed additional significant variance to the model. In the final model, conscientiousness, gender (being female), generational status (being first generation), and self-esteem predicted higher levels of adjustment, and LOC (powerful others) predicted lower levels.

Adding Schutte subscales at Step 5 similarly did not add significant variance to the model. The total variance explained by the model was 44.7%,  $F(27, 209) = 6.24, p < .001$ . In the final model, conscientiousness, gender (being female) and generational status (being first generation) predicted better academic adjustment and LOC (powerful others) predicted worse adjustment.

#### 5.4.4.1.3 Social Adjustment

Social adjustment was correlated with all five personality subscales except intellect, and the full scale personality score; secure attachment, fearful and preoccupied attachment, all three LOC orientations, self-esteem, self-efficacy and social support. Social adjustment was also correlated with the global Schutte score and all the Schutte subscales except appraisal of emotions.

The model was significant and explained 42.8% of the variance in social adjustment,  $F(24, 212) = 6.62, p < .001$ . Steps 1, 2 and 4 contributed significant variance to the model. In the final model, extraversion, residence arrangements (living in student accommodation), and social support positively predicted social adjustment.

Adding EI components separately at Step 5 also did not add a significant amount of variance. The model as a whole explained slightly more variance (43.7%) than when the global EI score was used,  $F(27, 209) = 6.01, p < .001$ . In the final model, the same variables predicted higher levels of adjustment as when the global score was used.

#### 5.4.4.1.4 Personal-emotional Adjustment

Personal-emotional was correlated with four personality subscales (extraversion, agreeableness, conscientiousness, emotional stability) and the overall personality score; secure, fearful and preoccupied attachment, all three LOC orientations, self-esteem, self-efficacy and social support. It was also correlated with the global Schutte score and all four Schutte subscales except utilisation of emotions.

The regression model was significant and explained 54.3% of the variance in personal-emotional adjustment,  $F(24, 212) = 10.50, p < .001$ . For this aspect of adjustment, steps 1, 2 and 4 all contributed significant variance to the model. In the final model, conscientiousness, emotional stability, self-esteem and social support were significant positive predictors of adjustment and intellect a negative predictor.

Using the Schutte subscales did not contribute a significant increment in variance when controlling for variables entered in Steps 1 to 4. The model as a whole explained 54.3% of the

variance in personal-emotional adjustment,  $F(27, 209) = 9.21, p < .001$ . Predictors of personal-emotional adjustment at this step were the same as above, where the global score was used.

#### 5.4.4.1.5 Institutional Attachment

The institutional attachment subscale was correlated with all five personality subscales and the overall personality score; secure attachment, fearful attachment, preoccupied attachment, all three LOC orientations, self-esteem, self-efficacy and social support. It was also correlated with the global Schutte score, and the two of the four Schutte subscales (optimism/mood regulation and social skills).

The overall model was significant and explained 30.9% of variance,  $F(24, 212) = 3.96, p < .001$ . Only step 1 contributed significant variance to the model. In the final model, institutional attachment was positively predicted by extraversion and residence arrangements (i.e., living in student halls or in a student house).

Adding EI subscale scores at Step 5 did not explain significant additional unique variance. The model as a whole accounted for 31.4% of the adjustment in institutional attachment,  $F(27, 209) = 3.54, p < .001$ . As with the analyses using global EI, extraversion and residence arrangements (living in student halls or a student house) positively predicted institutional attachment.

#### 5.4.4.2 *Trait Emotion Intelligence Questionnaire*

The overall and all SACQ subscales were each significantly correlated with the TEIQue global score and with all four TEIQue subscale scores.

##### 5.4.4.2.1 Overall Adjustment

The model was significant,  $F(24, 212) = 8.56, p < .001$ , and accounted for 49.2% of the variance in adjustment. Adding the global TEIQue score at Step 5 did not add significant variance. At the final step, conscientiousness, emotional stability, self-esteem and social support predicted adjustment.

When the regression was re-run with TEIQue subscale scores entered at Step 5, this also did not contribute significant additional variance. The model as a whole accounted for 40.3% of the



variance in overall adjustment,  $F(27,209) = 7.96, p < .001$ . Higher levels of agreeableness, conscientiousness and emotional stability were significant predictors in the final step.

#### 5.4.4.2.2 Academic Adjustment

Adding the global TEIQue score at Step 5 did not add significant variance. The model was significant overall,  $F(24, 212) = 6.92, p < .001$ , and accounted for 43.9% of the variance in academic adjustment. At the final step, conscientiousness, emotional stability, gender (being female), generational status (being first generation at university), self-esteem and self-efficacy predicted higher levels of academic adjustment whilst LOC (powerful others) predicted lower levels.

Adding TEIQue subscales at Step 5 did not add significant variance to the model. The total variance explained by the model was 45.5%,  $F(27, 209) = 6.45, p < .001$ . However, although the step was not significant, agreeableness, conscientiousness, intellect, gender (being female), generational status (being first generation), self-esteem and self-efficacy positively predicted variance in academic adjustment at this step, whilst locus of control (powerful others) and the TEIQue emotionality subscale were negative predictors. However, in view of the fact that the TEIQue emotionality subscale was positively associated with academic adjustment in the simple correlations, it is likely that the association between emotionality and academic adjustment is a result of suppressor effects.

#### 5.4.4.2.3 Social Adjustment

Adding the global TEIQue score at Step 5 did not add significant variance. The model was significant overall,  $F(24, 212) = 6.64, p < .001$ , and accounted for 42.9% of the variance in social adjustment. At the final step, extraversion, residence (living in student halls or house) and social support positively predicted social adjustment.

Adding TEIQue subscales at Step 5 did not add significant variance to the model. The total variance explained by the model was 44.6%,  $F(27, 209) = 6.24, p < .001$ . However, although the step was not significant, the well-being TEIQue subscale positively predicted variance in

social adjustment at this step, as did extraversion, agreeableness, and residence arrangements (living in student halls or a student house).

#### 5.4.4.2.4 Personal-emotional Adjustment

Adding the global TEIQue score at Step 5 did not add significant variance. The model was significant overall,  $F(24, 212) = 10.55, p < .001$ , and accounted for 54.4% of the variance in personal-emotional adjustment. At the final step emotional stability and social support positively predicted personal-emotional adjustment, whilst extraversion and intellect were negative predictors.

Adding TEIQue subscales at Step 5 did not add significant variance to the model. The total variance explained by the model was 54.9%,  $F(27, 209) = 9.43, p < .001$ . The same variables as above predicted the same positive and negative outcomes, with the addition of conscientiousness as a positive predictor.

#### 5.4.4.2.5 Institutional Attachment

Adding the global TEIQue score at Step 5 did not add significant variance. The model was significant,  $F(24, 212) = 3.97, p < .001$  and predicted 31% of the variance in personal-emotional adjustment. Only extraversion and residence (living in student halls or house) positively predicted institutional attachment at this final step.

Adding TEIQue subscales at Step 5 also did not add significant variance to the model. The total variance explained by the model was 32.1%,  $F(27, 209) = 3.66, p < .001$ . At this step, predictors were as in the global TEIQue results.

#### 5.4.4.3 *Emotional Self-efficacy Scale*

The overall and all SACQ subscales were each significantly correlated with the ESES global score and with all four ESES subscale scores.

#### 5.4.4.3.1 Overall Adjustment

Adding the global ESES score at Step 5 did not contribute significant variance. The model was significant overall,  $F(24, 212) = 8.65, p < .001$  and accounted for 49.5% of the variance in

personal-emotional adjustment. Conscientiousness, emotional stability, self-esteem, self-efficacy and social support predicted higher overall adjustment at this final step.

Adding ESES subscales at Step 5 also did not add significant variance to the model. The total variance explained by the model was 50.3%,  $F(27, 209) = 7.84$ ,  $p < .001$ . At this step, the same predictors were significant as with the use of the global ESES score.

#### 5.4.4.3.2 Academic Adjustment

Adding the global ESES score at Step 5 did not add significant variance. The model was significant overall,  $F(24, 212) = 7.06$ ,  $p < .001$  and accounted for 44.4% of the variance in academic adjustment. Conscientiousness, emotional stability, gender (being female), generational status (being first generation), self-esteem, and self-efficacy predicted higher overall adjustment at this step, whilst LOC (powerful others) predicted lower adjustment.

Adding ESES subscales at Step 5 also did not add significant variance to the model. The total variance explained by the model was 50.3%,  $F(27, 209) = 6.53$ ,  $p < .001$ . The same predictors were significant as with the use of the global ESES score, with the addition of two other positive predictors (i.e., intellect and agreeableness).

#### 5.4.4.3.3 Social Adjustment

Adding the global ESES score at Step 5 did not add significant variance. The model was significant overall,  $F(24, 212) = 6.66$ ,  $p < .001$  and accounted for 43% of the variance in academic adjustment. Extraversion, residence (living in student halls or house) and social support positively predicted social adjustment at this step.

Adding ESES subscales at Step 5 also did not add significant variance to the model. The total variance explained by the model was 43.2%,  $F(27, 209) = 5.89$ ,  $p < .001$ . At this step, the same predictors were significant as with the use of the global ESES score.

#### 5.4.4.3.4 Personal-emotional Adjustment

Adding the global ESES score at Step 5 did not add significant variance. The model was significant overall,  $F(24, 212) = 10.52$ ,  $p < .001$  and accounted for 54.4% of the variance in

personal-emotional adjustment. Conscientiousness, emotional stability, self-esteem and social support positively predicted personal-emotional adjustment at this final step, whilst extraversion and intellect were negative predictors.

Adding ESES subscales at Step 5 also did not add significant variance to the model. The total variance explained by the model was 55%,  $F(27, 209) = 9.45, p < .001$ . At this step, emotional stability, self-esteem and social support positively predicted, and intellect negatively predicted personal-emotional adjustment.

#### 5.4.4.3.5 Institutional Attachment

Adding the global ESES score at Step 5 did not add significant variance. The model was significant overall,  $F(24, 212) = 4.07, p < .001$  and accounted for 31.5% of the variance in personal-emotional adjustment. Extraversion and residence (living in student halls or a student house) positively predicted institutional attachment at this step.

Adding ESES subscales at Step 5 also did not add significant variance to the model. The total variance explained by the model was 32.7%,  $F(27, 209) = 3.77, p < .001$ . At this step extraversion and residence (living in halls or a student house) positively predicted institutional attachment.

#### 5.4.4.4 MSCEIT

The overall SACQ score and all SACQ subscales were each correlated with the MSCEIT global score and all MSCEIT subscales except Understanding Emotions.

##### 5.4.4.4.1 Overall Adjustment

In contrast with the other EI measures, adding the global MSCEIT score at Step 5 did add significant variance and the model was significant,  $F(24, 212) = 8.98, p < .001$ , accounting for 50.4% of the variance in overall adjustment. Conscientiousness, emotional stability, self-esteem and the global MSCEIT score positively predicted overall adjustment at this step.

Adding MSCEIT subscales at Step 5 also added significant variance to the model. The total variance explained by the model was 52.6%,  $F(27, 209) = 8.58, p < .001$ . At this step,

conscientiousness, emotional stability, self-esteem and the perceiving and managing subscales of the MSCEIT positively predicted overall adjustment.

#### 5.4.4.4.2 Academic Adjustment

However, unlike the situation with global adjustment, adding the global MSCEIT score at Step 5 did not add significant variance. The model was significant overall,  $F(24, 212) = 7.05$ ,  $p < .001$  and accounted for 44.4% of the variance in overall adjustment. Conscientiousness, gender (being female), and self-esteem positively, and LOC (powerful others) negatively predicted adjustment at this step.

Adding MSCEIT subscales at Step 5 did not add significant variance to the model. The total variance explained by the model was 45.3%,  $F(27, 209) = 6.41$ ,  $p < .001$ . At this step, conscientiousness, gender (being female), generational status (being first generation) and self-esteem positively predicted adjustment whilst LOC (powerful others) was a negative predictor.

#### 5.4.4.4.3 Social Adjustment

Adding the global MSCEIT score at Step 5 did not add significant variance. The model was significant overall,  $F(24, 212) = 6.89$ ,  $p < .001$  and accounted for 43.8% of the variance in social adjustment. Extraversion and residence (living in student halls or house) positively predicted adjustment at this step.

Adding MSCEIT subscales at Step 5 added significant variance to the model. The total variance explained by the model was 47.7%,  $F(27, 209) = 7.06$ ,  $p < .001$ . At this step, extraversion, agreeableness, residence (living in student halls or a student house) and MSCEIT Perceiving and MSCEIT Managing subscales were positive predictors of adjustment, whilst the MSCEIT Understanding subscale was a negative predictor. However, the lack of a significant bivariate correlation between the Understanding subscale and social adjustment suggests that this latter result is due to suppressor effects.

#### 5.4.4.4.4 Personal-emotional Adjustment

Adding the global MSCEIT score at Step 5 did not add significant variance. The model was significant,  $F(24, 212) = 10.65$ ,  $p < .001$  and accounted for 54.7% of the variance in personal-emotional adjustment. Conscientiousness, emotional stability, self-esteem and social support positively predicted adjustment whereas intellect was a negative predictor.

Adding MSCEIT subscales at Step 5 did not add significant variance to the model. The total variance explained by the model was 49%,  $F(27, 209) = 9.41$ ,  $p < .001$ . At this step, predictors were as above, with the exception of social support, which did not predict adjustment in these analyses.

#### 5.4.4.4.5 Institutional Attachment

Contrasting with the other attachment subscales, adding the global MSCEIT score at Step 5 did add significant variance to the model. The model was significant,  $F(24, 212) = 4.49$ ,  $p < .001$  and accounted for 33.7% of the variance in social adjustment. Extraversion, residence (living in student halls or house) and the MSCEIT global score were significant positive predictors at this step.

Adding MSCEIT subscales at Step 5 added significant variance to the model. The total variance explained by the model was 49%,  $F(27, 209) = 4.74$ ,  $p < .001$ . At this step, extraversion, residence (living in student halls or a student house), and MSCEIT perceiving emotions positively predicted greater adjustment.

Table 5.2 shows beta coefficients, squared semi-partial correlations (unique contributions of variance to criteria),  $R^2$  and  $R^2$  increments for HMR analyses of the SACQ for each of the four EI measures. Full regression results are not included in this thesis but are available from the author.

Table 5.2: Beta Coefficients, Squared Semi-partial Correlation Coefficients,  $R^2$  and  $R^2$  Increments for HMR Analyses of the SACQ for each of the Four EI Measures ( $N=237$ ).

Variables	SACQ Total	SACQ-A	SACQ-S	SACQ-P	SACQ-I
<i>Step 1 <math>\beta(sr^2)</math></i>					
Extraversion	.19(.031)***		.42(.146)***		.26(.055)***
Agreeableness	.17(.024)**	.15(.017)*	.18(.025)**		.15(.017)*
Conscientiousness	.21(.040)***	.31(.084)***		.16(.022)**	
Em. Stability	.42(.157)***	.29(.072)***	.23(.046)***	.60(.320)***	.23(.047)***
Intellect		.17(.022)**		-.15(.018)**	
Residence			.14(.017)*		.18(.026)**
$R^2$	.407***	.344***	.365***	.470***	.259***
<i>Step 2 <math>\beta(sr^2)</math></i>					
Extraversion	.12(.010)*		.37(.099)***		.22(.035)**
Agreeableness	.13(.012)*		.16(.019)**		.14(.014)*
Conscientiousness	.22(.041)***	.32(.084)***		.18(.027)***	
Em. Stability	.34(.087)***	.24(.042)***	.15(.017)*	.53(.207)***	.17(.022)*
Intellect		.16(.019)*		-.16(.019)**	
Residence			.15(.019)**		.19(.028)**
Gender		-.15(.018)*			
Attach-S	.19(.017)*	.20(.018)*		.23(.024)**	
$\Delta R^2$	.033*	.025	.031*	.040**	.019
<i>Step 3 <math>\beta(sr^2)</math></i>					
Extraversion			.36(.089)***		.21(.030)**
Agreeableness	.15(.015)*	.13(.011)*	.17(.019)**		.14(.014)*
Conscientiousness	.14(.015)*	.25(.044)***		.13(.011)*	
Em. Stability	.23(.032)***			.45(.120)***	
Intellect				-.17(.017)**	
Residence			.13(.014)*		.16(.020)*
Gender		-.17(.020)**			
Generation		-.13(.013)*			
Attach-S				.15(.009)*	
LOC-P		-.15(.019)**			
Self-esteem	.20(.019)**	.21(.021)**		.19(.017)**	
$\Delta R^2$	.041**	.064***	.020	.023	.021
<i>Step 4 <math>\beta(sr^2)</math></i>					
Extraversion			.33(.069)***	-.11(.008)*	.18(.020)*

<b>Variables</b>	<b>SACQ Total</b>	<b>SACQ-A</b>	<b>SACQ-S</b>	<b>SACQ-P</b>	<b>SACQ-I</b>
Conscientiousness	.14(.013)*	.25(.042)***		.12(.009)*	
Em. Stability	.24(.035)***			.46(.125)***	
Intellect				-.17(.016)**	
Residence			.13(.013)*		.16(.019)*
Gender		-.16(.018)*			
Generation		-.13(.013)*			
LOC-P		-.15(.018)**			
Self-esteem	.17(.012)*	.19(.017)*		.16(.011)*	
Support	.16(.011)*		.18(.012)*	.16(.010)*	
$\Delta R^2$	.011*	.002	.012*	.010*	.011
<b>SEIS Total</b>					
<i>Step 5 <math>\beta(sr^2)</math></i>					
Extraversion			.33(.068)***		.18(.020)*
Conscientiousness	.13(.012)*	.25(.041)***		.12(.009)*	
Em. Stability	.24(.034)***			.46(.124)***	
Intellect				-.17(.015)**	
Residence			.13(.013)*		.16(.019)*
Gender		-.16(.018)*			
Generation		-.13(.013)*			
LOC-P		-.15(.018)*			
Self-esteem	.16(.012)*	.19(.016)*		.16(.011)*	
Support	.16(.011)*		.18(.012)*	.16(.010)*	
$\Delta R^2$	.000	.000	.000	.000	.000
Overall F	8.56***	6.82***	6.62***	10.50***	3.96***
<b>SEIS Subscales</b>					
<i>Step 5 <math>\beta(sr^2)</math></i>					
Extraversion			.32(.063)***		.19(.021)*
Conscientiousness	.15(.014)*	.26(.045)***		.12(.009)*	
Em. Stability	.22(.027)***			.46(.114)***	
Intellect				-.16(.015)*	
Residence			.13(.013)*		.16(.020)*
Gender		-.16(.017)*			
Generation		-.12(.011)*			
LOC-P		-.16(.019)**			
Self-esteem				.15(.009)*	
Support	.16(.010)*		.17(.011)*	.16(.010)*	
$\Delta R^2$	.006	.011	.009	.000	.004



<b>Variables</b>	<b>SACQ Total</b>	<b>SACQ-A</b>	<b>SACQ-S</b>	<b>SACQ-P</b>	<b>SACQ-I</b>
Overall F	7.68***	6.24***	6.01***	9.21***	3.54***
<b>TEIQue Total</b>					
<i>Step 5 <math>\beta</math>(sr<sup>2</sup>)</i>					
Extraversion			.32(.063)***	-.12(.009)*	.17(.018)*
Conscientiousness	.14(.012)*	.27(.045)***			
Em. Stability	.25(.030)***	.15(.011)*		.44(.097)***	
Intellect				-.18(.017)**	
Residence			.13(.013)*		.16(.019)*
Gender		-.16(.019)**			
Generation		-.13(.013)*			
LOC-P		-.16(.020)**			
Self-esteem	.17(.011)*	.22(.020)**			
Self-efficacy		.16(.012)*			
Support	.16(.011)*		.17(.011)*	.15(.009)*	
$\Delta R^2$	.000	.003	.001	.001	.000
Overall F	8.56***	6.92***	6.64***	10.55***	3.97***

**TEIQue  
Subscales**

<i>Step 5 <math>\beta</math>(sr<sup>2</sup>)</i>					
Extraversion			.32(.054)***	-.13(.009)*	.16(.014)*
Agreeableness	.15(.011)*	.16(.014)*	.14(.011)*		
Conscientiousness	.18(.020)**	.29(.053)***		.13(.010)*	
Em. Stability	.27(.027)***			.44(.071)***	
Intellect		.14(.011)*		-.16(.014)*	
Residence			.14(.014)*		.16(.020)*
Gender		-.17(.021)**			
Generation		-.12(.011)*			
LOC-P		-.18(.023)**			
Self-esteem		.19(.010)*			
Self-efficacy		.16(.012)*			
Support				.15(.009)*	
TEIQue-W			.20(.011)*		
TEIQue-E		-.17(.014)*			
$\Delta R^2$	.015	.019	.018	.006	.012
Overall F	7.96***	6.45***	6.24***	9.43***	3.66***

**ESES Total**

<b>Variables</b>	<b>SACQ Total</b>	<b>SACQ-A</b>	<b>SACQ-S</b>	<b>SACQ-P</b>	<b>SACQ-I</b>
<i>Step 5</i> $\beta(sr^2)$					
Extraversion			.33(.070)***	-.12(.009)*	.18(.022)**
Conscientiousness	.14(.013)*	.25(.044)***		.11(.009)*	
Em. Stability	.26(.037)***	.14(.011)*		.46(.115)***	
Intellect				-.17(.017)**	
Residence			.13(.013)*		.16(.020)*
Gender		-.16(.019)**			
Generation		-.12(.012)*			
LOC-P		-.15(.017)*			
Self-esteem	.17(.013)*	.21(.019)**		.15(.011)*	
Self-efficacy	.14(.009)*	.17(.013)*			
Support	.16(.010)*		.17(.012)*	.16(.010)*	
$\Delta R^2$	.003	.008	.001	.001	.006
Overall F	8.65***	7.06***	6.66***	10.52***	4.07***
<b>ESES Subscales</b>					
<i>Step 5</i> $\beta(sr^2)$					
Extraversion			.33(.071)***		.19(.023)**
Agreeableness		.14(.010)*			
Conscientiousness	.13(.011)*	.24(.038)***			
Em. Stability	.28(.037)***	.18(.016)*		.47(.105)***	
Intellect		.15(.012)*		-.16(.013)*	
Residence			.13(.014)*		.16(.019)*
Gender		-.16(.017)*			
Generation		-.12(.012)*			
LOC-P		-.14(.016)*			
Self-esteem	.19(.015)*	.23(.023)**		.16(.011)*	
Self-efficacy	.15(.011)*	.18(.015)*			
Support	.16(.010)*		.17(.011)*	.15(.009)*	
$\Delta R^2$	.011	.022	.004	.007	.018
Overall F	7.84***	6.53***	5.89***	9.45***	3.77***
<b>MSCEIT Total</b>					
<i>Step 5</i> $\beta(sr^2)$					
Extraversion			.34(.074)***		.20(.025)**
Conscientiousness	.13(.012)*	.24(.041)***		.11(.009)*	
Em. Stability	.24(.032)***			.46(.122)***	
Intellect				-.18(.018)**	
Residence			.13(.014)*		.17(.021)**
Gender		-.17(.019)**			

Variables	SACQ Total	SACQ-A	SACQ-S	SACQ-P	SACQ-I
LOC-P		-.14(.014) *			
Self-esteem	.17(.013) *	.20(.017) *		.16(.011) *	
Support				.15(.008) *	
MSCEIT Total	.12(.012) *				.19(.028) **
$\Delta R^2$	.012 *	.008	.010	.004	.028 **
Overall F	8.98 ***	7.05 ***	6.89 ***	10.65 ***	4.49 ***
<b>MSCEIT Subscales</b>					
<i>Step 5 <math>\beta</math>(sr<sup>2</sup>)</i>					
Extraversion			.34(.073) ***		.19(.024) **
Agreeableness			.14(.011) *		
Conscientiousness	.15(.015) *	.25(.041) ***		.12(.010) *	
Em. Stability	.25(.036) ***			.46(.122) ***	
Intellect				-.18(.017) **	
Residence			.17(.021) **		.20(.030) **
Gender		-.16(.018) **			
Generation		-.12(.011) *			
LOC-P		-.14(.015) *			
Self-esteem	.16(.012) *	.19(.017) *		.15(.011) *	
MSCEIT-P	.15(.015) *		.16(.017) *		.26(.046) ***
MSCEIT-U			-.15(.015) *		
MSCEIT-M	.12(.009) *		.18(.022) **		
$\Delta R^2$	.034 **	.017	.049 ***	.006	.070 ***
Overall F	8.58 ***	6.41 ***	7.06 ***	9.41 ***	4.74 ***

Note. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . SACQ Total = Overall adjustment; SACQ-A = Academic adjustment; SACQ-S = Social adjustment; SACQ-P = Personal-emotional adjustment; SACQ-I = Institutional attachment; Gender was coded 0 = female, 1 = male; residence was coded 0 = student lives in own or parents' house, 1 = lives in student halls or house; parents' HE was coded 0 = neither parent has HE qualifications, 1 = one or both parents have HE qualifications; Attach-S = secure attachment; LOC-P = 'powerful others' locus of control; Support = Social support; TEIQue-W = Emotional intelligence: well-being; TEIQue-E = Emotional intelligence: emotionality; MSCEIT-P = Emotional intelligence: perceiving emotions; MSCEIT-U = Emotional intelligence: understanding emotions; MSCEIT-M = Emotional intelligence: managing emotions. Higher scores on psychological variables are indicative of higher levels of the construct.  $R^2$ ,  $\Delta R^2$  and  $sr^2$  values are displayed to 3DP in order to achieve the required degree of precision and facilitate more accurate comparisons across different steps and models.

#### 5.4.5 Attenuation of the Relationship between EI and Adjustment

A second series of hierarchical multiple regression analyses were undertaken to explore the mediational role of other predictor variables in the relationship between EI and adjustment. This involved measuring the amount of EI-related variance in adjustment before and after controlling for another variable or variables. Using this technique, where substantial attenuation of the proportion of EI-related variance occurs, this would suggest an important mediational role

for the variable(s) in the relationship between EI and adjustment. Adjustment scores were the criterion and overall EI the predictor variable. Analyses were repeated for each measure of EI in turn. Separate statistical controls for other study variables were introduced in five stages as indicated in Table 5.3.

Table 5.3: University Adjustment: Change in  $R^2$  for Four Measures of EI after Separate Statistical Controls for other Variables (N=237)

Controls	Criteria									
	SACQ Total		SACQ-A		SACQ-S		SACQ-P		SACQ-I	
	$R^2$	F	$R^2$	F	$R^2$	F	$R^2$	F	$R^2$	F
<b>SEIS</b>										
No controls	.188	54.49 ***	.154	42.88 ***	.125	33.58 ***	.104	27.40 ***	.085	21.90 ***
I, P, D	.011	4.39 *	.008	2.83	.007	2.37	.006	2.49	.005	1.40
I, P, D, A	.004	1.59	.002	.80	.003	.97	.001	.57	.002	.57
I, P, D, A, Est, Eff, L	.000	.01	.000	.00	.000	.00	.000	.02	.000	.01
I, P, D, A, Est, Eff, L, S	.000	.00	.000	.00	.000	.00	.000	.03	.000	.02
<b>TEIQue</b>										
No controls	.354	128.62 ***	.244	75.98 ***	.234	71.82 ***	.273	88.19 ***	.176	50.05 ***
I, P, D	.025	9.81 **	.011	3.70	.020	7.05 **	.026	11.57 ***	.016	4.94 *
I, P, D, A	.010	3.78	.002	.72	.009	3.32	.012	5.28 *	.009	2.62
I, P, D, A, Est, Eff, L	.000	.04	.003	1.06	.002	.58	.002	1.04	.001	.35
I, P, D, A, Est, Eff, L, S	.000	.00	.003	1.30	.001	.28	.001	.62	.000	.15
<b>ESES</b>										
No controls	.140	38.10 ***	.081	20.67 ***	.094	24.32 ***	.123	33.04 ***	.056	13.83 ***
I, P, D	.001	.27	.001	.42	.001	.47	.006	2.65	.000	.02
I, P, D, A	.000	.03	.004	1.39	.000	.01	.002	.97	.001	.33
I, P, D, A, Est, Eff, L	.003	1.26	.009	3.31	.002	.62	.001	.23	.007	2.03
I, P, D, A, Est, Eff, L, S	.003	1.15	.008	3.21	.001	.54	.001	.30	.006	1.90
<b>MSCEIT</b>										
No controls	.051	12.60 ***	.045	11.04 **	.032	7.70 **	.022	5.35 *	.051	12.72 ***
I, P, D	.018	6.87 **	.015	5.22 *	.013	4.52 *	.005	2.26	.033	10.34 **
I, P, D, A	.017	6.66 *	.014	4.85 *	.011	4.17 *	.006	2.59	.031	9.74 **
I, P, D, A, Est, Eff, L	.014	6.01 *	.009	3.42	.012	4.44 *	.005	2.20	.031	9.85 **
I, P, D, A, Est, Eff, L, S	.012	5.10 *	.008	3.10	.010	3.65	.004	1.65	.028	8.84 **

Note: SACQ Total = Overall adjustment; SACQ-A = Academic adjustment; SACQ-S = Social adjustment; SACQ-P = Personal-emotional adjustment; SACQ-I = Institutional attachment; I = IQ; P = Personality; D = Demographics; A = Attachment; Est = Self-esteem; Eff = Self-efficacy; L = Locus of control; S = Social support.  $R^2$  and  $\Delta R^2$  values are displayed to 3DP in order to achieve the required degree of precision and facilitate more accurate comparisons across different steps and models.

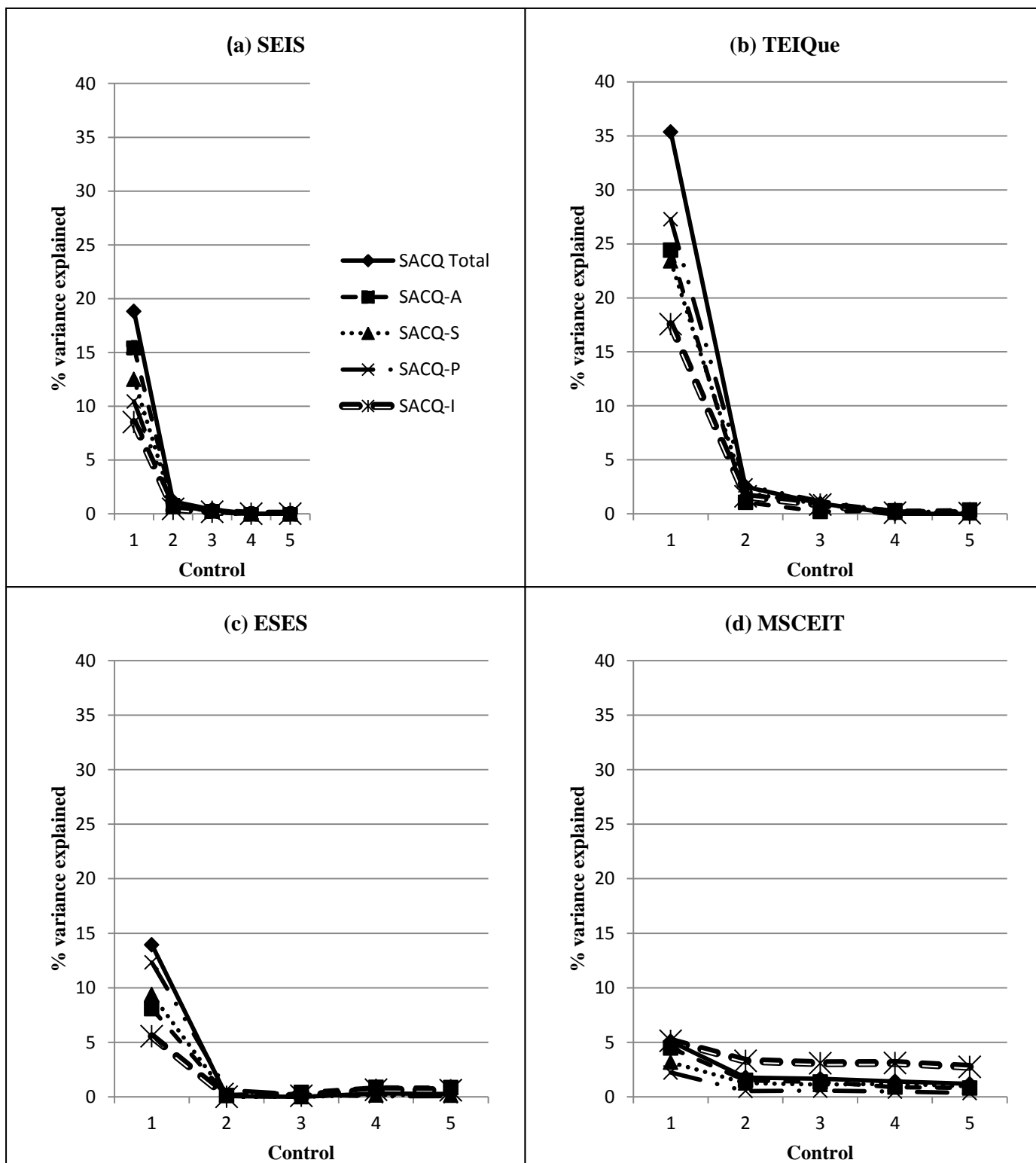


Figure 5.1: University Adjustment: Change in  $R^2$  for Four Measures of EI after Separate Statistical Controls for Other Variables<sup>26</sup>

It can be seen from the figure above that the four measures of EI not only predict different amounts of variance in adjustment initially (with no controls) but there is also clear evidence of differential attenuation effects for the different measures, and different patterns for the various facets of adjustment. The TEIQue explains the greater proportion of variance in the SACQ

<sup>26</sup> Controls introduced as follows: Step one = No controls; Step 2 = Demographics; Step 3 = Demographics, Attachment; Step 4 = Demographics, Attachment, Self-esteem, Self-efficacy, LOC; Step 5 = Demographics, Attachment, Self-Esteem, Self-Efficacy, LOC, Social support.

scores in the first step, twice as much as the SEIS and the ESES and 7 or 8 times more than the MSCEIT which is least effective at the first step. However, with the exception of the MSCEIT, most of the variance explained appears to overlap with the IQ, personality and demographic variables and so is virtually eliminated from step 2. Only the MSCEIT appears to share unique variance with the SACQ measures.

## **5.5 DISCUSSION**

### *5.5.1 Overview*

The present study explored how multiple measures of EI were related to university adjustment. Research questions related to whether they differed in their associations with adjustment, incremental power and patterns of mediation. The study also investigated whether other, non-EI, variables were superior predictors of adjustment.

### *5.5.2 Main Findings*

#### *5.5.2.1 TEIQue*

Of the EI variables, the TEIQue had the overall strongest relationships with criteria, with the global score and the well-being and self-control subscales performing better than the other (i.e., the emotionality and sociability) TEIQue components, for which effect sizes were small and their practical utility therefore potentially limited.. In comparison with non-EI study variables, only personality was as strongly associated with outcomes. That the TEIQue performed better than competing measures of EI is consistent with hypotheses and the findings of other empirical studies such as the meta-analysis by Schutte et al. (2007). The latter found that trait EI showed stronger relations with mental health than did ability EI, and that broader trait EI measures showed greater relationships with criteria than narrower measures such as the SEIS.

Findings such as these are perhaps unsurprising given the broadness of the trait EI construct (Petrides & Furnham, 2003) and high theoretical overlap among aspects of the TEIQue, facets of adjustment to university, and other robust predictors of adjustment. For example, the TEIQue component most strongly associated with criteria, the Well-being subscale, comprises items that are related to self-esteem and optimism; both are strong and consistent predictors of

higher levels of adjustment to university life. Similarly, the Self-control scale appears to tap adaptive coping, another well-established predictor of university adjustment. Some of these items relate specifically to the management of emotions, suggesting the latter may also be an important predictor of adjustment. Interestingly, although the Well-being and Self-control subscale might be expected to relate most strongly to the personal-emotional facet of university adjustment, Well-being appears to be equally important for all the facets of adjustment. The Self-control subscale, on the other hand, did relate most strongly to the personal-emotional subscale.

In interpreting these results it should be noted that trait EI as measured by the TEIQue is related to the emotion aspects of personality (Petrides, Pita, & Kokkinaki, 2007) and, indeed of all the EI measures the TEIQue demonstrated the strongest associations with personality in the present study. It also showed strong associations with other predictors of adjustment such as self-esteem, social support and attachment security. These considerations may suggest that the TEIQue exerts its effects due to its overlap with personality.

Indeed the attenuation analyses provide some support for this suggestion, and question the distinctiveness of trait EI from the personality domain; the impressive amounts of variance that global TEIQue predicts in criteria are substantially reduced once personality is taken into consideration, and reduce to zero, or almost zero, once other study variables are accounted for. However, results of incremental validity analyses, where the TEIQue is explored at the subscale level, suggest that the instrument is measuring something unique in university adjustment (i.e., that is not measured by other study variables). Specifically, the well-being component positively predicted unique variance in social adjustment. Inspection of the items on this subscale reveals that they related to positive views of the self and a positive view of life. Perhaps these are important aspects of being willing to become more socially involved. Specifically, positive views of the self and of life in general may lead one to believe that one will be welcomed by others, and social interactions will be positive, increasing the likelihood of the student initiating contacts. Although some of the items on the scale appear to share some overlap with the concept of self-esteem, perhaps the unique variance demonstrated by this scale



is due to its tapping of the optimism construct and its generally more all-encompassing positivity.

In summarising, the TEIQue had the strongest associations with criteria of all the EI measures. Exploration of the attenuation of the global EI scores suggests that the global EI score is assessing nothing new in adjustment once other variables are taken into consideration. However, when TEIQue subcomponents were employed in incremental analyses, there were indications that the TEIQue subscales were differentially implicated in the separate facets of university adjustment.

#### 5.5.2.2 *MSCEIT*

Turning to the MSCEIT, the present study found that the global score was correlated with all five SACQ scores; these findings were consistent with hypotheses and with the findings of Abdullah et al. (2009a). Moreover, the present study also found that three of the four MSCEIT subscales (all but the ‘Understanding’ scale) were related to all adjustment criteria. However, overall, the MSCEIT was the most weakly associated with university adjustment in comparison to the other three measures of EI, with effect sizes for all MSCEIT components across all SACQ criteria being small. Although this suggests that the practical implications of the findings should not be overstated, it is necessary to consider these results alongside the findings for the MSCEIT’s ability to predict unique variance (discussed later in this section).

That the Understanding Emotions component (which involves analysing emotions into parts, understanding transitions from one feeling to another, and understanding complex combinations of emotions) showed no associations with criteria is interesting. Given that many of the skills required to do well on this aspect of the test require one to understand the feelings and emotional experiences of others, it might be expected to relate to higher levels of social adjustment, at a minimum. However, an explanation for the findings may be that this ‘understanding’ does not subsequently translate into any attitudes or behaviours that are able to influence adjustment. Indeed, one aspect of this branch involves respondents having to demonstrate a very sophisticated understanding of how emotions combine and then an equally

sophisticated knowledge of emotion words and the subtle differences in their meanings. Whilst this does, indeed, require a high level of emotional skills and understanding, it is unclear how this knowledge would be useful to the individual in the real world.

Aside from the Understanding subscale, the other MSCEIT scores also performed relatively poorly, with only the global score being related (albeit weakly) with all adjustment criteria. The remaining subscales were only weakly associated with particular aspects of adjustment, and generally not in ways that one would intuitively expect. For example, Perceiving Emotions may be expected to be the most closely related to social adjustment, and yet its strongest relation was with institutional attachment. It is difficult to interpret this SACQ subscale in some respects as it comprises items not only to do with the student's commitment to their course and positive attitude to their course and institution, but also items from other SACQ scales that have been empirically linked to student dropout. Perhaps the ability to perceive emotions in oneself and others enables the student to interact with their institution in a more adaptive manner. It may also mean that they are more likely to have used these skills to make an appropriate choice of course and institution in the first place, hence the greater level of satisfaction. The finding that Managing Emotions is related to social adjustment makes intuitive sense, as this would be expected to be a fundamental requisite for positive relationships with others. It is also consistent with previous findings; for example, Lopes et al. (2004) found that the ability to manage emotions, as measured by the MSCEIT, was associated with the quality of social interactions.

Notwithstanding the significant findings relating to the MSCEIT and adjustment, possible reasons for the weakness of the associations require some consideration. The most obvious conclusion to draw from these findings is that it is self-perceptions of emotional abilities, and not actual emotional abilities, that are important for university adjustment. This would seem a plausible explanation, given that many robust predictors of university adjustment tend to be related to positive views of the self, others and various aspects of one's life and situation. Moreover, associations between ability and trait EI scores are typically modest (e.g., Paulhus et al., 1998) further supporting the view that self-report instruments measure something other than

actual emotional abilities. Perhaps high self-report EI scores are, therefore, representative of the respondent's positive world-view, which, whether or not it accurately reflects reality, serves them well in a number of ways. In a related vein, Mayer (2001) argues that non-ability EI instruments may be measuring self-perceived well-being. Clearly, if trait EI measures the latter it is likely to be related to better levels of university adjustment.

However, the foregoing discussions are based on the premise that the MSCEIT measures emotional abilities, and researchers have raised a number of concerns in this regard. Brody (2004) suggests that the MSCEIT measures the respondent's *knowledge* of emotional skills rather than their *use* of emotional skills. Clearly if this is the case, associations with real-life outcomes are unlikely to be high. Other concerns around the MSCEIT relate to its structural validity: Palmer, Gignac, Manocha, and Stough (2005) argue that factor analysis supports the use of only the Perceiving, Understanding, and Managing emotions branches. Moreover, some researchers question the veridical scoring system and argue that consensus scoring merely measures conformity to social norms (Matthews & Zeidner, 2000; Roberts et al., 2001). This may also explain why relationships between MSCEIT scores and criteria may be weak: we are measuring the most common, rather than the most adaptive or 'best' response. So, there is no particular basis for expecting the two to converge: it would make sense for the most 'emotionally intelligent' individuals to be only a small and unusually gifted minority of the population.

Despite its relatively poor performance in terms of the magnitude of its associations with criteria, the MSCEIT was the most incrementally valid of all the EI measures, with global MSCEIT scores and some subscale scores demonstrating the ability to predict unique variance in some adjustment criteria. Moreover, the MSCEIT global score had the largest amount of unique variance of all study variables in relation to institutional attachment criteria. Similarly, in the subscale-level analyses, the Managing Emotions and Perceiving Emotions subscales demonstrated the highest proportions of unique variance of all study variables in relation to the social adjustment and institutional attachment criteria respectively. Clearly these findings suggest that the MSCEIT may be measuring something unique in university adjustment that is

not assessed by other study variables. That global MSCEIT scores explain unique variance in overall adjustment and institutional attachment suggests that actual emotional abilities may be important for these aspects of adjustment. However, inspection of subscale-level analyses is likely to be more illuminating with regard to suggesting why this may be. Perceiving Emotions and Managing Emotions were incrementally important for overall adjustment. This effect may have been found due to the effect of the incremental importance of these two subscales for individual facets of adjustment. The most impressive amount of incremental variance was generated by the Perceiving Emotions subscale, in relation to the prediction of institutional attachment. This finding appears to support the conclusions of Davies et al. (1998) who concluded that the “emotion perception” aspect of EI bears the most promise as a ‘new’ construct different from established individual difference variables. That Perceiving Emotions (alongside Understanding Emotions and Managing Emotions) was also incrementally valid in predicting social adjustment also supports this argument. Understanding Emotions, on the other hand demonstrates a respectable amount of unique variance in social adjustment, despite the two variables being unrelated in a bivariate context. Moreover, counter-intuitively, the relationship between the two is negative, indicating that greater ability to understand emotions is associated with lower levels of social adjustment. It is possible that suppressor effects are responsible for this unexpected result.

The incremental validity for Managing Emotions appears to make intuitive sense, however. The reasons why this would be expected to be an important determinant of social adjustment have been discussed previously. The findings are similar to those of the Lopes et al. (2004) study outlined above which found that positive associations between MSCEIT Managing Emotions and social relationship quality held even after controlling for Big Five personality traits. Moreover, the results are not unexpected, since no-other study variables appear to share any substantial conceptual overlap with the construct. Whilst the Emotional Stability aspect of personality is similar in some respects, personality does not tend to overlap with ability EI, and emotional stability only explicitly relates to one’s own emotions, and not the emotions of others. Interestingly, in criticising EI, Eysenck (1998) asserted that the construct is nothing new and

merely a combination of intelligence and emotional stability. Of all the EI subcomponents explored in the present study, MSCEIT Managing Emotions is the one to which this criticism may most logically apply, and yet it is not borne out by these results.

Attenuation analyses also support the distinctiveness of global ability EI from other study variables. A very different pattern of results are found here in comparison to those relating to the TEIQue. Whilst the MSCEIT predicts relatively little of the variance in the five adjustment scores initially, and although this variance decreases further when the effects of IQ, personality and demographics are considered, the residual variance remaining at this stage does not appear to overlap with that for the remaining psychosocial variables.

Although ability EI and cognitive ability do not share the same amount of overlap as trait EI and personality, the effect of the choice of measure of cognitive ability for this study may be worth some consideration. Stated simply, the very brief measure of non-verbal ability employed in this study may not have adequately measured the full breadth of the construct. Correlations between cognitive ability and EI tend to vary as a function of the type of test of cognitive ability employed, with tests of verbal ability showing greater overlap with ability EI than tests of ‘performance IQ’ such as the APM. Indeed, correlations between the APM and some MSCEIT subscales in the present study appeared to be smaller than those found in much published research. Plausibly, the measurement of both verbal and non-verbal ability using more comprehensive measures than that employed in this study may have resulted in different results for incremental validity: the MSCEIT may have not been able to predict as much, if any, unique variance in the face of a more rigorous measures of ability. To put it another way, the residual variance evident in this study may not represent a ‘new’ type of mental ability, but rather variance that could also have been explained by existing tests.

Overall, the results suggest that the MSCEIT is only weakly associated with criteria, but that it bears promise as a measure that can explain non-trivial amounts of unique variance in adjustment criteria. However, only some MSCEIT scores achieve this, and only for some facets of adjustment, with the Perceiving Emotions facet performing best.

### 5.5.2.3 SEIS

The findings regarding the SEIS substantiate the findings of Study 1 in that some SEIS scores were more strongly related than others with university adjustment: the Optimism/Mood regulation component had the strongest relations with criteria (although still only a moderate effect size according to Cohen's [1988] criteria), and Utilisation of Emotions was unrelated. The importance of optimism for university adjustment and the potentially important role for regulating emotions have been discussed previously, so these strong associations are in line with expectations. This result may also be due to this subscale's theoretical overlap with general well-being and positive affect. As in Study 1, the findings regarding Utilisation of Emotions suggest that this component, which taps the use of emotions to facilitate thought and solve problems, has little or no utility, not even for academic adjustment. However, as before, we need to consider the fact that the scale contains only four items and may lack reliability.

The Appraisal (Perception of Emotions) subscale, on the other hand, appeared to perform substantially poorer in this study in comparison with Study 1; the reasons for this are unclear. However, this subscale did show its strongest association (albeit still relatively weak) with academic adjustment, possibly due to the reasons discussed above in relation to the MSCEIT (if one accepts the premise that the SEIS is indeed measuring abilities). That the Social Skills component is more strongly associated with social adjustment than the other adjustment facets makes intuitive sense, and suggests that these skills facilitate the forming and maintenance of interpersonal relationships. Overall the SEIS is more weakly related to criteria in comparison to the TEIQue: the associations are generally smaller, and whilst all TEIQue components are associated with almost all adjustment criteria, only particular SEIS scores have utility in this domain. Moreover, neither the Appraisal nor the Understanding subscales demonstrated any effects sizes higher than what would be classified as small according to Cohen's (1988) criteria for any of the SACQ scores. These results are probably explained by the broader conceptual basis of the TEIQue, which, as discussed above, taps many aspects related to university adjustment. In contrast, the SEIS has a much narrower conceptual base predicated on a more focused definition of EI. However, the SEIS performs substantially better than the MSCEIT,

with stronger associations overall, although similarly, the subscales have differential associations with outcomes.

Whilst these results appear promising, the scale's ability to predict unique variance in criteria is poor: neither global nor subscale SEIS scores add any unique variance in criteria once other non-EI study variables are accounted for. These findings are in line with expectations and with previous research: controlling for IQ and personality (i.e., a much less stringent test of incremental validity) Chapman and Hayslip (2005) found that the SEIS could predict only a very small amount of unique variance in only one of eight aspects of university adjustment (loneliness). The present attenuation analyses indicate that although the SEIS can predict a respectable amount of variance in adjustment initially (although only approximately half as much as the TEIQue), personality, IQ and demographics are able to remove almost all of the variance in adjustment. The small amounts of residual variance that remain at this stage are then almost completely removed once attachment is taken into consideration, suggesting that attachment may share some theoretical overlap with EI. These results are consistent with expectations and with the theorising that self-report measures may have little to offer beyond existing constructs. Additionally, that the SEIS performs so poorly incrementally in comparison to the MSCEIT, when the SEIS is built on an ability model (albeit a slightly different, earlier model than the MSCEIT) appears to lend support to the argument that abilities are not being adequately assessed by self-report methods (e.g., Mayer et al., 2008).

#### 5.5.2.4 *ESES*

In contrast to the unreliable set of associations between individual SEIS scores and outcomes, with the exception of the Perceiving Emotions subscale, each of the ESES scores reliably showed relations with all adjustment criteria. Only the TEIQue showed a similar set of reliable associations across most EI and adjustment subcomponents, although the magnitude of the TEIQue associations was greater.

It should be noted, however, that these results should be interpreted with some caution, since the ESES was presented as a unifactorial scale by Kirk et al. (2008) and, thus, the use of the

subscales is exploratory. Notwithstanding this caveat, this pattern of results is interesting in a number of respects. First, this measure of EI is unique in that it explicitly relates to self-efficacy for emotional functioning. This, in itself, would be expected to generate reliable associations with adjustment, since self-efficacy, both generally and domain specific, is a strong and robust predictor of higher university adjustment, as well as for adaptive outcomes in general. As such it is possible that it is this aspect of the scale that is responsible for the consistent and reliable associations. To put it another way, individuals with a generally positive self-concept are likely to score high on the ESES and this is to some degree independent of the emotional skills being assessed. Second, in a similar vein to the foregoing discussion regarding the SEIS, this measure of EI is based on an ability model. However, in contrast to the SEIS, this model is indeed based on the same theoretical model as the MSCEIT and thus allows for a direct comparison between a self-report and ability measure. The ESES shows small to small/moderate associations across all EI and adjustment facets (although the Perceiving Emotions subscale is unique in that it fails to demonstrate anything other than small effect sizes for any of the SACQ scores, suggesting perhaps lesser practical significance for the findings for this subscale). However, the MSCEIT shows only small associations and only for some aspects of EI and adjustment. This is most strikingly illustrated in the Understanding Emotions subscale. Using the MSCEIT, associations between this component and all facets of adjustment are approximately zero; this component in the ESES was associated with all adjustment criteria at a low/low to moderate level. The fact that the two show very different patterns of associations appears to provide strong evidence that self-reports of abilities are influenced by other factors aside from actual abilities, with self-efficacy possibly playing a larger role in this instance. Indeed the ESES' associations with the Generalised Self-Efficacy Scale were slightly larger than those of the other self-report EI measures, and substantially larger than those of the MSCEIT.

As with the other two measures of EI, incremental validity and attenuation analyses indicate that the ESES contributes little beyond other study variables to the prediction of university adjustment. The measure was not incrementally valid, suggesting that much of what is



measured is captured by other study variables. As before, it appears much of the variance in adjustment is removed once personality, IQ and demographics is taken into account.

#### *5.5.2.5 Comparisons between EI and Non-EI Study Variables and Relationships with Adjustment*

Whilst the above discussion sheds light on how the different EI measures relate to university adjustment, the question of how they compare to other, non-EI, study variables also warrants attention.

In terms of the bivariate correlations between variables, overall personality (i.e., the total of the five 'positive' subcomponents of personality) and the TEIQue were most strongly related to criteria. Overall personality, the global TEIQue score and the Well-being TEIQue component were all moderately to strongly associated with all facets of university adjustment. Self-esteem also showed reasonably robust relationships across all facets of adjustment. Indeed all of the psychosocial variables that were important in Study 1 also show associations with criteria in the present study.

Although the TEIQue and overall personality are the measures that are most strongly and reliably (i.e., across all facets) related to adjustment, the question of which variables are most strongly associated with individual adjustment criteria also warrants attention. The TEIQue full scale score was the most strongly associated with the overall adjustment scores. However, this may, in part, be due to its overlap with personality (overall personality was almost as strong a predictor). Academic adjustment was most strongly related to overall personality and of the personality subcomponents, conscientiousness, the tendency to be hard-working, dependable and organised, was most strongly associated with academic adjustment. Indeed, although academic adjustment and academic performance are not the same thing, the two are closely related, and conscientiousness has long been established as a strong and robust predictor of academic performance and the best among the Big Five Factors (e.g., Costa & McCrae, 1992).

Perhaps unsurprisingly, Extraversion (and the overall personality score) was most strongly associated with social adjustment. This makes intuitive sense, since extraversion is defined as

the extent to which one is gregarious, talkative and sociable (Goldberg, 1992) which are likely to be useful traits for building relationships. However, associations with the TEIQue global and Well-being scores were only slightly lower. Perhaps the Well-being aspect of the TEIQue, which taps positive views of the self and life in general, facilitates the social aspects of university life.

With regard to personal-emotional adjustment, this was most strongly associated with the 'Emotional Stability' (the opposite of neuroticism) component of the Big Five. This relates to the individual's ability to avoid negative emotional experiences. This finding is perhaps therefore due to theoretical (and, in turn, empirical) overlap between the two constructs. Indeed this relationship was the strongest of all associations in the study. Similarly, in interpreting this finding it is important to consider the fact that personal-emotional adjustment refers to how the student is feeling emotionally and physically, which may be due to factors unrelated to university life, or, as with the 'Emotional Stability' it may reflect relatively stable traits.

Finally, overall personality and the global TEIQue score, were the best overall predictors of the students' attachment to the institution. This is most likely due to overlap between trait emotional intelligence and personality.

### 5.5.3 *Conclusions*

The current study makes several important contributions to the literature. It is the first to investigate the utility of multiple measures of EI in relation to the criterion of university adjustment as a multi-faceted construct. Moreover, by exploring EI and adjustment constructs at the subscale as well as global level, it allows us to pinpoint more precisely which EI subcomponents are important for the various facets of adjustment. The study is also the first to compare multiple measures of EI with a selection of the most robust predictors of university adjustment. Moreover, a very stringent test of the incremental validity of EI was performed, partialling not only IQ and personality but also the effects of competing psychosocial predictors. Finally, exploration of the attenuation of the relationship between EI and adjustment provides an insight into how EI may exert its effects.

The results of the study provide further evidence that relationships exist between emotional intelligence and university adjustment. That EI showed associations with all the separate facets of adjustment supports the idea that EI is a useful and relevant construct in different domains. As expected, and consistent with other research (e.g., Côté et al., 2010; Zeidner et al., 2005) results differed depending on how EI was operationalized. Overall, self-report measures of EI demonstrated the strongest associations, with the TEIQue demonstrating substantially stronger correlations with adjustment than the other two self-report EI measures. In contrast, the MSCEIT was only weakly associated with criteria. Whilst the possibility that common method variance may have inflated associations between self-report EI and university adjustment, many factors (e.g., deliberate faking, self-enhancement bias, inaccurate perceptions of skills) may 'contaminate' self-report measures of EI abilities. The findings appear to support claims that actual emotional abilities cannot be assessed via self-report (e.g., Petrides, Pérez-González, et al., 2007; Tett et al., 2005) and that self-judgements of EI comprise a substantial proportion of variance that is unrelated to EI itself (Mayer et al., 2008). Perhaps, as proposed by Mayer et al. (2004), self-report instruments should only be viewed as assessing self-perceived EI rather than EI actual abilities. However, even if this is the case, this is still important, and would indicate that it is confidence and positive self-perceptions in this area that really matter for university adjustment.

Whilst self-report measures were more strongly-associated with criteria than the MSCEIT, the hierarchical models supported the incremental validity of the MSCEIT (and its Perceiving Emotions subscale in particular) to a greater extent than the self-report scales. This finding is similar to other research that has compared the empirical performance of ability and trait EI measures: Côté et al. (2010) found that only ability EI exhibited incremental validity over personality and gender. The findings suggest that this instrument is measuring something different from other study variables in relation to university adjustment, and in this sense at least, has the greater utility.

Notwithstanding evidence that some TEIQue components can explain unique variance in some aspects of adjustment, the incremental power of self-report beyond IQ, personality and

competing psychosocial measures was poor. Although there is some evidence in the EI literature for the incremental validity of the SEIS (e.g., Chapman & Hayslip, 2005; Saklofske et al, 2003) this is typically modest or criterion-specific and competing variables were not controlled as extensively as in the current study. The findings of this study are therefore broadly consistent with existing findings in that trait EI tends to become redundant in the face of personality or other competing predictors. Indeed, in the present study, attenuation analyses indicated that the step that included personality was able to account for most of the EI variance in outcomes, with other psychosocial variables reducing the remaining amount further. The findings, therefore, suggest that there is a considerable amount of conceptual overlap between trait EI and personality, and that they may be assessing the same latent variable. They also partially supports the theorising that trait EI measures are not sufficiently discriminable from personality, and that some instruments such as the TEIQue should be viewed as personality measures rather than the respondent's self-assessment of their emotional abilities (Mayer et al., 2004).

However, it should be noted that the present study conducted an exceptionally stringent test of incrementally validity, with multiple control variables that are known to be strongly associated with criteria. In contrast, many studies control only for personality or IQ. Brody (2004), for example, states that that the MSCEIT should show incremental validity over intelligence and Big Five personality traits. Therefore, the fact that it was able to demonstrate incremental validity over and above a broader range of predictors in the current study is particularly noteworthy.

Finally, where there were associations between EI subcomponents and criteria these did not always hold across all facets of university adjustment. Similarly, where EI measures could demonstrate incremental validity or explain unique variance in criteria, this was only for certain EI subcomponents, and even then was criterion-specific. The MSCEIT and the SEIS, in particular, had specific, rather than universal or widespread, relationships to the different facets of university adjustment.

Theoretically, the finding that trait and ability EI measures were only weakly correlated, and patterns of correlation, attenuation and incremental validity were similar across trait EI measures and yet distinct from the MSCEIT, provide further support for argument that trait and ability EI are different constructs (e.g., Petrides & Furnham, 2003; Van Rooy et al., 2005). To a lesser extent, the divergent pattern of results across different self-report EI measures also supports a distinction between the different conceptualisations or models of trait EI.

In comparing the performance of EI with non-EI study variables, personality was as strongly associated with university as the TEIQue (the best-performing EI variables in these analyses). Further, although explicit tests of incremental validity were not performed for non-EI study variables, personality was by far the superior predictor in terms of being able to explain unique variance in outcomes.

Overall the findings suggest that, with regard to university adjustment, both trait and ability EI each have something separate and useful to offer. However, it cannot be concluded that EI represents an important, heretofore undiscovered variable that is substantially distinct from or more potent than competing predictors.

#### *5.5.4 Limitations*

Many of the study limitations that relate to Study 1 also apply here. The same issues arise regarding the representativeness of the sample, the limitations inherent in a cross-sectional design, a lack of baseline measures of psychosocial variables, and the timing of the data collection (several weeks into the semester). Moreover, the somewhat restricted scope of the cognitive ability measure used in this study may have inflated the incremental validity results for ability EI. In a similar vein, it should be noted that the models employed in this study are not exhaustive: a multitude of predictors of adjustment to university have now been identified and it is not feasible to account for them all within a single study due to statistical issues, cost and participant burden. The present study included what were judged to be the most robust of the established predictors of adjustment that could also be considered to be personal or interpersonal strengths, and to have some conceptual overlap with EI. It should be borne in

mind that in some instances in the present study where residual variance has been attributed to EI, a more exhaustive model may have resulted in more variance in adjustment being explained by other related phenomena, and therefore less to the EI construct. However, whilst this might be important for researchers interested in explanatory models and the deconstruction of EI, it has less importance in terms of the practical applications of the findings; this is discussed in more detail below.

#### 5.5.5 *Implications of the Findings*

The findings of this research have theoretical and practical implications for researchers and educational practitioners. Clearly, the findings may be useful in terms of predicting potential adjustment difficulties, suggesting how students reporting such problems may be better supported, and more generally indicating how the transition to HE may be facilitated. However, the choice of instruments for this purpose will depend upon a number of considerations. With regard to screening, if the aim is to use a single measure, then the measure with the strongest association with university adjustment is likely to be the most appropriate choice. Of all the EI instruments the TEIQue was clearly the most strongly associated with criteria, and superior to all other study variables aside from personality. It would seem, then, that either of these instruments would perform similarly well as a pre-screener for adjustment difficulties. However, factors such as instrument cost and length should also be taken into account. As both TEIQue-SF and IPIP-50 are in the public domain then cost does not present a problem for either of these. With respect to administration time and participant burden, it should be noted that the IPIP comprises 50 items and the TEIQue only 30. Another advantage that the TEIQue may hold over the IPIP is that it may be better-received by respondents if presented to them as a test of emotional intelligence; since the publication of Goleman's book on EI in 1995, EI has been the focus of ongoing popular as well as research interest. Overall, therefore, it appears that the TEIQue would be the most suitable measure. However, in light of the findings of this study, practitioners should be aware that even though the measure may be a useful predictor of adjustment difficulties, it is not a reliable predictor of actual emotional abilities, and inferences along these lines should not be made.

If, on the other hand, the intention is to use a number of tests, then clearly if a measure of personality is going to be used, the TEIQue is likely to contribute little in addition to this. Conversely, if a number of non-personality measures are being used, then the IPIP would be a useful addition, in light of its impressive performance in predicting large amounts of unique variance in multiple adjustment criteria. The present study also suggests that the MSCEIT may contribute something useful in addition to other tests. However, again, the cost and length of the instrument must be taken into account; the 45-minute administration time, significant cost per instrument, and the fact that it has to be scored externally by the test publisher may be considered by many to be significant drawbacks that are disproportionate to the modest amounts of incremental validity afforded by it. According to Sechrest (1963), when considering incremental effects, comparisons should be made across instruments of approximately equivalent length and cost. Clearly, the present study went far beyond this with regard to length and the MSCEIT did well to demonstrate any incremental validity under these conditions. Whether it should be used in practical settings would depend on the measures already being used, and whether cost and respondent burden are significant factors. In high-stakes testing situations the additional information it provides may well be worth the time and cost investment.

In terms of remediating adjustment difficulties, it seems more intuitive to base interventions around EI measures rather than personality measures, since the former would relate to the learning of emotional skills whereas personality is generally seen a more stable, non-malleable aspect of the individual. Indeed, studies are accumulating that support the notion that emotional skills can be successfully taught, with associated improvements in educational outcomes (e.g., Qualter et al., 2007). However, as the TEIQue was most strongly related to criteria, and yet most closely related to personality, this questions the extent to which this measure would be useful as a basis for the development of interventions. Perhaps interventions could focus on the competencies on which the TEIQue focuses, whilst also incorporating the abilities underpinning the SEIS and ESES. However, the findings of the present study suggest that fostering students'

confidence in their emotional skills is at least as important as teaching actual skills, although the latter is likely to contribute to the former.

Finally, with regards to both screening and intervention, the fact that EI subcomponents were differentially related to adjustment criteria suggests that practitioners could direct their efforts towards only certain aspects of EI if only some facets of adjustment are of interest or concern.

In terms of implications for researchers, as stated above, the findings provide further evidence that trait and ability EI are different constructs. Thus, as noted by Van Rooy et al. (2005), emotional intelligence may be an example of the ‘jingle fallacy’ where distinct constructs share the same name; researchers need to be aware of this and not be misled by the label. Similarly, the findings suggest that researchers should not use self-report measures as proxies for tests of actual abilities. Finally, the differential patterns of associations among EI subcomponents and facets of university adjustment highlight the importance of performing analyses at both the global and subscale level for each construct.

#### 5.5.6 *Future Directions*

The current findings suggest a number of avenues for future research. As stated previously, the conclusions that can be drawn from the present study are limited to some extent by its cross-sectional design. Future research involving longitudinal studies and attempts to manipulate EI abilities or self-perceptions of EI abilities in quasi-experimental studies would be useful for making stronger causal inferences. This would appear to be particularly important with regard to self-perceptions of EI; one would reasonably expect transition experiences to influence these to a greater extent than they would actual abilities.

Future research might also explore the SACQ subscale ‘clusters’ (i.e., the distinct components of the subscales).<sup>27</sup> Although some of these comprise only a small number of items and there would be associated statistical/analytical implications associated with this, it would allow a finer-grained analysis of how EI subcomponents are related to specific facets of adjustment.

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<sup>27</sup> Academic adjustment comprises academic motivation, application, performance and satisfaction with the academic environment. Social adjustment has clusters relating to ‘general’, other people, nostalgia and the social environment. Personal-emotional is subdivided into emotional and physical aspects of well-being. Institutional attachment comprises satisfaction with university life, and, separately, satisfaction with their particular institution (Baker & Siryk, 1989).



Given that each of these clusters comprise quite distinct facets of the overarching subscale it is likely that they will be differentially related to EI in ways that may have important practical implications.

Another means of attaining greater insight into relationships between EI and adjustment would be to develop more complex models that consider EI in combination with other variables. For example, ability EI may be a more potent predictor of adjustment where the individual also has an internal locus of control or high self-efficacy. Characteristics such as these, which are associated with the deployment of effort, are likely to be implicated in whether the individual puts their theoretical knowledge to practical use in the real world. In such cases, links between EI and adjustment are likely to be stronger.

Also, in light of the potential shortcomings of the measure of cognitive ability employed, replication of the study including a more comprehensive test of cognitive ability, including a test of verbal ability, would provide further support for the argument that the MSCEIT can explain variance in university adjustment that is not explained by intellectual functioning.

A further means of conducting more stringent tests of the incremental power of particular EI instruments would be to assess their incremental validity over and above other EI instruments. This may involve instruments different to the ones employed here. Research using observer ratings of EI, as well as ability and self-report measures, may produce different results. Also, as noted by Van Rooy et al. (2005), progress in the area of EI is limited to some extent by the fact that research on ability EI tends to rely on the use of the MSCEIT; as new instruments that assess the ability domain become available we may move on to assessing EI constructs rather than merely individual instruments.

Finally, in light of the above suggestions that teaching emotional skills or encouraging positive self-perceptions may be a useful intervention technique, some effort should be deployed in the direction of understanding whether and to what extent particular aspects of EI are malleable and amenable to change. This would indicate which areas might be the more appropriate and fruitful targets of intervention efforts.

## CHAPTER 6: STUDY 3: LONGITUDINAL ADJUSTMENT TO UNIVERSITY

### 6.1 INTRODUCTION

Although university adjustment research has flourished in recent years, the majority of studies in this area are of a cross-sectional design, or measure adjustment at only one time point. Longitudinal methods, however, which involve taking multiple measures of the same variable over time, are often more powerful than cross sectional techniques (Shadish, Cook, & Campbell, 2002)<sup>28</sup> and afford numerous opportunities for more fully understanding the construct of university adjustment. Notwithstanding the various challenges associated with the use of some longitudinal techniques,<sup>29</sup> such an approach has utility in observing trends in adjustment over time, identifying key intervention points, and determining whether individual difference variables predict longitudinal patterns. The corollary to this latter aspect is that it facilitates conclusions regarding whether student characteristics are more strongly predictive of short- or long-term adjustment, and whether the effects of predictor variables persist over time. Measuring adjustment at multiple time points also takes account of the complexity of the academic year (Cooke et al., 2006) and, similarly, how adjustment challenges may alter over the course of a student's entire university experience.

Another important benefit is that it affords stronger causal inferences, by consideration of the temporal ordering of events (e.g., Rajulton, 2001). This is important in relation to university adjustment research since, as discussed in Chapter 2, Section 2.1.3, when 'predictor' variables are measured concurrently with university adjustment, or after starting university, it may be unclear whether certain variables (e.g., self-esteem or self-efficacy) are predictors of adjustment or outcomes brought about by the experience of the transition.

In reviewing the extant research on how levels of university adjustment change over time, there

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<sup>28</sup> Regarding the relative merits of the different types of longitudinal design, prospective panel studies, that involve the repeated sampling of the same individuals over time, have significant advantages over repeated cross-sectional studies of different samples, since the former control for differences between participants. Similarly, panel designs have advantages over retrospective longitudinal designs that rely on participants' own recollections of their experiences, since the latter are prone to inaccurate results due to, for example, participants forgetting, remembering inaccurately, or reinventing the past to suit their own purposes (e.g., Ross, 1989; Squire, 1989; Yarrow, Campbell, & Burton, 1970). As such, panel designs are generally viewed as superior to the alternatives (Ludlow et al., 2011).

<sup>29</sup> The major challenges inherent in prospective panel designs, which involve following the same participants over time, relate to time investment, cost, maintaining contact with participants, and, related to the latter, participant attrition (e.g., Rajulton, 2001; Ruspini, 2002; White & Arzi, 2005).

is accumulating evidence that they may fluctuate substantially over the course of an academic year, or the student's university career. As Baker (2002) notes, in relation to the SACQ instrument, of which he was a co-author:

“Our expectation from the beginning has been that adjustment-to-college variables as measured by the SACQ are not necessarily stable and enduring properties of individuals, but should be regarded as states that can vary with changes in a student's environment, life events, and personal characteristics” (p.19).

With regard to the precise nature of these fluctuations, however, the existing literature in the area presents a somewhat confusing and inconclusive set of results. This may be due to across-study differences in statistical methods, sampling (in terms of students, institutions and the time points at which measures are taken), how university adjustment is operationalised, and how participants are grouped for analysis. Certainly, no ‘typical’ pattern of adjustment appears to emerge.

Intuitively, one would perhaps expect that adjustment levels would be lowest early on in the first year (i.e., at the closest proximity to the stressor) and rise throughout students' university careers as they become more familiar with the environment and lifestyle, and learn to adjust and adapt. Indeed, some empirical work does attest to this pattern. In a prospective longitudinal study, Rice (1992) used the SACQ to explore the academic, emotional and social adjustment of students at a small, private US university with high admissions standards, and where most students live on campus. Using a repeated measures MANOVA design, and measuring adjustment at the start of Year 1 (October/November) and then two years later, adjustment was higher on all three adjustment facets at the second measurement. The results suggest that adjustment levels improve from the first to the third year of university. However, the extent to which these results are generalizable is unclear, given that data were collected at a small and select university, with high-performing students who may have been unusually capable of meeting the demands of the transition. However, other prospective research has also found increases in adjustment over time. In a study at a Canadian university, which focussed on aspects of well-being over the first year, Gall, Evans and Bellerose (2000) found that strain was highest, and well-being poorest, on entry to university with gradual improvements in adjustment

over the first year.

Further support for the notion of increasing levels of adjustment over time has been generated by cross sectional studies that compare adjustment scores in different academic years, using MANOVAs or t-tests. For example, in a study conducted at the same institution as Rice's (1992) study outlined above, Rice et al. (1995) found that second year students scored higher than first years on personal-emotional and academic adjustment (using the SACQ), curricular adjustment, maturity of goals, study skills and mental health (using the College Inventory of Academic Adjustment). Similarly, in comparing upperclassmen (third and fourth years) and freshmen (first years), Lapsley, Rice, and Shadid (1989) found that the former scored higher on social and personal-emotional adjustment. Academic stress was also found to be higher among underclassmen (first and second years) compared to upperclassmen in a study of African American college students at a historically black college (Baldwin et al., 2003).

More equivocal results were found, however, in a study of the adjustment of Chinese students in Japan (Jou & Fukada, 1996). Adjustment levels were measured at three, nine and 21 months from students' arrival in Japan, (using a sample of 36 items from the Freshman Transition Questionnaire [Baker, 1981] and an additional adjustment scale designed for use with foreign students in Japan). Differences in adjustment scores were not explored using inferential statistics as this was not the focus of the study, but there was a slight (though likely non-significant) increase in adjustment between nine and 21 months. However, it should be noted that data from only 33 participants were analysed, and scores may have been influenced by the fact that participants were international students for whom, as discussed in Chapter 2, there are likely to be additional adjustment challenges.

Studies by Baker and colleagues comparing just semester 1 and 2 of the first year, using the SACQ, have, however, reported declines in some aspects of adjustment. In a study conducted at two US universities, Baker et al. (1985) found statistically significant declines on social adjustment and institutional attachment at one of the universities. Moreover, in a subsequent replication (Baker & Schultz, 1992b) statistically significant declines in adjustment between

Semesters 1 and 2 were observed only on the academic subscale. The results suggest that declines or increases in adjustment may depend on characteristics of the institution or the students sampled. Relating to Baker et al.'s (1985) study, for example, differences in the culture, institutional climates and support available may explain why declines for social and institutional attachment were found for only one institution. The finding of academic adjustment declines in the replication study may have been due to changes in teaching practices by the later study, or students being less academically prepared for university than in earlier years.

Whilst the latter two studies do not find any declines in student well-being, and the studies discussed previously suggest increases in this aspect of adjustment, a US study by Pritchard et al. (2007) presents different findings. In a study of psychological adaptation to college (using a short version of the POMS), physical health and stress levels were measured at the beginning and end of the year (i.e., in orientation week before the start of classes and one month before the end of the second semester). Repeated measures ANOVA results indicated that physical health problems and negative moods (although not stress levels) had increased over the course of the year. However, Arthur and Hiebert (1996), in a study of students on a two-year academic course in the US, did find that students reported more stress at the end of the academic year compared to in September.

When measurements are taken closer together, however, a more complex picture emerges. This is demonstrated by a study conducted at a UK pre-1992 university focusing on the well-being, functioning and physical symptoms of students over the first year of university (Cooke et al., 2006). Well-being was measured at four time points (the summer before starting university, week 4 of semester 1, the end of semester 1 and the end of semester 2) using the GP-CORE (with higher scores indicative of higher levels of symptoms). Using a repeated-measures ANOVA design it was found that levels of strain fluctuated such that the 'shape' of student well-being once students had started university (i.e., at time points 2 to 4) formed an inverted 'U' shape. In other words, well-being was high towards the start of the first semester, had deteriorated by the end of the first semester and then 'recovered' by the end of semester 2

(although not to the extent of returning to the pre-transition, Time 1, level). Moreover, although students had been classified into 'normal' and 'vulnerable' categories, the inverted 'U' shape held for both. The researchers note that the results demonstrate the need for measuring adjustment at more than two time points in order to take account of the complexity of the academic year (i.e., if measurements had been taken only at week 4 of semester 1 and at the end of semester 2, this would have given the appearance of stability over time, and consistently high adjustment). However, this study does partially substantiate some of the previous research discussed: it suggests that the first year is a difficult time, with adaptation achieved by the end of the first year/beginning of second year of university. Moreover, whilst it suggests that emotional adjustment is high early in semester 1, this is not necessarily in conflict with the findings of aforementioned studies suggesting increases in adjustment, since scores may still have been significantly lower in comparison to subsequent years, had these been measured.

A qualitative diary study by Risquez et al. (2007) also consisted of frequent measurement points, and similarly provides evidence for adjustment being initially high, then deteriorating, and then 'recovering'. In this instance, however, the study took place over only the first semester of university, as opposed to the entire first year. Mature full-time students from a variety of disciplines at an Irish university (N=19) wrote, on a weekly basis over the first semester, their reflections on their adjustment to university life, with the four subscales of the SACQ as prompts. Thematic analysis of the journal-based reflections suggested a pattern characterised by what the authors refer to as a 'honeymoon period' of high adjustment (weeks one to two) followed by declining adjustment (weeks two to four), then increasing adjustment (weeks four to six). Finally, adjustment appears to 'plateau' at weeks seven to eleven. The authors propose that this reflects a sense of competence and confidence having emerged by the end of the first semester.

However, the question of how student characteristics may influence trajectories of adjustment has also received some attention, and, in accordance with the quote from Baker (2002), above, this has frequently proved to be a fruitful avenue of research. In a study conducted by Jackson et al. (2000) at a medium-sized Canadian university, patterns of adjustment depended on

students' prior expectations of university. The study employed a repeated measures ANCOVA design that controlled for high school GPA, self-esteem and pre-university levels of optimism, and measured university adjustment in Years 1, 2 and 4 using the SACQ. Students were arranged into 'clusters' on the basis of their expectations for starting university, which were labelled 'optimistic', 'prepared', 'complacent' or 'fearful'. Having fearful expectations was associated with the poorest trajectory of adjustment: lower initial university adjustment in the first year followed by a further decrease in year two. Although this group's adjustment subsequently increased in year 4, it was poorer than that of all other groups throughout the entire four-year period. In contrast, those with optimistic, prepared or complacent expectations had higher initial SACQ scores than the fearful group, with a generally steadily increasing trend over the four years. Stress scores, on the other hand, showed reasonable stability across the four cluster groups over the four years, although the fearful group's stress level was higher throughout in comparison to the other three groups.

Another study, that explored academic, social, and personal-emotional SACQ scores in a four-year US residential college, found an effect of students' goals (Conti, 2000). Using correlational and regression techniques, it was found that, although adjustment scores measured in late September and late November of the first semester were reasonably stable for the group as a whole, a different pattern emerged when the effect of students' goals (recorded the summer before starting university) were taken into account. Specifically, having autonomous goals (e.g., goals based on intrinsic motivation factors, as opposed to external drivers) strongly predicted positive change in social and emotional adjustment. To a lesser degree, reflection on (thinking about) one's goals predicted positive change in academic and emotional adjustment.

There is also some suggestion that patterns of adjustment may be influenced by students' initial levels of adjustment. For example, using a repeated measures MANOVA design, Baker and Siryk (1986) found that those with low SACQ adjustment scores in semester 1 showed increased levels of adjustment in the second semester. Conversely, those who were well-adjusted in semester 1 tended to have lower semester 2 scores. However, the researchers suggest the results are more likely to merely represent the statistical phenomenon of regression

towards the mean (where more extreme scores will tend to be closer to mean scores on subsequent testing; Shaughnessy & Zechmeister, 1990) rather than a meaningful effect.

Alternatively, however, one could also infer from Baker and Siryk's results that adjustment difficulties may be ameliorated with exposure to the environment. In a study investigating how prior racial experiences influence the adjustment of black students at white colleges, Graham, Baker, and Wapner (1984), using the SACQ and repeated measures ANOVA, found that those with greater rates of prior interracial experience had higher levels of adjustment. However, those who had less prior experience, and lower initial rates of adjustment, showed greater rates of improvement when adjustment was measured three times over the academic year (October, December and January/February). The authors' interpretation of the findings is that initial deficits may be readily overcome.

A substantially different analytical approach was taken by Duchesne et al. (2007), who used a group-based trajectory method (Nagin, 1999) to explore of longitudinal trends in the adjustment of Canadian science students. In this study, academic and emotional adjustment were assessed using the SACQ at three time points over a two-year period: the end of the last year of high school, the end of the first year of university and the end of the second year of university. A two-group trajectory solution was identified for both facets of adjustment, with groups labelled 'high stable' and 'decliner' for each. Moreover, antecedents of trajectory group membership were identified, in that having received less involved and less autonomy-supportive parenting was associated with membership of the 'decliner' group for both emotional and academic adjustment.

In summarising, notwithstanding some contradictory and inconclusive results regarding their specific pattern, the aforementioned literature strongly suggests that fluctuations occur in levels of adjustment over time, and, moreover, they that they do not necessarily occur in the same way for all students.

As far as the author is aware, no study has explored longitudinal patterns of student adjustment in a UK post-1992 institution, where the student body is diverse and possibly less well-prepared



to adapt to the university culture, and no UK study has explored long-term patterns of adjustment using the SACQ. Further, studies exploring the longitudinal trajectories of all four facets of the SACQ and their similarity to or distinctiveness from each other have yet to be reported in the literature. Additionally, in view of some promising preliminary findings in the literature that suggest that adjustment trajectories may be contrasted on the basis of individual differences, a worthwhile next step would be to explore other variables that may have some utility in this regard. Such research would have important practical implications in terms of understanding which facets of adjustment are most problematic (in terms of decreasing or chronically low trajectories), indicating appropriate intervention points, and indicating which student characteristics may be risk or protective factors for long term adjustment outcomes.

## **6.2 CURRENT STUDY**

### *6.2.1 Overview*

The present research seeks to build on previous chapters in this thesis, and address some of the gaps in the literature outlined above, by exploring longitudinal adjustment to university in a UK post-1992 institution. Specifically, the study will explore patterns of adjustment at three time points over the first two years of university, exploring the four facets of the SACQ separately, and in aggregate (i.e., ‘overall adjustment’), in order to learn more about their trajectories over time. The research will also explore whether the four aspects of adjustment follow a different developmental course from each other, and whether some of the psychosocial variables identified as positive cross-sectional predictors of adjustment in earlier chapters of this thesis (viz., emotional intelligence, social support, locus of control, self-efficacy, self-esteem and attachment security) also predict long-run patterns of adjustment.

### *6.2.2 Research Questions*

The following research questions guide the present study:

1. Do SACQ scores change over time?
2. Do the four adjustment subscales follow different patterns from each other over time?
3. How are individual differences related to patterns of adjustment over time?

### 6.2.3 Hypotheses

Due to the paucity of research in this area, and the conflicting findings in the existing literature, no specific hypotheses are advanced in the present study.

## 6.3 METHOD

### 6.3.1 Design

A three-wave prospective longitudinal design was employed. Questionnaires assessed demographic, psychosocial and adjustment variables at Time 1. Adjustment data only were collected at subsequent time points. Adjustment scores were within-participant and psychosocial scores were between-participant variables.

### 6.3.2 Participants

The original pool of participants comprised 306 first year students. These are as described in Study 1 (the cross-sectional precursor to this study; see Chapter 3, Section 3.3.2). These participants were requested to provide data on four separate occasions. In order to maximise statistical power and minimise the replacement of missing data, only time points 1, 2 and 4 were used in the present analyses. Data analyses were restricted to those participants who had provided Time 1 data (i.e., provided baseline psychosocial and adjustment data) as well as data for at least two of the three time points. This resulted in a final sample of 117 participants (mean age = 22.91, SD = 7.22; age range 17-50). There were 11 (9.4%) males and 106 (90.6%) females. Self-reported ethnic origins were as follows: White (n = 98; 83.8%), Asian/Asian British (n = 12, 10.2%), other (n = 7, 6.0%). Over two-thirds of participants (n = 73; 62.4%) were first generation students and the remainder (n = 44; 37.6%) second generation. Regarding residential status, 36 students (30.8%) had moved away from home to attend university. The majority of students (n = 88, 75.2%) were single (never married), 14 (12.0%) were married, seven (6%) students were cohabiting, four (3.4%) students were separated and three (2.6%) students were divorced. No marital status information was given by one (.8%) participant. Further details of sample attrition and associated differences in sample characteristics are presented in Section 6.4.2.

### 6.3.3 *Materials*

All of the following measures were administered at Time 1. At subsequent time points, only SACQ (university adjustment) data were collected. Measures are described in detail in Study 1 (see Chapter 3, Section 3.3.3).

Emotional intelligence: Schutte Emotional Intelligence Scale (SEIS; Schutte et al., 1998)

Self-esteem: Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965)

Self-efficacy: Generalised Self-Efficacy Scale (GSES; Schwarzer & Jerusalem, 1993)

Attachment: Relationship Questionnaire (Bartholomew & Horowitz, 1991)

Locus of control: Multidimensional Locus of Control Scale (Levenson, 1981).

Social support: Social Provisions Scale (SPS; Cutrona & Russell, 1987).

Adjustment to university: Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989). Coefficient alphas for Time 1 are as described in Chapter 3. Reliabilities for the additional two administrations of the SACQ (calculated using only the reduced sample of  $N = 117$ ) ranged from .86 (personal-emotional adjustment) to .95 (full-scale score) for Time 2, and .84 (institutional attachment) to .94 (full scale score).<sup>30</sup>

### 6.3.4 *Procedure*

The study was approved by the research ethics boards of the School of Psychology of the University of Central Lancashire. Written informed consent was obtained from all participants. Data collected for Study 1 during the second month of university provided baseline measures of psychosocial variables and adjustment data for Time 1 (see section 3.3.4 for details of procedure for Time 1). Adjustment data were then collected on three further occasions (Times 2, 3 and 4) approximately 6 months apart. Thus data were collected approximately 2, 8, 14 and 20 months from program initiation. Questionnaires pertaining to Times 2, 3 and 4 were administered in

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<sup>30</sup> The full scale score referred to in the present study is the aggregate score consistent with ANOVA main effects (i.e., calculated by summing the four SACQ subscales). This is in contrast to previous studies in this thesis that employ the 'true' SACQ score by summing all 67 items individually. Although the former generates a higher absolute value this was not considered to be a cause for concern, since SACQ scores in the present analyses were scaled to range from 1-9. This substantially attenuates any discrepancies.

class, delivered to the school office of students' academic department, or, if students had previously provided address details, by sending the questionnaires to their home address. Completed questionnaires were returned in class, via internal mail or by Royal Mail. Participation was incentivized by entering respondents into a draw for Amazon vouchers at each time point.

## 6.4 RESULTS

### 6.4.1 Overview of the Statistical Analyses

All analyses were performed using SPSS version 19. Descriptive statistics, t-tests and Little's MCAR test were employed to explore the extent and implications of sample attrition and missing data, and the expectation maximisation algorithm (Dempster, Laird, & Rubin, 1977) used to replace missing longitudinal adjustment data. Descriptive statistics indicated longitudinal patterns of adjustment, and repeated measures one-way ANOVAs explored whether changes over time for each SACQ facet were significant. A factorial ANOVA with Helmert contrasts was used to test whether longitudinal patterns varied across different facets of adjustment. Mixed design repeated measures two-way ANOVAs explored whether longitudinal patterns differed on the basis of psychosocial predictors. Sphericity was assessed via Mauchley's test and the Greenhouse-Geisser conservative F-test was used to interpret the ANOVA where appropriate. For comparability, analyses employed SACQ subscale scores that had been re-scaled by dividing by the number of subscale items so that all scores ranged from 1 to 9. Scores on psychosocial variables were subjected to a median split to create a dichotomous between-subject variable which classified each participant as 'high' or 'low' for each psychosocial variable.<sup>31</sup> An alpha level of .05 was set for hypothesis testing.

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<sup>31</sup> Although the median split technique has been criticised on a number of grounds (e.g., reduction of statistical power, the creation of artificial dichotomies and the arbitrariness of the split point; Cohen, 1983; MacCallum, Zhang, Preacher, & Rucker, 2002), the creation of groups was necessary to conform to the requirements of the ANOVA method employed in the current study, and the technique was considered to be a convenient heuristic. The dichotomisation of psychosocial variables by means of a median split is not uncommon in the literature (e.g., Dandeneau, Baldwin, Baccus, Sakellaropoulo, & Pruessner, 2007; Graham & Clark, 2006) and the choice of the median as a cut-point was deemed appropriate in the absence of any established cut-points for the variables under study. Moreover, although a tertiary or quartile split would have facilitated the comparison of more extreme groups, a dichotomous split enabled the sample size to be maintained.

#### 6.4.2 Data Screening

Only 38% of the 306 students who provided Time 1 data provided sufficient subsequent data to be included in the present analyses (i.e., an overall attrition percentage of 62%).<sup>32</sup> In order to investigate the effects of this sample loss on the representativeness of the final sample, attrition analyses were undertaken. A series of t-tests indicated no statistically significant differences (all  $p$ s > .05) on any baseline measures of psychosocial or university adjustment variables reported in the present study when students included in analyses (N=117) were compared to those excluded (N=189). Crosstabs analysis on demographic data did indicate, however, that males were more likely than females to be lost to follow-up. Missing Time 1 item-level scale data were replaced during Study 1, described in Chapter 3 (see Section 3.4.2 for full details of the strategy employed, and rationale). As a further means of maximising the use of available data, missing SACQ subscale scores totals for Times 2 and 4 were imputed using SPSS.<sup>33</sup> As Little's MCAR test indicated that the missing data mechanism in the current dataset was Missing At Random,  $\chi^2(45) = 57.48$ ,  $p = .100$ , the expectation maximisation technique was deemed appropriate for the imputation of missing data (Tabachnik & Fidell, 2007).

#### 6.4.3 Preliminary Analyses

Descriptive statistics (means and standard deviations) for adjustment scores over the three time points were calculated for high and low levels of psychosocial variables adjustment separately, and combined. These are reported in Table 6.1.

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<sup>32</sup> As this study was a longitudinal exploration of the Study 1 cohort, its response rates were conditioned by those achieved in Study 1. They were as follows: 306 participants at T1; 99 of the original T1 cohort (32%) at T2, 69 (23%) at T3, and 65 (21%) at T4. This degree of attrition, although not uncommon in longitudinal studies, resulted in the decision to maximise the use of available data by employing only three of the four time points, and using the E-M technique to replace data where appropriate.

<sup>33</sup> To reiterate, participants could only be missing *one* of these time points, *not both*, to be included in the present analyses.

Table 6.1: Means (M) and Standard Deviations (SD) for Adjustment Variables

Adjustment type	T1 (Month 2) M (SD)	T2 (Month 8) M (SD)	T3 (Month 20) M (SD)
<b>SACQ Total</b>			
Overall	6.37 (0.96)	6.39 (1.01)	6.36 (0.96)
Low Attach-S	6.16 (0.97)	6.21 (1.00)	6.17 (0.96)
High Attach-S	6.69 (0.88)	6.65 (0.97)	6.63 (0.93)
Low LOC-I	6.17 (1.06)	6.23 (1.06)	6.21 (1.06)
High LOC-I	6.58 (0.80)	6.56 (0.92)	6.51 (0.84)
Low Self-esteem	5.97 (0.97)	6.08 (1.03)	6.08 (0.98)
High Self-esteem	6.81 (0.73)	6.73 (0.87)	6.66 (0.85)
Low Self-efficacy	6.10 (1.00)	6.07 (1.02)	6.03 (0.94)
High Self-efficacy	6.64 (0.85)	6.71 (0.89)	6.69 (0.87)
Low Support	6.01 (0.94)	6.13 (0.95)	6.13 (0.88)
High Support	6.75 (0.84)	6.65 (1.00)	6.60 (1.00)
Low EI	6.02 (1.00)	6.17 (0.91)	6.11 (0.92)
High EI	6.72 (0.79)	6.60 (1.05)	6.61 (0.95)
<b>SACQ-A</b>			
Overall	6.39 (1.03)	6.19 (1.16)	6.05 (1.01)
Low Attach-S	6.16 (1.04)	6.06 (1.19)	5.89 (1.01)
High Attach-S	6.70 (0.96)	6.39 (1.12)	6.28 (0.97)
Low LOC-I	6.25 (1.14)	6.10 (1.25)	5.91 (1.06)
High LOC-I	6.53 (0.89)	6.29 (1.07)	6.20 (0.93)
Low Self-esteem	6.09 (1.07)	5.99 (1.22)	5.83 (1.02)
High Self-esteem	6.71 (0.89)	6.42 (1.06)	6.29 (0.94)
Low Self-efficacy	6.05 (1.06)	5.91 (1.17)	5.75 (0.96)
High Self-efficacy	6.72 (0.89)	6.47 (1.10)	6.35 (0.97)
Low Support	5.99 (1.04)	5.92 (1.12)	5.76 (0.97)
High Support	6.79 (0.86)	6.47 (1.14)	6.35 (0.97)
Low EI	6.06 (1.04)	6.02 (1.09)	5.83 (0.93)
High EI	6.71 (0.92)	6.36 (1.21)	6.27 (1.04)
<b>SACQ-S</b>			
Overall	6.07 (1.16)	6.30 (1.08)	6.24 (1.15)
Low Attach-S	5.83 (1.12)	6.12 (1.05)	5.99 (1.17)
High Attach-S	6.42 (1.15)	6.59 (1.06)	6.58 (1.06)
Low LOC-I	5.85 (1.23)	6.06 (1.16)	6.07 (1.25)
High LOC-I	6.29 (1.06)	6.55 (0.94)	6.41 (1.02)
Low Self-esteem	5.60 (1.14)	5.91 (1.05)	5.86 (1.18)
High Self-esteem	6.58 (0.95)	6.73 (0.95)	6.65 (0.98)
Low Self-efficacy	5.86 (1.22)	5.96 (1.07)	5.83 (1.11)
High Self-efficacy	6.28 (1.08)	6.63 (1.00)	6.65 (1.05)
Low Support	5.69 (1.11)	5.98 (0.99)	5.96 (1.06)
High Support	6.46 (1.09)	6.63 (1.08)	6.53 (1.18)
Low EI	5.72 (1.16)	6.10 (0.99)	5.98 (1.14)

High EI	6.42 (1.07)	6.50 (1.14)	6.50 (1.12)
<b>SACQ-P</b>			
Overall	5.91 (1.35)	5.98 (1.32)	6.15 (1.32)
Low Attach-S	5.64 (1.43)	5.81 (1.31)	5.93 (1.28)
High Attach-S	6.32 (1.13)	6.23 (1.30)	6.48 (1.30)
Low LOC-I	5.65 (1.49)	5.85 (1.41)	6.00 (1.42)
High LOC-I	6.19 (1.14)	6.11 (1.21)	6.30 (1.20)
Low Self-esteem	5.46 (1.36)	5.74 (1.38)	5.86 (1.38)
High Self-esteem	6.41 (1.16)	6.24 (1.20)	6.46 (1.18)
Low Self-efficacy	5.57 (1.39)	5.66 (1.40)	5.83 (1.36)
High Self-efficacy	6.25 (1.23)	6.30 (1.15)	6.47 (1.21)
Low Support	5.56 (1.37)	5.80 (1.36)	6.01 (1.34)
High Support	6.28 (1.23)	6.17 (1.25)	6.29 (1.29)
Low EI	5.54 (1.48)	5.70 (1.32)	5.81 (1.29)
High EI	6.28 (1.10)	6.26 (1.26)	6.48 (1.27)
<b>SACQ-I</b>			
Overall	7.12 (1.09)	7.08 (1.13)	7.01 (1.05)
Low Attach-S	6.99 (1.11)	6.86 (1.16)	6.88 (1.08)
High Attach-S	7.30 (1.06)	7.40 (1.04)	7.18 (0.99)
Low LOC-I	6.93 (1.21)	6.89 (1.23)	6.87 (1.14)
High LOC-I	7.31 (0.94)	7.27 (0.99)	7.14 (0.94)
Low Self-esteem	6.72 (1.14)	6.69 (1.22)	6.78 (1.08)
High Self-esteem	7.55 (0.86)	7.51 (0.85)	7.25 (0.97)
Low Self-efficacy	6.93 (1.18)	6.73 (1.20)	6.71 (0.98)
High Self-efficacy	7.30 (0.97)	7.42 (0.96)	7.30 (1.04)
Low Support	6.79 (1.08)	6.82 (1.13)	6.78 (0.96)
High Support	7.45 (1.00)	7.35 (1.08)	7.23 (1.09)
Low EI	6.76 (1.17)	6.86 (1.06)	6.82 (1.06)
High EI	7.47 (0.89)	7.30 (1.17)	7.19 (1.01)

*Note.* SACQ Total = Overall adjustment; SACQ-A = Academic adjustment; SACQ-S = Social adjustment; SACQ-P = Personal-emotional adjustment; SACQ-I = Institutional attachment; Attach-S = Secure attachment; LOC-I = Internal locus of control; Support = Social support; EI = Overall emotional intelligence using the SEIS (Schutte et al., 1998). Higher scores on psychological variables are indicative of higher levels of the construct.

Inspection of Table 6.1 and Figure 6.1 indicates that trends for overall adjustment appear stable over time, although fluctuations in adjustment levels are apparent when patterns are explored separately for the individual facets of adjustment: academic adjustment and institutional attachment exhibit a decreasing trend whilst personal-emotional adjustment increases. Social adjustment shows evidence of increases up to March of the first year, and declines thereafter. Throughout the entire study period, institutional attachment levels are notably higher than the other adjustment facets and the overall score. Moreover, Table 6.1 suggests that students with higher levels of psychosocial variables report higher levels of adjustment than their lower-scoring counterparts and that this trend is maintained across all three time points.

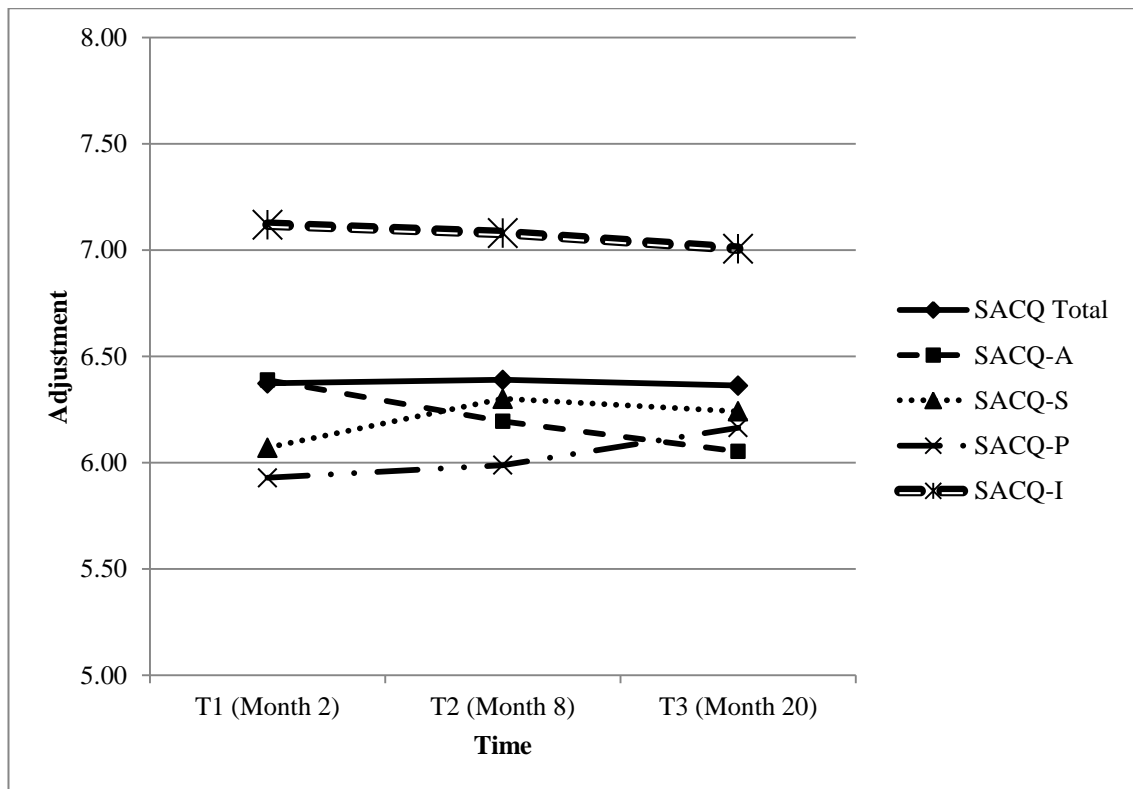


Figure 6.1: Mean Patterns of SACQ Scores from Month 2 to Month 20 of University

#### 6.4.4 Do SACQ Scores Change Over Time?

To determine whether there were significant changes in adjustment scores over time, a series of five one-way ANOVAs for repeated measures (three time points) were conducted, with time as the within-subject variable, followed by post-hoc Bonferroni comparisons to identify specific differences between groups. Means and standard deviations are presented in Table 6.1. There were no significant time trends for overall adjustment,  $F(1.47, 170.48) = 0.08$ ,  $p = .87$ , personal-emotional adjustment,  $F(1.93, 223.71) = 2.35$ ,  $p = .10$ , and institutional attachment,  $F(1.65, 191.20) = .82$ ,  $p = .42$ . However, there were changes in academic,  $F(1.61, 186.25) = 9.98$ ,  $p < .001$ , and social,  $F(1.45, 167.91) = 3.93$ ,  $p < .05$ , adjustment. Post hoc Bonferroni comparisons exploring these effects indicated that academic adjustment at Time 3 was significantly lower than at Times 1 and 2 ( $p < .001$  and  $p < .05$ ), and that social adjustment at Time 2 was significantly higher than at Time 1 ( $p < .05$ ). These trends are depicted in Figure 6.1.



#### 6.4.5 *Do the Four Adjustment Subscales Follow Different Patterns from Each Other Over Time?*

The next stage of analysis investigated whether the four SACQ subscales followed different patterns from each other over time. This question was addressed using a 4 (SACQ) x 3 (Time) repeated measures ANOVA. There was no main effect of time,  $F(1.47, 170.48) = 0.08$ ,  $p = .87$ , suggesting that overall SACQ scores are relatively stable. There was, however, a main effect of SACQ,  $F(1.98, 229.07) = 77.89$ ,  $p < .001$ , indicating that certain facets of adjustment had higher or lower scores than others. Inspection of post-hoc Bonferroni tests indicated that institutional attachment was higher than the other three facets of adjustment (all  $ps < .001$ ), and that the comparison between academic adjustment and personal-emotional adjustment narrowly missed significance (academic adjustment being the higher score;  $p = .052$ ). There was also a significant interaction effect between SACQ and Time,  $F(4.15, 481.33) = 8.35$ ,  $p < .001$ , indicating a significant difference in the slopes for the four adjustment subscales. Follow-up Helmert contrasts of the SACQ x Time interaction were conducted to explore this interaction. These contrasts compare the mean for each condition to the pooled mean of succeeding conditions. A total of six Helmert contrasts were undertaken, with SACQ scores differently-ordered until the slope of each subscale had been compared with that of every other. A Bonferroni correction for alpha was made, based on the total number of statistical tests (i.e.,  $\alpha = .05/6 = .008$ ). Four significant differences in slopes were identified. When Time 1 was compared to the average of Times 2 and 3, differences were found between social adjustment and institutional attachment (social adjustment increasing and institutional attachment decreasing),  $F(1, 116) = 32.09$ ,  $p < .001$ , academic and social adjustment (academic adjustment decreasing and social adjustment increasing),  $F(1, 116) = 26.87$ ,  $p < .001$ , and academic adjustment and personal-emotional adjustment (academic adjustment decreasing and personal-emotional adjustment increasing,  $F(1, 116) = 22.22$ ,  $p < .001$ ). These two subscales also differed in the same direction between Time 2 and Time 3,  $F(1, 116) = 8.21$ ,  $p < .01$ . See Figure 6.1.

#### 6.4.6 *How are Individual Differences Related to Patterns of Adjustment Over Time?*

Finally, the question of whether patterns of adjustment depend on students' psychosocial

characteristics was explored. In order to test for such effects, a series of 30 (5 SACQ scores x 6 psychosocial variables) two-way mixed repeated measures ANOVAs with time as the within-participants and psychosocial variables as the between-participants factors were conducted. Inspection of interaction effects indicated that there were no significant differences between high and low psychosocial groups on measures of adjustment over time, suggesting that psychosocial characteristics are not associated with different adjustment patterns. See Table 6.1 for means and standard deviations.

## **6.5 DISCUSSION**

### *6.5.1 Overview*

This study presents the results of longitudinal university adjustment research that explored trajectories of adjustment over the first two years of study at a UK post-1992 institution. Research questions related to whether there were fluctuations in levels of adjustment over time for each of the facets, whether there was evidence of heterogeneity when longitudinal patterns for the four adjustment subscales were compared, and whether psychosocial variables influence patterns of adjustment over time.

### *6.5.2 Main Findings*

#### *6.5.2.1 Do SACQ Scores Change Over Time?*

With regard to changes in levels of adjustment over time for the separate adjustment scores, it is important to note that overall adjustment maintained a stable trend over time, whereas certain subscales did not. This highlights the usefulness of exploring the separate facets of adjustment separately from each other, and from the overall score, and that use of only the overall adjustment score may obscure important differences at the subscale level, as cautioned by Baker and Siryk (1989). In the present study, academic adjustment demonstrated a significant decreasing trend and social adjustment an increasing trend at different times over the 18-month period. The remaining subscales (i.e., personal-emotional adjustment and institutional attachment), however, did not display any significant time trends.

Perhaps the most striking profile is that of the academic adjustment subscale. This showed a

declining trend between the first and third measurement points (i.e., between October of the first year and March of the second year) and between the second and third measurement points (i.e., between March of the first year and March of the second year). Moreover, this was the only subscale where there was a significant declining trend. This is partially consistent with some of the existing adjustment literature (e.g., Baker & Schultz, 1992b, found declining academic adjustment over the first semester. That this effect continues to be evident, notwithstanding ongoing efforts to smooth transitions and improve the educational experience, is somewhat concerning.

An important consideration is that when the first adjustment measure was taken, in October of the first year, most students would have little on which to base their assessment of their academic adjustment. At this stage most would not yet have received an assignment (or at least not received feedback) nor undertaken any exams. As such, their initial perception of their academic adjustment may have been an inaccurate assessment of their true academic situation, which would only become apparent later on. Instead, the assessment may have been based not only on their academic adjustment at university, but also on their academic self-concept (i.e., their general view of themselves as a student and their academic abilities; e.g., see Marsh & Martin, 2011), or prior educational experiences. As discussed in the literature review presented in Chapter 2, more demanding academic work, and associated declines in academic performance or positive feedback are major challenges associated with the transition to university (e.g., Hager et al., 2003; Krause, et al., 2005). Similarly, declines in academic adjustment can be interpreted as a response to finding oneself in a situation similar to the big-fish-little-pond effect (BFLPE; e.g., Marsh & Hau, 2003). According to this theorising, being in an academically more selective institution results in lower level of academic self-concept compared towards being in a less selective environment. Analogous to this is the situation in which many beginning university students find themselves: having to deal with the reality of being only academically average, or less than average, in comparison to one's peers when this was not the case in earlier educational environments.

In light of the modular design of most of the courses in the institution in the present study, with

exams undertaken on a semester basis, it is likely that by Time 2, first semester exams and coursework will have been undertaken. As such a more realistic assessment of the academic situation may be made at this point; note that there are also substantial declines in academic adjustment between Times 1 and 2, although these did not reach statistical significance. By Time 2, semester two exams would also have been imminent, and this also was not the case at Time 1. These academic stresses and concerns may have resulted in declines in adjustment. Similar explanations may explain the statistically significant declines between Times 2 and 3, since at this point, more academically challenging, second year, work would have been undertaken, and at this juncture second year exams, which contribute to the student's final degree classification, are impending.

Whilst the foregoing discussion suggests that decreasing levels of academic adjustment do not necessarily imply that things have gone awry, academically-speaking, that is not to say that such findings do not require further consideration. If such declines are of concern to the student, this may lead to distress, disillusionment, loss of motivation, or even dropout. Duchesne et al. (2007) found that academic and personal-emotional adjustment were associated (i.e., participants in the 'high stable' or 'decliner' trajectory for one aspect of adjustment were likely to be in the same trajectory classification for the other), suggesting that these facets of adjustment may be mutually reinforcing. However, inspection of Figure 6.1, above suggest that in the present study, declines in academic adjustment are not matched by similar declines in personal-emotional adjustment (see section 6.5.2.2, below, for a discussion of this relationship based on the results of inferential statistics). Whilst it would be unwise to conclude from this that academic problems do not affect a student's well-being (in view of the present analyses being based only on average effects) they do suggest that the two do not always proceed in lock-step. Taken together with the fact that overall adjustment, social adjustment and institutional attachment each evidence either increasing or stable patterns over the same time period, it may be tentatively suggested that the academic adjustment declines do not necessarily have serious or far-reaching effects.

Turning to social adjustment, the increases observed between October and March of the first

year (and the non-significant increase that is observed into the second year) are broadly consistent with the findings of Rice (1992), although Baker et al. (1985) reported declines in social adjustment over the first year of university at one of the institutions studied, and no significant differences in the other. The results of the current study may reflect the fact that by Time 2, students have had the opportunity to acclimatize, make friends and integrate into university life (although it should be noted that even initial mean levels of social adjustment were high). To put it another way, the results suggest that increased exposure to the university environment positively influences social adjustment. The fact that increases in social adjustment do not continue on a similar, significantly increasing trajectory into the second year (although, as noted previously, non-significant increases are evident) may indicate that most of the social adaptation takes place during the first year, or that academic concerns have begun to take more of a priority and are at odds with social adjustment. The overall trajectory of this particular facet of adjustment (i.e., its non-linear pattern) also highlights that where measures of adjustment are taken less frequently, interim fluctuations in patterns of adjustment may go undetected.

In contrast, the institutional attachment subscale maintained a stable and high level over time. This is consistent with the findings of Baker and Schultz (1992b) who found no changes in this subscale between semester one and semester two of the first year, although the present findings are in contrast to those of Baker et al. (1985) who found statistically significant declines on institutional attachment at one of the two universities in their study. As noted by the authors, however, the fact that only one of the two institutions studied showed a decline is probably related to differences in the cultures of the institutions themselves. The current finding of high-level stability over time is promising, therefore; it suggests that there is little sense of dissatisfaction and disillusionment with the student experience in the present environment. A possible explanation for this is that moves in recent years to make universities and education more student-focused and accessible have had the desired effect and the facilities and environment meet their needs. However, see Section 6.5.2.2, below, for further comments regarding this subscale.

The personal-emotional subscale of the SACQ, with its focus on the student's psychological and physical health, is similar to other constructs referred to in the longitudinal adjustment research adjustment literature (viz., mental health, well-being, physical health problems, negative moods stress, strain, anxiety and depression). That personal-emotional adjustment was stable over time in the present study is in accord with the findings of Baker and Schultz (1992b) and Baker et al. (1985), who explored the personal-emotional subscale of the SACQ over the first two semesters and also with those of Pritchard et al. (2007) which indicated stable stress levels over the first year of university. However, the findings contrast with studies that have found increases in personal-emotional adjustment, or similar constructs, over the first year (Gall et al., 2000) or the first two (Rice, 1992) or four (Lapsley et al., 1989; Rice et al., 1995) years of university and those that have found declines over the first year (Arthur & Hiebert, 1996; Pritchard et al., 2007) or between years one and three (Baldwin et al., 2003).

First, it should be borne in mind that the personal-emotional subscale of the SACQ relates to the student's general physical and psychological well-being. For this scale in particular, therefore, the absence of baseline, pre-transition, measures makes it difficult to confidently attribute scores on this measure to the transition experience. As such it is perhaps the most 'contaminated' of the SACQ scores, likely to be influenced by various other aspects of the student's life. Further, it is likely that scores on this SACQ facet are influenced by other adjustment aspects. It is unlikely, for example, that a student would experience high levels of well-being whilst struggling academically, lacking friends, or being generally unhappy with their life as a student. Perhaps therefore, the stability over time reflects fluctuations in the problems students face: as noted earlier, it appears that social adjustment improves and academic problems increase. The fact that the literature in this area draws such different conclusions about what happens to students' well-being over time, and indeed that the results of this study conflict with much of it, is possibly due to differences in the measuring instruments used.

The personal-emotional subscale of the SACQ may oversimplify matters somewhat by combining psychological and physical well-being and obscuring important differences between the two (note, for example, that some of the research in the literature review focuses only on

psychological well-being or on physical well-being). Even in studying psychological aspects of well-being, important distinctions have been made. For example, Cooke et al. (2006) concluded that the first year of university is characterised by high levels of anxiety, but not depression; both of these aspects, as well as other indicators of psychological well-being, are assessed jointly in the psychological 'cluster' of the SACQ personal-emotional subscale.

Moreover, as with academic adjustment, it is likely that the timing of administration influences personal-emotional scores. It is conceivable that students' moods and well-being can alter substantially over relatively short periods of time, for example depending on whether deadlines or exams are imminent or have just been completed, whether holidays have just been taken or are due. It is also possible that students on the same course share a common experience with regard to some of these considerations. This may have biased the present results somewhat and introduced a confounding factor, given that participants were drawn from a variety of academic disciplines, although two in particular dominated (psychology and nursing). Also in relation to timing, the possibility that students' sense of well-being may fluctuate considerably means that shifts in adjustment may have been missed in the present study. For example, in Cooke et al.'s (2006) study, which was conducted over the first two semesters, the second of three time points (at the end of semester one) was characterised by a significant decrease in well-being, whilst time points one and three were associated with a similarly high level. In summarising, it becomes clear that apparent stability over time with regard to this adjustment facet in particular should be treated with some caution and followed up with further investigations that address the issues outlined above.

#### *6.5.2.2 Do the Four Adjustment Subscales Follow Different Patterns from Each Other Over Time?*

The next research question related to whether the four adjustment subscales demonstrated different trajectories over time. These longitudinal patterns were found to differ from each other in a number of respects. Of the four differences detected, three of these were when the first measurement point was compared with later adjustment, and two of these three were differences when academic adjustment was compared with personal-emotional and social

adjustment. Specifically, decreasing levels of academic adjustment contrast with stable personal-emotional and increasing social-emotional adjustment. The findings indicate that academic declines are not necessarily associated with declines in other areas of adjustment.

Over the same time scale, differences are observed between the increasing social adjustment and decreasing institutional attachment trajectories (although in neither case are the shifts in the levels of the adjustment for the separate facets significant). A similar pattern is observed between March of the first year and March of the second year, where increasing levels of personal-emotional adjustment contrast with decreasing levels of academic adjustment, although again in neither case are the changes in individual trajectories significant.

Overall, the findings suggest that students face varying challenges over their period of study, and that while exposure to the university environment improves some aspects of adjustment, it may have a substantially more deleterious effect on others. The results suggest that the greatest disparities are found between academic and personal-emotional adjustment, whose distinctive trajectories are evident over the whole length of the present study. That academic adjustment also declines in relation to social adjustment would indicate that in some respects this may be regarded the most problematic adjustment facet.

The findings regarding the institutional attachment scale also warrant some attention. Although main effects of adjustment scores were not the focus of the present study, the striking overall difference in institutional attachment scores when compared with other facets of adjustment necessitates some comment. To reiterate, this scale measures the individual's feelings about being a student, and about being at their specific institution in particular, and, additionally comprises items that other empirical work has linked to student dropout. In reviewing the items on the scale that specifically relate to students' feelings about student life and their university, it is apparent that many of these are likely to be answered at the extreme low (or high if a positively-worded item) end of the scale, unless the student is feeling quite substantial levels of distress or dissatisfaction. Items from this subscale that illustrate this point are 'I am pleased now about my decision to go to university', 'I wish I were at another college or university', 'I



expect to stay at this college for a bachelor's degree', 'Lately I have been giving a lot of thought to transferring to another college', 'Lately I have been giving a lot thought to dropping out of college altogether and for good', and 'I find myself giving considerable thought to taking time off from college and finishing later'. In light of the fact that only the minority of students are likely to be considering dropping out or feeling as acutely disaffected as these statements suggest, it is not surprising that this particular subscale fares notably better when pitted against the other three. Similarly the fact that a difference in trajectory patterns emerges between the institutional attachment scale and social adjustment when month two is compared to later time points may be a reflection that, as social adjustment improves (although not significantly) with exposure to the environment, institutional attachment does not. Students are likely to begin university with high hopes and probably would not embark upon a university career if they were anticipating dropping out or being unhappy. As such, increases in institutional attachment that could approximate those evidenced by the social adjustment scale would be unlikely. These considerations may indicate why the institutional attachment subscale is different from the others in level, as well as (in the case of social adjustment) shape. Overall, the findings may indicate that items on the institutional attachment scale are not particularly discriminative, as they appear to induce something akin to a ceiling effect, when compared to other subscales.

In the areas described above where heterogeneity is demonstrated, this supports the separateness of the subscales as measuring different aspects of adjustment that follow a different developmental course. Conversely, the findings suggest that some aspects of adjustment (where no differences in slopes are found) may follow a similar developmental trend, or influence each other in a mutually reinforcing fashion. Contrary to Duchesne et al.'s (2007) findings, the distinct difference in slopes between academic and personal-emotion do little to support the interdependence of these two adjustment facets. However, statistical methods such as the ANOVAs employed in this study, which are based on average effects, afford only tentative conclusions in this regard. Group-based methods, which are able to assess individuals' trajectory group membership across different adjustment facets, allow stronger inferences along these lines to be made.

### 6.5.2.3 *How are Individual Differences Related to Patterns of Adjustment Over Time?*

Turning to the effect of baseline psychosocial measurements, it was found through the examination of the interaction effects that these do not influence rates of decline or increase over time for the overall adjustment score or any of its subscales. To put it another way, the initial adjustment advantage of those with high psychosocial scores is maintained long-term, as opposed to the alternatives: that the adjustment levels of the high and low psychosocial groups would converge at a later measurement point, or would proceed along increasingly divergent trajectories.

The results suggest that psychosocial variables are able to predict distal as well as proximal outcomes, and that the benefits of psychological strengths are evident long-term, even though the challenges of university may alter and evolve over time. Thus the findings suggest a more important role for such individual differences variables than would have been the case if the high and low groups had converged to a similar adjustment level after first measurement.

Possible methodological explanations for the findings should also be considered, however. The dichotomisation of the continuous psychosocial variables (i.e., the use of a median split), which results in a loss of data, may have resulted in the lack of sensitivity to detect an effect (MacCallum et al., 2002). In a similar vein, the use of a technique that compared more extreme groups of psychosocial scores (e.g., a tertiary or quartile split) may have generated significant between-group differences in profiles of adjustment. Further, there is the possibility that the use of a larger sample may have resulted in between-group differences.

Aside from these methodological considerations, if one accepts the finding that psychosocial variables are not related to different adjustment patterns, a logical question is how these variables may be different from those *have* shown utility in such a way (e.g., students' goals, expectations about university and family experiences). Perhaps the difference is that the latter constructs are more specifically related to university life than the more general psychological variables in the present study. It sounds reasonable, for example, that students' expectations for university are based on their self-knowledge about how they will indeed fare during their

degree, and those with ‘fearful’ expectations had legitimate grounds on which to expect poor outcomes. Similarly, goals are likely to be an important ongoing driver to make a success of university, and family support may have a direct bearing on how well the student can deal with the vicissitudes of student life. Clearly, this is an area ripe for further study; perhaps, for example, more domain-specific measures such as academic self-efficacy or social self-efficacy, instead of the measure of general self-efficacy employed in the current study, have stronger links to longitudinal patterns.

### 6.5.3 *Conclusions*

The results of the present study add to the sparse longitudinal research on university adjustment in a number of important ways. They present a picture of longitudinal patterns of adjustment for each of the separate facets in isolation and also in relation to each other. They also extend previous findings regarding how psychological strength variables are related to university adjustment.

In summarizing, the results indicate that some facets of adjustment demonstrate significant shifts in adjustment over time. Differences in this regard relate to declines in academic adjustment and increases in social adjustment over time. Moreover, some aspects of adjustment, over some time points, follow different trajectories from each other. The most striking findings that emerged when adjustment trajectories were contrasted with one another relate to differences between the academic trajectory compared to other facets of adjustment, and institutional attachment levels that were higher overall than other facets of adjustment, as well as different in shape from the social adjustment trajectory. Exploration of the effect of selected psychosocial variables on longitudinal patterns indicates that those with high baseline measures on psychosocial variables maintain their adjustment advantage over their lower-scoring counterparts. This suggests an important role for psychosocial variables in predicting not only cross-sectional or short-term, but also long-run patterns of adjustment.

More generally, the findings highlight the importance of investigating the four facets of adjustment separately, as well as in aggregate. Further, fluctuations in adjustment suggest that

measuring adjustment infrequently may result in failure to identify what may be important interim fluctuations.

#### *6.5.4 Limitations*

The findings from this study need to be considered in the light of a number of limitations. First, the same problems regarding a reliance on self-report measures, the representativeness of the sample, and the absence of pre-transition measures of adjustment that were discussed at length in Study 1 also apply here. Refer to Chapter 3, Section 3.5.4, for a discussion of these issues.

With specific regard to generalisability and longitudinal aspects of adjustment, it would seem likely that institutional differences would influence patterns over time. For example, courses or institutions with less academic support or more demanding academic requirements may evidence a more marked decline in some facets of adjustment over time. Aspects of curriculum design such as modularity and continuous assessment as opposed to year-long courses with exams only at the end of the academic year could also influence patterns of academic adjustment. Thus the extent to which the present findings would apply in other settings must be considered.

The potential influence of sampling students from five different courses should also be considered. As discussed previously, it is possible that levels of adjustment at the time points sampled may have been affected by events on a particular course (e.g., exams, coursework deadlines, opportunities for social interactions) and thus affected students on that course in a similar manner. Thus, adjustment scores may have been systematically biased to some extent. Had students all been drawn from the same course, such factors would not have presented such a confound.

Finally, on the basis of preceding arguments, it is possible that the relatively infrequent time sampling in the present study may have resulted in some fluctuations in adjustment being missed.

#### *6.5.5 Implications of the Findings*

The finding of declines in academic adjustment suggest that it would be advantageous to

manage beginning students' expectations about university-level study, and ensure that they are aware of the academic challenges they will face, and how they might cope with these. This could involve preparing students in advance of possible declines in performance, making more efforts in the direction of providing pastoral and personal tutor support, encouraging students to discuss academic concerns, and teaching study skills.

That psychosocial variables have a long-term impact on adjustment further highlights the importance of these variables and supports the argument that screening for any deficits in such areas, and the development of associated attributes before or during a student's university career, is likely to be a worthwhile undertaking.

#### *6.5.6 Future Directions*

As the literature reviewed at the start of this chapter indicates that some individual difference variables may influence adjustment trajectories, future research along these lines should be undertaken to explore what other variables may have some utility as predictors of adjustment patterns. This is important with respect to interventions and determining how we might influence the course of adjustment. In view of the comments made earlier, variables that appear to be more directly related to university life may be the more fruitful avenues to pursue in further studies.

More detailed analyses of adjustment patterns that employ more frequent time sampling would also be useful. Although no suggestions are advanced with regard to what the optimal frequency of sampling might be, measuring adjustment at monthly intervals, particularly in the critical first year, might illuminate more detailed trends in the data. Another useful enhancement would be to assess adjustment levels throughout the whole period of the undergraduate degree. In the case of the present study, for example, it would have been interesting to observe whether declines in academic adjustment persisted into the final year of study, or whether there was some evidence of 'recovery'.

Studies could also take advantage of recent developments in longitudinal data analysis and employ more advanced, group-based statistical techniques such as the trajectory method

employed by Duchesne, et al. (2007). This would be a useful means of detecting whether there exist within a dataset distinct subgroups of students who follow similar adjustment trajectories. Whether trajectory groups membership is predicted by student variables, and whether maladaptive adjustment trajectories are associated with subsequent academic failure or dropout, would be important areas of study on which interventions could be based.

Research in this area would also benefit from the use of qualitative methods. Possible techniques would be interviews or diaries that explored students' own perceptions of their adjustment levels and also what they perceive as causing shifts in these. This might shed light not only on related psychological variables, but also how features of student life such as preparing for exams, or receiving feedback, affect adjustment.

Finally, replication of the study should be undertaken at other institutions; differences in institutional culture, support available and course design (e.g., semester- vs. year-based modules) may be associated with different results. Future studies would also benefit from larger samples or better means of following up students so attrition problems are not so severe. Recruiting students who are all from the same course, or at least courses where key events such as exams, assignment deadlines, holidays and similar occur at the same time for all students would also be advantageous. Such a strategy would result in better control of confounding environmental factors and facilitate appropriate timing of data collection.

## CHAPTER 7: STUDY 4: ADJUSTMENT TO UNIVERSITY AND STUDENT SUCCESS

### 7.1 INTRODUCTION

Student retention (persistence)<sup>34</sup> and academic performance are key indicators of student and institutional success, and as such are important considerations for students, university administrators, parents, employers, and other external stakeholders. From a university's point of view, student retention is one of the main criteria by which its performance is judged (Higher Education Funding Council for England, 2007) and poor retention rates often result in a loss of tuition fees, funding and reputation (Johnston, 2002; National Audit Office, 2007). For the student, dropout or academic failure are frequently associated with wasted time and money, as well as adverse psychological consequences (Davies & Elias, 2003; Rivière, 1999; Simpson, 2005). Successful outcomes, on the other hand, have positive implications for the institution in terms of economic stability and reputation (Yorke & Longden, 2004), and students who achieve tertiary-level qualifications can expect better lifelong physical and emotional well-being, in addition to the more obvious cognitive, financial and career benefits (Davies & Elias, 2003; Johnes & Taylor, 1991; Pascarella & Terenzini, 2005).

In view of the above, maintaining high student success rates is a major concern, particularly since the expansion of higher education in the UK in recent decades has been accompanied by increasing attrition rates.<sup>35</sup> Research suggests that economic, organizational, psychological and sociological factors may each play a role in attrition (e.g., Johnes & McNabb, 2004) and that reasons for dropping out are frequently complex and arising from multiple overlapping or interacting variables (Hall, 2001; Mackie, 1998, 2001; McGivney, 2003). In light of this complexity, and of the proliferation of research in this area (considerations which also apply to work on predictors of academic performance), a comprehensive discussion of the literature pertaining to predictors of student success is beyond the scope of this chapter. Rather,

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<sup>34</sup> Although some researchers differentiate between the terms 'persistence' and 'retention', in this thesis I use the terms interchangeably. Also note that there are wide variations in how institutions and researchers operationally define and measure 'retention'/'persistence' and their obverse, 'attrition'/'withdrawal'/'dropout', etc. See Hall (2001), McGivney (2003), or Yorke and Longden (2004) for a more comprehensive treatment of terminological and definitional issues around the subject of student retention.

<sup>35</sup> In the UK, the number of full-time undergraduates more than doubled (from 553,000 to 1,162,000) between 1982 and 1998, accompanied by an increase in attrition from 13% to 17% (Yorke & Longden, 2004). As a result, interest in and research into student retention issues in the UK began to flourish from around 1997 (Longden, 2002).

consistent with the theme of this thesis, it will primarily focus on how student success may be related to university adjustment.

Links between student adjustment and success have been theorised in a number of models of student development and persistence. Whilst they tend to differ with regard to the variables included and the hypothesised relationships amongst them, a common theme emerges: successful outcomes are more likely when there is a higher degree of integration into the institutional environment or student life. Seminal work in this area was undertaken by Spady (1970), who developed a sociological model of student dropout based on Durkheim's (1951) model of suicide. Analogous to the theorising that suicide is likely to occur when an individual's attachment to the society in which they live is poor or weakened, so Spady claimed that students who are poorly-integrated into the social and academic systems of their educational institution are at risk of dropout. More specifically, according to this model, the proximal determinants of attrition are 'institutional commitment' and 'grade performance', with social integration being indirectly linked to institutional commitment via the construct 'satisfaction'.

This model was further developed by Tinto (1975, 1987, 1993) to produce what has arguably become one of the most influential and empirically-supported models of retention. In a similar vein to Spady, Tinto proposed that the proximal determinants of retention are goal commitment (the determination to obtain the qualification) and institutional commitment (positive feelings towards and attachment to the institution). Initial commitment levels are determined by student (i.e., prior qualifications, individual attributes, family attributes), institutional (i.e., teaching, learning, support facilities) and other (e.g., finances, health, family events) factors. However, in this model, integration plays a central and crucial role, since commitment and integration subsequently become mutually reinforcing. Thus, ongoing commitment levels are strengthened or weakened depending on the degree of academic and social integration.

Institutional commitment or the 'intent to remain enrolled' is also the primary determinant of dropout in Bean's (1980) Student Attrition Model, which has its roots in theories of employee



turnover. In this model, intent to remain enrolled is determined largely by the student's beliefs and attitudes (i.e., positive or negative) regarding their institution, fellow students, and faculty, which are in turn a product of the nature of their academic and social interactions within the college environment.

Similarly, 'involvement', a concept that has clear parallels with 'integration', forms the crux of Astin's (1977, 1985) Student Involvement Theory. This theory attempts to explain the dynamics of how students develop, and holds that both the quality and quantity of students' involvement with faculty, peers, academic work and the like, is not only associated with increased retention rates, but also has beneficial effects with respect to learning, development and a range of other positive outcomes. The institution's priority, therefore, according to this line of thinking, should be to create an environment where student involvement is maximised.

It should be noted, however, that the extent to which the above theorising applies to non-traditional students and across diverse education environments has been questioned (e.g., McInnis, James, & Hartley, 2000), and alternative perspectives have been developed. A prominent example is Bean and Metzner's (1985) model of non-traditional (defined as part-time students, those who commute or older students aged over 24) student attrition. This de-emphasises the importance of social integration, on the basis that non-traditional students typically have less interaction with other students than is the case with traditional students. Rather, it is proposed that for these students, factors external to the institution (e.g., finances, employment, outside support and family responsibilities) have a greater influence on decisions to persist or withdraw.

A considerable amount of empirical work has examined the above models (or their subcomponents) or otherwise investigated relations between student adjustment/integration and outcomes. Some work in this area has employed the SACQ, the measure of university adjustment used throughout this thesis, to explore associations between adjustment and success. The academic and social adjustment subscales of the SACQ instrument may be seen as analogous to the concepts of academic and social integration, or involvement, whilst the

institutional attachment subscale measures something akin to ‘institutional commitment’, ‘goal commitment’, and ‘intention to remain enrolled’. Moreover, the instrument is explicitly marketed as a tool to predict dropout, and to provide a focus for interventions aimed at improving student retention (Western Psychological Services, n. d.).

In the manual for the SACQ, Baker and Siryk (1989) report findings relating to adjustment and attrition at the end of the first year, using their normative sample of Clark University freshmen. Data were collected during the early 1980s from four successive first year cohorts, with measures taken in both the first and second semesters (i.e., eight SACQ administrations in total). Point-biserial correlations revealed that, as expected, the institutional attachment subscale was the SACQ score most strongly related to attrition,<sup>36</sup> with all eight administrations showing significant associations ( $r_s = -.27$  to  $-.41$ ). For the other SACQ scores, most but not all of the eight results demonstrated significant associations with attrition ( $r_s = -.15$  to  $-.21$ ,  $-.17$  to  $-.29$ ,  $-.11$  to  $-.21$ ,  $-.20$  to  $-.28$  for the academic, social, personal-emotional and full scale scores respectively). Based on this set of results the SACQ authors concluded that the instrument is an effective predictor of dropout.

The above findings mirror to some extent those of a previous study by the same authors using an earlier, shorter version of the SACQ (Baker & Siryk, 1984). Measuring adjustment in the first and second semesters of the first academic year for three successive incoming cohorts, point-biserial correlations revealed that the ‘general’ subscale (similar to the later ‘institutional attachment’ subscale) was consistently associated with non-enrolment (for any reason) at the start of the second year. Correlations for the first cohort were substantially smaller ( $r_s = -.17$  for semester 1 and  $-.29$  for semester 2) than those for the second two cohorts ( $r_s -.40$  and  $-.43$  for the second and  $-.30$  and  $-.37$  for the third cohort), although the reasons for this are unclear. Associations between social adjustment and attrition were also consistently significant but lower than for the general subscale, whereas academic adjustment was significant in only half of the administrations and personal-emotional adjustment uniformly non-significant.

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<sup>36</sup> The scale was created by selecting items empirically linked to dropout in the normative sample (Baker et al., 1985).

In the same study, further corroborating evidence for the link between the general subscale and attrition is suggested by findings that, when students were classified as 'low' or 'high' on the scale (i.e., at the 'extremes' of the score distribution, defined as one or more standard deviation above or below the mean), 36% (first semester administration) and 42% (second semester administration) of the 'low' group did not enrol at the start of the second year. These figures contrast with those for the 'high' group, for whom the corresponding figures were only 4% and 2%. In a similar vein, using the final published version of the SACQ, Baker and Siryk (1986) found that 16.7% of students classified as well-adjusted (based on SACQ scores collected during week eight of university) had dropped out by their eighth semester, compared to 33.8% of the 'poorly adjusted' group. Results from an earlier study (Baker et al., 1985) which found that students demonstrating evidence of the 'freshman myth' (i.e., experiencing lower levels of actual adjustment than they had anticipated, pre-university) were more likely to drop out before their second year than those not manifesting the myth, provides further (albeit less direct) evidence for a link between adjustment and attrition.

Further empirical work on the predictive validity of the SACQ, undertaken by Beyers and Goossens (2002) at a Belgian university, represented the first attempt to employ the SACQ in a European context. Using the same statistical approach (i.e., point-biserial correlations) to that employed in the majority of the work discussed previously, this study measured adjustment in the middle of the first semester, and attrition in January, June and September. It was found that all SACQ scores were related to attrition in June and September ( $r_s = -.11$  to  $-.20$  and  $-.12$  to  $-.18$  respectively) although only overall adjustment, social adjustment and institutional attachment were significant in January ( $r_s = -.12$  to  $-.14$ ). Clearly, the associations reported in this sample, although significant, are generally lower than those reported in the studies by Baker and Siryk, and substantially so with regard to the institutional attachment subscale. However, as noted by Taylor and Pastor (2005b), associations between institutional attachment and attrition are likely to be inflated in the Baker and Siryk study, since the latter was conducted at the same institution that generated the data which determined the composition of the institutional

attachment scale. However, in view of the magnitude of their correlation coefficients, Beyers and Goossens (2002) concluded that the SACQ has little predictive validity in their setting.

Other researchers have employed more sophisticated statistical techniques to address the question of whether the SACQ can predict departure. Using logistic regression, Kaase (1994) was interested in whether SACQ subscales, and also individual items, could predict attrition after the first and second year, after controlling for GPA. At the subscale level, consistent with other research, institutional attachment was the strongest predictor of attrition. However, Kaase concluded that none of the models (i.e., whether for year one or two, or employing subscales or individual items) predicted attrition with a great degree of accuracy (the best models achieved 76-79%) or explained a substantial amount of variance (a maximum of 25%, for the best models) in attrition.

Also using logistic regression, Wintre and Bowers (2007) explored predictors of graduation by the sixth academic year at a large Canadian commuter university. In addition to the SACQ, the study incorporated demographic, family functioning, well-being and academic performance data. Academic adjustment and institutional attachment measured in the second semester positively predicted persistence. However, academic adjustment appeared to be an indirect predictor in that it became non-significant when GPA was included in analyses. In contrast, social adjustment was a negative predictor and, along with institutional attachment, predicted persistence even in the face of other competing variables. Personal-emotional adjustment, on the other hand, was unrelated to outcomes. Overall, the results suggest a useful role for some adjustment facets in predicting long term outcomes.

Employing an alternative method of modelling dichotomous outcomes, discriminant function analysis (DFA), Gerdes and Mallinckrodt (1994) measured adjustment during the seventh week of the first year, and attrition after six years at a large US university. DFA was conducted employing only the SACQ items that preliminary analyses had indicated were most strongly related to attrition. Analyses were conducted separately according to whether students were classified as being in good or poor academic standing, in view of the possibility that reasons for

dropout may differ for the two groups. For both the good academic standing and poor academic standing groups, four items were identified as being adequate predictors of adjustment (11 items and 6 items respectively were input into the DFA).<sup>37</sup> However, the model was able to classify students of poor academic standing more successfully than those in good academic standing; for the latter, results were only slightly better than chance. Whilst the results indicate that items from the academic, personal-emotional and social adjustment subscales each have role in predicting dropout, it is noteworthy that personal-emotional and social adjustment items predicted attrition as well as, or better than, academic adjustment items.

Another study (Krotseng, 1992) also used DFA to investigate how well the SACQ could differentiate between persisters and leavers at a private US university. Measuring adjustment between weeks six and eight and enrolment status after one, two or three semesters, and using all 67 SACQ items as input into the DFA, 70-85% of students were correctly classified as persisters or leavers. However, classification accuracy was highest for dropout at the end of semester one and lowest for semester three, suggesting that the SACQ is more effective at predicting early departure. In this study, approximately 30 SACQ items were useful predictors of attrition, with academic and social items predominating in the functions. Moreover, when students were grouped into five clusters on the basis of their SACQ scores and GPA, classification accuracy increased to 99.3 to 100%. Overall, the results suggest a promising role for the SACQ in predicting early dropout, with increased classification accuracy when the sample is further subdivided into meaningful groups.

Whilst the foregoing has focused on the SACQ instrument, other studies have also found relations between adjustment/integration and retention when the former have been conceptualised and operationalised in diverse ways. Studies have found associations between social integration (Daugherty & Lane, 1999; Milem & Berger, 1997; Smith & Naylor, 2001) or

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<sup>37</sup> For students of good academic standing, predictors of dropout were the items 'I have had informal, personal contacts with college professors', 'I've put on (or lost) too much weight recently', 'I am satisfied with the quality or the caliber of courses available at college' and 'I feel confident that I will be able to deal in a satisfactory manner with future challenges here at college'. For students of poor academic standing, the following items were adequate predictors of dropout: 'I have been feeling tense or nervous recently', 'I am satisfied with the extracurricular activities available at college', 'I haven't been sleeping very well', and 'Lately I have been giving a lot of thought to dropping out of college altogether and for good'.

both academic and social integration (Beil, Reisen, Zea, & Caplan, 1999; Napoli & Wortman, 1996; Terenzini & Pascarella, 1977) and retention. Also, some studies have found a more important role for academic than social adjustment (Liu & Liu, 2000; Munro, 1981) whilst others have found the opposite (Berger & Milem, 1999; Pascarella & Terenzini, 1979; Woosley, 2003). Whilst the majority of research in this area is US-based, qualitative research in UK pre-1992 (Rickinson & Rutherford, 1995, 1996; Smith & Naylor, 2001) and post-1992 (Mackie, 1998, 2001) institutions has also linked themes related to integration and adjustment to persistence.

Turning to other aspects of adjustment and of theoretical models, although student well-being is represented by the personal-emotional subscale of the SACQ, it tends not to form a central component of models of adjustment. However, empirical work measuring the construct using non-SACQ instruments suggest that it plays a role in attrition (e.g., Meilman, Manley, Gaylor, & Turco, 1992; Pritchard & Wilson, 2003; Szulecka, Springett, & de Pauw, 1987). Further, in line with the theories outlined previously, research has confirmed that integration constructs are predictive of institutional commitment/goal commitment or similar constructs (e.g., Berger & Milem, 1999) and also that lack of commitment to study or to the institution is related to dropout (Beil et al., 1999; Berger & Braxton, 1998; Mackie, 1998, 2001; Munro, 1981).

However, it should be noted that some researchers have concluded that the main effect influences of social and academic integration are relatively modest (Pascarella & Chapman, 1983). Others, consonant with Wintre and Bowers (2007), have found a negative effect of social integration on retention (Nora, Attinasi, & Matonak, 1990; Pascarella, Duby, & Iverson, 1983) and in some research, adjustment has been found to be unrelated to such outcomes (Grayson, 2003).

As discussed previously in relation to the work of Bean and Metzner (1985), it has been suggested that integration factors have less influence on outcomes for commuting or otherwise non-traditional students than they do for traditional students (Bean & Metzner, 1985; Tinto, 1993). Some empirical findings support this theorising (Braxton & Hirschy, 2005; Braxton,

Sullivan, & Johnson, 1997; Metzner & Bean, 1987; Mulligan & Hennessy, 1990; Pascarella & Chapman, 1983; Pascarella et al., 1983) whilst others run counter to it (Bers & Smith, 1991; Napoli & Wortman, 1996; Pascarella, Terenzini, & Wolfe (1986).

Additionally, research suggests that the importance of the different aspects of integration may depend on the stage at which dropout occurs, with social integration being associated with earlier and academic integration with later departure (Daubman, Williams, Johnson, & Crump, 1985; Hall, 2001; Mackie, 1998; Rickinson & Rutherford, 1996; Tinto, 1993). More generally, in reviewing the variations and common findings in the retention literature, McGivney (2003) indicates that when adjustment is compared to non-adjustment-related factors the former are more relevant to early withdrawal, with 'external' problems such as finances or changes in life circumstances taking on greater salience for later dropouts.

Whilst discussions of empirical work have thus far been focussed on relations between adjustment and student attrition, studies have also investigated how the former relates to academic success. As would be expected, most studies employing the SACQ find that the academic adjustment subscale is most strongly related to better academic performance. In Baker and Siryk's (1989) correlational analyses of eight SACQ administrations, all academic adjustment scores showed significant associations ranging from .17 to .48. The full scale and personal-emotional scores also demonstrated a number of significant correlations with GPA (six out of eight [ $r_s = .13$  to  $.39$ ] and five out of eight [ $r_s = .14$  to  $.32$ ] respectively). Associations between GPA and the institutional attachment and social adjustment scales were weaker, with only two attachment and one social adjustment scores demonstrating significant correlations. The authors also report correlations between SACQ scores and GPA for other US institutions, which are broadly comparable.

In earlier work by Baker and colleagues, academic adjustment and first year GPA showed significant positive correlations on five out of six administrations, with  $r_s$  ranging from .18 to .25. Of the other subscales, only personal-emotional adjustment evidenced any significant associations (in two of the six administrations, with one in the negative direction [ $r_s = -.14$  and

.15]; Baker & Siryk, 1984). Further, students showing evidence of the freshman myth in the middle of their first semester have been shown to do poorer academically than other students (Baker et al., 1985).

Substantially different findings emerged, however, in correlational analyses in Beyers and Goossens' (2002) Belgian study, which investigated how adjustment measured in the middle of semester one was correlated with academic performance in January, June and September. Results indicated that academic adjustment significantly predicted academic performance only for January exams ( $r = .14$ ), although, surprisingly, institutional attachment was negatively related to academic performance in September ( $r = -.14$ ). The authors suggest that the disappointing results in relation to academic adjustment and academic performance may be due to differences between the US and Belgian academic systems. Specifically, they note that in the university where their study was conducted, students undertake little in the way of regular intermediate tests and exams, and thus may have limited insight into how well they are adjusting academically. As such, students' subjective reports of their academic adjustment (as measured by the SACQ scale) and their objective academic performance (as measured by GPA) are less likely to coincide. As with the retention analyses discussed previously, the performance of the SACQ with regard to predictive validity in Beyers and Goossens' research is substantially poorer than in Baker and Siryk's.

Where studies have employed the SACQ in multiple regression analyses, subscales significantly associated with academic performance in a bivariate context sometimes fail to make a unique, or direct, contribution to performance in the face of competing predictors. For example, in a study at a large Canadian commuter university, Wintre and Yaffe (2000) found that academic ( $r = .38$ ), personal-emotional ( $r = .14$ ) and overall ( $r = .24$ ) adjustment measured in February/March of the first academic year were correlated with end of first year GPA. However, only academic adjustment was a significant predictor in a regression context.

Associations have also been found in other cultural contexts. In a study at a Malaysian university, the academic ( $r = 0.52$ ), personal-emotional ( $r = 0.35$ ) and overall ( $r = 0.47$ )



adjustment of students from a variety of undergraduate programs were positively associated with academic performance at the end of the first semester (Abdullah, Elias, Mahyuddin, & Uli, 2009b). In the regression analyses academic adjustment demonstrated the greatest unique associations with performance, followed by personal-emotional adjustment, with the overall model explaining 32% of the variance in achievement.

Other non-SACQ-based research also points to a link between integration constructs and academic performance. Several investigators using the College Inventory of Academic Adjustment found relations between the scale and academic performance as defined by either the GPA, or in terms of over- and under-achievement (See Baker et al., 1985 for details of these studies). Similarly, Need and De Jong (2001) found that academic integration was associated with academic performance, while Wolfe (1993) found that informal student-faculty contacts (an important aspect of social integration according to models of student development) were associated with academic performance and intellectual development. Moreover, as with student retention, there is evidence that aspects of student health may also play a role (e.g., Pritchard & Wilson, 2003).

However, not all studies find associations between adjustment and academic performance. For example, similar to his findings on adjustment and student retention outlined above, Grayson's (2003) study found no effect of adjustment on first year or fifth year academic performance in his Canadian study. He suggests that the findings may be explained by general differences between the USA (from which most theorising and empirical work originates) and Canada in the post-secondary experience.

In summarising the research on relations between adjustment and student success, it can be stated that results regarding the predictive validity of the SACQ, and of other measures of adaptation/integration have been mixed. Further, existing research is primarily US-based and has been criticised for being too focussed on 'traditional' students (e.g., white, young, and living on campus; Stage & Anaya, 1996).

Many researchers assert that predictors of student success alter over time, across institutional settings, and with changes in the higher education landscape (e.g., Abramson & Jones, 2003; Baumgart & Johnstone, 1977; Berger & Braxton, 1998; Berger & Milem, 1999; Johnston, 2002; Martinez & Munday, 1998; McGivney, 2003; Pascarella & Chapman, 1983; Pascarella & Terenzini, 1991; Tinto 1975). With regard to the latter, the higher education experience in the UK has altered dramatically in recent years. Abramson and Jones note the substantial nature of the changes, which include: widening access initiatives leading to an increasingly diverse student body, the use of different delivery models (e.g., e-learning, reduced contact hours and increasing part-time enrolments), funding changes that require students to balance study with paid work, more students with family or other commitments, and large numbers of students commuting rather than living on campus. Further, they conjectured that under such circumstances, where university life is so far removed from “Tinto’s notion of a closed, monastic order” (p.137) links between adjustment and outcomes may not be strong.

In sum, most work on adjustment and student success has taken place in circumstances very different from a UK post-1992 university, and the sparse UK work in this area is based on qualitative methods and is somewhat dated. Accordingly, work needs to be undertaken to determine the degree to which adjustment appears to be linked to student success in a post-1992 university, using quantitative methods and an established measure of adjustment. Such work has the potential to provide researchers and university administrators with important information about the factors underlying student success and failure in this setting.

## **7.2 CURRENT STUDY**

### *7.2.1 Overview*

The present study addresses some of the aforementioned gaps in the literature by exploring how student adjustment to university is related to attrition and academic performance in a large UK post-1992 university comprising a diverse student body. This will be undertaken using the SACQ as the measure of adjustment, and as such the study represents the first test of the predictive validity of the instrument in a UK setting. This will be explored in relation to first

and second year retention, and first and second year academic performance. The question of whether adjustment more effectively predicts proximal rather than distal outcomes will also be addressed.

### *7.2.2 Research Questions*

The present study sought to answer the following questions:

1. Does university adjustment predict attrition?
2. Which facets of adjustment are the strongest predictors of attrition?
3. Does university adjustment predict academic performance?
4. Which facets of adjustment are the strongest predictors of academic performance?
5. Does adjustment appear to be more strongly associated with Year 1 outcomes than Year 2 outcomes?

### *7.2.3 Hypotheses*

On the basis of the preceding literature review, it is hypothesised that adjustment will be negatively associated with dropout, with the institutional attachment subscale demonstrating the strongest relations. It is expected that academic adjustment will be the strongest predictor of academic performance. Additionally, in view of the empirical findings as summarised by McGivney (2003) it is expected that adjustment will be more closely related to Year 1 than Year 2 outcomes.

## **7.3 METHOD**

### *7.3.1 Design*

The study employed a longitudinal design. SACQ scores were independent variables measured at Time 1. Academic performance and enrolment status were dependent variables each measured at two subsequent time points.

### *7.3.2 Participants*

This study employed the same sample as in Study 1. The majority of the sample (95%) had at least one attribute that could define them as ‘non-traditional’ in some respect. Rates of student

attrition from the university<sup>38</sup> were 31 (10.2%), 33 (10.8%) and 64 (21.0%) for Year 1, Year 2 and Years 1 and 2 combined, respectively. Refer to Chapter 3, Section 3.3.2 for full participant details.

### 7.3.3 Materials

#### 7.3.3.1 Predictors

*Adjustment to university.* Adjustment to university was assessed using the Student Adaptation to College Questionnaire (SACQ; Baker & Siryk, 1989). Refer to Chapter 3 Section 3.3.3.2 for details of the instrument and internal reliability information.

#### 7.3.3.2 Outcomes

*Academic performance.* Academic performance data were obtained from the University's computerized records system. Academic performance was defined as the student's average mark across all of the modules they undertook in each academic year. Where students had a mark of zero, an extremely anomalous mark, or no mark recorded against a module, that module was not included when calculating the average academic performance for that student for that year.<sup>39</sup>

*Attrition.* Attrition was dummy-coded with 0 indicating 'retained' and 1 indicating 'dropped out'. The working definition of 'dropout' for this study was non-enrolment for any reason at the start of the students' second and third years. As such, students with the status 'satisfactorily enrolled' comprised the 'retained' group; all other students (i.e., those classified as 'not returned', 'withdrawn', 'intercalating', 'exam without attendance' or 'eligible to register') comprised the second ('dropout') group.

### 7.3.4 Procedure

The study employed the SACQ data collected in Study 1, during students' second month of university (See Chapter 3, Section 3.3.4 for full details of the procedure). Students' attrition and

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<sup>38</sup> Details of the working definition of attrition for the present study are presented in section 7.3.3.2.

<sup>39</sup> The process of deciding how to deal with these 'anomalous' marks is clearly subjective and results may be somewhat imprecise. However, it was assumed that such marks were likely attributable to illness or other extenuating or unusual circumstances that rendered the marks unrepresentative of that student's performance.

academic performance data were later extracted from the University's computerised records system. Academic performance data were collected at the end of the first and second academic years. Student attrition data were collected at the beginning of years two and three.

## 7.4 RESULTS

### 7.4.1 Overview of the Statistical Analyses

All analyses were performed using SPSS version 19. Data were analysed using descriptive statistics, product moment correlational analyses, standard multiple regression and logistic regression. Pearson correlational analyses were performed to test for associations between adjustment and retention, and between adjustment and academic performance. Standard multiple regressions were conducted to explore the relative importance of the SACQ subscales for predicting academic performance. Three separate binary logistic regressions were employed to test for predictors of first year attrition, second year attrition, and first and second year attrition combined. The logistic regression technique was chosen in preference to discriminant function analysis since the former has fewer assumptions and is more appropriate when group sizes are uneven (Tabachnick & Fidell, 2007). Missing data were handled using the listwise deletion method in regression analyses. An alpha level of .05 was set for hypothesis testing.

### 7.4.2 Data Screening

Scatterplots, histograms, normal P-P plots and correlation coefficients were inspected to check assumptions of normality, linearity, homoscedasticity and multicollinearity where appropriate. Due to multicollinearity between the social and institutional attachment subscales of the SACQ,<sup>40</sup> regression analyses excluded the institutional attachment subscale.<sup>41</sup> Outliers were dealt with according to the procedures outlined in Tabachnick and Fidell (2007). Thus, outliers were sought for the entire sample, and also for the groups employed in the logistic regressions. Overall, screening for univariate outliers identified 21 data points with z-scores > 3.29. The

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<sup>40</sup> Multicollinearity is likely due to the fact that the institutional attachment subscale shares eight (over half) of its items with the social adjustment scale.

<sup>41</sup> The institutional attachment subscale contains items empirically linked to dropout in the normative sample. Note: a) a large number of these items appear on the social adjustment scale; b) the ideal composition of the Institutional Attachment scale is likely to differ according to the institution (Baker & Siryk, 1989); and c) the scale has been criticised on the basis of weak theoretical underpinnings (Taylor & Pastor, 2005a). These considerations, taken together with the fact that the Academic, Social and Personal-Emotional aspects of university adjustment are better-defined aspects of the construct, led to the decision to retain the social adjustment scale and exclude the institutional attachment scale.

impact of these was reduced by amending scores to one above or below the most extreme non-outlying score. Multivariate outliers (MVOs) were detected using regression analysis to compute Mahalanobis distance ( $p < .001$ ). No MVOs were detected in the group-based analyses. However, eight multivariate outliers were found when the sample as a whole was screened. A decision was made to delete only the most extreme of these and retain the remaining seven. The rationale for this was as follows: a) only the most extreme of the eight outliers had a critical value substantially higher than the chi-square cut-off point, b) the MVOs were apparent only in the full-sample-analyses and not the group-based analyses, c) the size of the sample in which the MVOs were detected (i.e., the full sample) was relatively large, and d) it was desirable to maximise the use of available data and avoid any unnecessary deletions. Thus, a final usable sample of 305 remained.

#### 7.4.3 *Preliminary Analyses*

Descriptive statistics (means and standard deviations) and inter-measure correlations for all study variables were calculated and are presented in Table 7.1. Attrition after Year 1, Year 2 and Years 1 and 2 combined were 10%, 11% and 21%. Overall adjustment and academic adjustment were weakly and positively associated with academic performance in both Year 1 and Year 2, while personal-emotional adjustment was weakly and positively associated with academic performance in Year 2 only. Year 1 attrition was weakly and negatively associated with all SACQ scores apart from academic adjustment. There were no significant relationships between SACQ scores and Year 2 attrition, although there was a weak, negative association between institutional attachment and aggregated Year 1 and Year 2 attrition.

Table 7.1: Means (M), Standard Deviations (SD) and Inter-measure Correlations for the SACQ, Academic Performance and Student Retention

		M	SD	1	2	3	4	5	6	7	8	9	10
1	SACQ Total	423.71	68.96										
2	SACQ-A	151.67	26.81	.87 ***									
3	SACQ-S	122.95	24.12	.81 ***	.52 ***								
4	SACQ-P	89.01	21.87	.83 ***	.62 ***	.54 ***							
5	SACQ-I	106.77	18.16	.85 ***	.64 ***	.85 ***	.56 ***						
6	Jun 2009 Grade	56.84	11.52	.14 *	.21 ***	-.01	.11	.09					
7	Jun 2010 Grade	54.42	10.64	.14 *	.14 *	.02	.15 *	.08	.62 ***				
8	Y1 Dropout	.10	.30	-.15 *	-.07	-.16 **	-.12 *	-.17 **	-.27 ***	-.10			
9	Y2 Dropout	.11	.31	.02	-.02	.03	.07	-.02	-.32 ***	-.10	-.12 *		
10	Y1 or Y2 Dropout	.21	.41	-.09	-.07	-.09	-.04	-.14 **	-.43 ***	-.14 *	.65 ***	.68 ***	

Note. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . SACQ Total = Overall adjustment; SACQ-A = Academic adjustment; SACQ-S = Social adjustment; SACQ-P = Personal-emotional adjustment; SACQ-I = Institutional attachment. Jun 2009 Grade and June 2010 Grade = average mark for all modules taken by student, excluding zeroes or extremely anomalous (i.e., < 10) results. For Y1 Dropout, Y2 Dropout and Y1 or Y2 Dropout, 0 = not dropped out, 1 = dropped out.

#### 7.4.4 Predictors of Attrition

Binary logistic regression analyses using the 'enter' (simultaneous entry) method were conducted to assess whether adjustment in three domains (academic, social and personal-emotional adjustment) predicted attrition. As shown in Table 7.2, for first year dropout the overall model was significant ( $\chi^2(3) = 8.06, p < .05$ ) indicating that the model was able to distinguish between Year 1 persisters and leavers. The model's strength of association, represented by the Nagelkerke  $R^2$  ( $R^2_N$ ) was .054. The Wald criterion indicated that only social adjustment made a statistically significant contribution to prediction, such that lower scores were associated with greater likelihood of dropout in Year 1 (Wald = 4.00,  $p < .05$ ,  $\exp(\beta) = .981$ ). However, note that the model's overall prediction success of 89.8% (0% for dropouts and 100% for non-dropouts) was the same as for the intercept-only model. This consideration, taken together with the fact that, as depicted in Table 7.2, the upper confidence interval for the social adjustment odds ratio was 1 (i.e., implying the possibility of no effect of social adjustment on retention) questions the value of the model.

The second and third logistic regression models, relating to dropout for Year 2, and Years 1 and 2 combined, were non-significant. This suggests the models were unable to distinguish between persisters and leavers ( $\chi^2(3) = 3.09, p = .378, R^2_N = .024$ ;  $\chi^2(3) = 3.70, p = .296, R^2_N = .016$ ).



Table 7.2: Binomial Logistic Regression Analysis for Adjustment Variables Predicting Likelihood of Attrition in Year 1, Year 2, and Years 1 and 2 Combined (N=305)

Variables	B	SE	Wald	df	p	Exp( $\beta$ )	95.0% CI	
							Lower	Upper
<i>Year 1 Dropout N =31</i>								
SACQ-A	0.005	0.009	0.271	1	0.603	1.005	0.987	1.023
SACQ-S	-0.019	0.009	3.996	1	0.046	0.981	0.963	1
SACQ-P	-0.009	0.011	0.647	1	0.421	0.991	0.969	1.013
$R^2_{CS} = .026, R^2_N = .054. \text{ Model } \chi^2(3) = 8.06, p < .05$								
<i>Year 2 Dropout N =33</i>								
SACQ-A	-0.014	0.009	2.175	1	0.14	0.986	0.968	1.005
SACQ-S	0.003	0.01	0.114	1	0.736	1.003	0.984	1.023
SACQ-P	0.02	0.012	2.66	1	0.103	1.02	0.996	1.045
$R^2_{CS} = .012, R^2_N = .024. \text{ Model } \chi^2(3) = 3.70, p = .296$								
<i>Year 1 and Year 2 Dropout N =64</i>								
SACQ-A	-0.004	0.007	0.397	1	0.529	0.996	0.982	1.009
SACQ-S	-0.009	0.007	1.707	1	0.191	0.991	0.977	1.005
SACQ-P	0.005	0.009	0.333	1	0.564	1.005	0.988	1.022
$R^2_{CS} = .010, R^2_N = .016. \text{ Model } \chi^2(3) = 3.09, p = .378$								

Note: SACQ-A = Academic adjustment; SACQ-S = Social adjustment; SACQ-P = Personal-emotional adjustment.,  $R^2_{CS}$  = Cox and Snell's  $R^2$ ,  $R^2_N$  = Nagelkerke's  $R^2$ .

#### 7.4.5 Predictors of Academic Performance

Standard multiple regression analyses were employed to explore predictors of academic performance (see Table 7.3). Year 1 academic performance was weakly correlated with overall adjustment and academic adjustment. The multiple regression model was significant and explained 6.8% of the variance in Year 1 academic performance  $F(3, 279) = 6.84, p < .001$ . Academic adjustment and social adjustment were significant predictors ( $\beta = .30, p < .001$ ;  $\beta = .18, p < .05$ ).

Year 2 academic performance was weakly correlated with overall adjustment, academic adjustment and personal-emotional adjustment. The overall model was significant and explained

3.2% of the variance in Year 2 academic performance,  $F(3, 244) = 2.68, p < .05$ . However, none of the individual variables were significant.

Table 7.3 presents beta coefficients, squared semi-partial correlations (unique contributions of variance to criteria),  $R^2$  and F-values for standard multiple regression analyses of Year 1 and Year 2 academic performance.

*Table 7.3: Standard Multiple Regression Analysis of Year 1 and Year 2 Academic Performance: Beta Coefficients and Squared Semi-partial Correlation Coefficients*

Variables	Year 1	Year 2
	Academic Performance ( $N = 282$ ) <sup>a</sup>	Academic Performance ( $N = 247$ ) <sup>b</sup>
	$\beta(\text{sr}^2)$	$\beta(\text{sr}^2)$
SACQ-A	.30(.049) ***	.10(.006)
SACQ-S	-.18(.023) *	-.09(.005)
SACQ-P	.02(.000)	.13(.009)
$R^2$	.068	.032
Overall F	6.84 ***	2.68 *

Note. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . Academic performance is the average for all modules taken by the student during that academic year, excluding missing marks or marks  $< 10$ ; SACQ-A = Academic adjustment; SACQ-S = Social adjustment; SACQ-P = Personal-emotional adjustment.  
<sup>a b</sup> Reduced Ns due to missing academic marks for non-retained students/students who did not take exams.

## 7.5 DISCUSSION

### 7.5.1 Overview

The present study describes research undertaken at a UK post-1992 university to determine whether adjustment levels measured using the SACQ during the second month of university were predictive of academic performance and persistence one year and two years later, and whether adjustment appeared to have greater predictive validity for proximal rather than distal outcomes.

## 7.5.2 *Main Findings*

### 7.5.2.1 *Adjustment and Attrition*

The results of the present study indicate that overall adjustment and all subscales apart from academic adjustment were weakly associated with first year attrition (i.e., non-enrolment in September of the second year) in simple correlations and as such are broadly in line with hypotheses. The magnitudes of the associations are similar to those found in Beyers and Goossens' (2002) European study and substantially smaller than those reported by in the SACQ manual and other early US work. The absence of a relationship between academic adjustment and retention is also consonant with the findings of Beyers and Goossens yet runs counter to those of Baker and colleagues. Perhaps, as suggested by Beyers and Goossens, European students are less able to accurately assess their academic adjustment at an early stage, due to receiving less in the way of formative feedback that would allow them to assess their academic situation.<sup>42</sup> As such the scores for the academic subscale may have a reduced utility with regard to predicting outcomes.

The finding of a significant, albeit weak, relationship between institutional attachment and dropout is in line with the theoretical models of student development and departure outlined in the introduction section of this chapter (e.g., Tinto, 1975). Also in relation to institutional attachment it is notable that, as with Beyers and Goossens' study, and in contrast to work by Baker and colleagues, the scale does not appear to be more substantially related to retention than other aspects of adjustment. As mentioned previously, this is likely due it being derived at the institution whether Baker conducted most of his work.

When we turn to assessing relations between adjustment and second year dropout, there is very little evidence for a link between the two. In line with hypotheses and with McGivney (2003), the results suggest that adjustment is more strongly associated with earlier than with later dropout. This is unsurprising in view of the fact that proximal measurements would be expected to be more strongly related than distal measurements, and that adjustment would be expected to

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<sup>42</sup> It will be recalled that arguments along these lines were advanced in Chapter 6 as a possible explanation for the pattern of academic adjustment levels over time.

change over time and perhaps interact dynamically with academic performance and the intention to leave. Specifically, there were no associations between any facet of adjustment and second year retention, and only a weak expected-direction association between institutional attachment and both years' dropouts combined. The latter finding, however, is likely due to the influence of the relationship between adjustment and first-year dropout.

Whilst the foregoing results of the bivariate analyses indicate relations between adjustment and retention that are at best weak and intermittent, in multivariate analyses only social adjustment uniquely predicts dropout, and only for year one. As such the results suggest that other adjustment scores demonstrated zero-order associations as a result of overlapping variance shared with other variables. The results for social adjustment suggest that higher levels of social adjustment are associated with a lower likelihood of dropout, which is in line with hypotheses and with most existing research. However, as noted in the results section, there are indications that the model associated with the latter results may be of limited use and as such it would be unwise to draw too many inferences from it regarding the relationship between social adjustment and attrition.

In summarising, the results regarding the predictive validity of the SACQ in the present study are somewhat disappointing, and, in accord with other work (e.g., Beyers & Goossens, 2002; Gerdes & Mallinckrodt, 1994; Kaase, 1994) appear to lead to the conclusion that the SACQ has little to offer as an early indicator of potential dropout in the current setting.

Perhaps stronger associations between adjustment and retention would have been found if analyses had been performed separately for certain subgroups of students (e.g., traditional aged, or living on campus). Whilst this would have been desirable it was not possible within the constraints of the present sample. Also, in view of the fact that adjustment predicted first year outcomes better than second year outcomes, relations between adjustment and attrition may have been stronger had the latter been measured at the end of first semester. Perhaps under such conditions the SACQ would be an adequate indicator of dropout (i.e., as an indicator of imminent withdrawal).

More generally, the results are supportive of the idea that retention is related to multiplicity of factors (McGivney, 2003) and that reasons for leaving are often unrelated to university experiences (Wintre, Bowers, Gordner, & Lange, 2006). Stated simply, adjustment variables represent only a small proportion of the difficulties that lead to decisions to withdraw. Perhaps, specifically, financial concerns and pressures associated with having to take on paid work, which have long been considered an important factor in attrition (e.g., Davies & Elias, 2003; Kalsner, 1991) have taken on a greater salience with the changes to student funding that have recently been introduced in the UK.

#### 7.5.2.2 *Adjustment and Academic Performance*

With regard to academic performance, in line with the hypothesis and much existing research the academic adjustment scale was the SACQ subscale most closely related to outcomes, demonstrating weak relations with both first year and second year results and unique prediction of first year results. That academic adjustment is the most important subscale for academic performance would be expected given the degree of overlap between the two measures; indeed students' perceptions of their academic performance is one of the four components of the academic adjustment scale.

Although social adjustment appeared to negatively predict year 1 academic performance in the regression analyses, the lack of a simple correlation between the two variables suggests that this may be due to suppressor effects, and as such few conclusions may be drawn from this particular result.

Overall, the results suggest that adjustment, and particularly academic adjustment, may have some utility in predicting academic performance. However the amounts of variance explained is small. This is likely due to the obvious importance of cognitive variables in academic performance. Further, it should be borne in mind that prior academic performance (in school or in university entrance exams) is generally found to be the best predictor of first year academic performance, able to explain a considerable portion of variance (e.g., Schwartz & Washington,

2002). As such, if this data is available then there would be little to be gained by using the SACQ to predict first year academic results.

### *7.5.3 Conclusions*

The present study makes an important contribution to the literature on student adjustment and student success. It extends previous findings by being the first to assess the predictive validity of the SACQ instrument in the UK and more generally is the first UK study to conduct a quantitative examination of the effect of adjustment on student success. In some regards the results support the theoretical framework that adjustment is related to student success. However, associations in the present study are generally weak and intermittent, the amount of variance explained is small, and adjustment showed very limited ability to predicting year two outcomes. As such, the results appear to have small practical significance and suggest that adjustment (or at least adjustment as conceptualised by the SACQ, or without consideration of moderating factors) has little to offer as a predictor of outcomes, and any predictive power in this regard may be limited to short-term outcomes. Put differently, it appears that students drop out of university, or fail academically, for reasons that are predominantly unrelated to adjustment.

### *7.5.4 Limitations*

The present study is subject to several limitations. First, as with previous studies in this thesis, it should be borne in mind that the sample consisted of volunteers who may differ from the general first year student population.

Second, also as in previous studies in the thesis, there exists the problem that very early leavers (i.e., those who left before the adjustment data were collected in late October/early November of the first year) could not be included in the study. This factor could have influenced results since these students may have had the severest adjustment difficulties, and as such have been the ones for whom relationships between adjustment and retention were strongest. It is also likely that the timing of administration of the adjustment measure may have influenced results in other respects. The literature is relatively silent on the question of what may be the 'optimum' time to

administer the SACQ. Clearly, particularly with regard to academic adjustment items, some considerable time has to have elapsed before students are in a position to assess how university life is progressing. Aside from this constraint, however, it is difficult to determine when might be the most appropriate time to administer the instrument, in order to maximise its predictive validity. As such, the present study may have given an overly-pessimistic view of its potential in this respect.

Third, the study was conducted at a single, large, post-1992 university, and sampled only one undergraduate intake. It will be recalled from the introduction to this chapter that associations between adjustment and outcomes are frequently institution-specific; as such it would be unwise to indiscriminately generalise these findings to other institutions. This caveat aside, it would seem reasonable to suggest that the present findings could transfer to other institutions that are similar in size, widening access commitments and student body composition.

Fourth, research suggests that adjustment variables may exert different effects depending on student characteristics such as age, living arrangements, academic ability, ethnicity and gender (e.g., Bean & Metzner, 1985; Benn, 1995; Gerdes & Mallinckrodt, 1994; Johnes, 1990; McDaniel & Graham, 2001; Terenzini, & Pascarella, 1978; Tinto, 1987). Although the present sample was varied with regard to the above, its size and composition did not allow for analyses being conducted separately for the different groups. As such, it was not possible to detect any potentially important moderating variables.

In a similar vein, dropout was modelled as a dichotomous variable: students with the status 'satisfactorily enrolled' comprised one (non-dropout) group and all other students were combined to form the second (dropout) group. This strategy was employed as the number of 'dropouts' was small, statistically speaking, and reasons for dropout could not be easily determined.<sup>43</sup> However, retention research should ideally differentiate between voluntary and involuntary withdrawal, since the determinants of the two may vary (Tinto, 1987).

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<sup>43</sup> See Smith and Naylor (2001) for a discussion of the difficulties surrounding disentangling voluntary and non-voluntary reasons for departure.

### 7.5.5 *Implications of the Findings*

In view of the poor predictive validity of the SACQ in the present study, it would seem reasonable to conclude that it would have limited utility as a diagnostic tool in the current setting, and, by extension, in similar institutions. Clearly, universities have to consider the costs and benefits associated with the use of a particular intervention. On balance it seems unlikely that the potential gains from use of the SACQ would outweigh the drawbacks associated with its cost, length, and scoring procedures. It is very important to bear in mind, however, that, as discussed previously, the SACQ may generate better predictive validity results if administered at a different time, or to only certain subgroups of students.

Notwithstanding the above, the results suggest that there may be some, albeit modest, benefits to be derived from seeking to enhance students' adjustment levels, particularly with regard to first year outcomes. Further, as noted by Grayson (2003), university adjustment is a legitimate end in its own right, which we should seek to enhance regardless of its relationship with outcomes. As such, efforts should be directed at enhancing academic adjustment by teaching study skills early on, and taking academic support and the provision of academic advice seriously. Further, theoretical and empirical work related to academic adjustment suggests that first year seminars, collaborative assignments and informal interactions between faculty and students are likely to enhance academic adjustment (Schwitzer, McGovern, & Robbins, 1991; Tinto, 1993). Personal-emotional adjustment, which was weakly associated with second year academic performance, may be enhanced by providing students with information about safeguarding their well-being. Institutional attachment, on the other hand, is likely to depend to a large extent on students' personal characteristics and circumstances, and to be a by-product of other aspects of adjustment (Tinto, 1975). The institution could take positive steps in this regard, however, by ensuring that interactions between it and the student are, as much as possible, positive.

The need for such efforts should not be underestimated, in view of the importance of student satisfaction. This has implications for an institution's performance in such assessments as the



National Student Survey and subsequently in widely-published university league tables. These are important determinants of recruitment, reputation, and funding. Plausibly, a positive university experience may affect students' long-term commitment to the institution, influencing such considerations as their generosity as alumni. As such, even if not employed as a predictor of dropout or failure, the SACQ could still be used to gather data that indicate the general happiness and satisfaction within the student body, and to highlight potential problems areas that may then be dealt with proactively before they negatively impact the institution. The instrument could also be used as a basis for discussions between personal tutors and students or in other pastoral settings, as a means of identifying and remedying adjustment problems.

#### *7.5.6 Future Directions*

Some of the limitations of the present study outlined above suggest some avenues for future research. Replication of the work at other UK institutions would indicate the generalisability of the findings, and whether for some institutions the SACQ may be a more valuable predictor of student outcomes.

The use of a larger sample would also be important in terms of increasing the power to detect effects, and for allowing differentiation between different types of students, and voluntary and involuntary departure.

Also in relation to one of the limitations of the present study, future research could investigate whether the timing of administration of the SACQ affects its predictive validity. Results from such work would indicate when in the academic year would be the most appropriate time to collect adjustment data, if the aim is to predict the likelihood of student success.

## **CHAPTER 8: GENERAL DISCUSSION**

### **8.1 OVERVIEW**

This final chapter summarises the findings of the four empirical studies of the thesis and details the original contribution to knowledge. The theoretical and practical implications of the findings, as well as the limitations of the research, are discussed. Finally, some suggestions for future research are advanced.

### **8.2 ORIGINAL CONTRIBUTION TO KNOWLEDGE**

#### *8.2.1 Introduction*

This thesis adds substantially to the sparse UK literature on university adjustment and also contributes significantly to the EI literature. It is the first quantitative exploration of university adjustment in a UK post-1992 university, and the first UK study to employ the SACQ as a measure of adjustment. More specific aspects of originality for each of the four studies included in this thesis are detailed below.

#### *8.2.2 Study 1*

An important aspect of Study 1 is that it demonstrated that the ‘psychological strength’ variables identified as important to university adjustment in the international literature are also important predictors in the current setting. Moreover, this is the first time that these established psychosocial variables have all been pitted against each other within the same study in order to identify their relative importance.

With specific regard to EI, it is the first study to explore associations between the SEIS EI measure and SACQ-measured adjustment. Moreover, it explores EI and adjustment at both the global and subscale level for each construct, thus affording a detailed insight into how the subcomponents of each are associated with each other. Another aspect of originality is the investigation of whether EI can predict adjustment over and above competing psychosocial predictors. The findings that the SEIS can predict variance in university adjustment over and above five other well-established predictors is an important indicator that EI bears promise as a predictor of adjustment. Moreover, an innovative method (i.e., a series of two-step hierarchical

regressions) was used to explore the question of how EI may exert its effects on adjustment. The substantial attenuation of the EI effect when other psychosocial variables were taken into account provided the first evidence that EI is associated with adjustment via its correlations with other important predictors (with which it shares conceptual overlap) of adjustment.

The study also extends existing work on locus of control and its relationship with adjustment. Existing research suggests that an internal locus of control is a valuable attribute for beginning students, associated with higher levels of university adjustment (e.g., Martin & Dixon, 1994; Mooney et al., 1991). However, the present study was the first to use Levenson's (1981) multidimensional locus of control instrument, which differentiates external locus of control into 'chance' and 'powerful others' in this domain, and to establish that the two orientations are able to capture *different* unique variance in university adjustment.

By conducting comparisons of the adjustment levels of a number of student subpopulations, this study also gave an important indication of whether group differences observed in earlier and/or international work may still be observed in a modern-day post-1992 university and in the context of widening access initiatives. Important information emerging from these investigations suggest that the notion that certain subgroups are at risk for poor adjustment outcomes is not borne out by the data in this instance. Moreover, as far as the author is aware, no other study has explored whether having dependants (i.e., children or elderly relatives) is a risk factor for poorer adjustment outcomes. This was deemed to be an important consideration as increased numbers of mature students means more students with this status.

### 8.2.3 Study 2

The overriding contribution of Study 2 is that it is the first investigation to simultaneously explore multiple measures of EI and their relative utility in understanding and predicting adjustment to university. Moreover it is the first to assess the predictive power of the measures over and above, and in comparison to, competing predictors (including personality and IQ), and to conduct analyses at both the global and subscale levels. Moreover, as in Study 1, attenuation

analyses are undertaken to ask the heretofore unexamined question of how EI may exert its effects in this regard.

#### 8.2.4 *Study 3*

The results of Study 3 add to the sparse longitudinal research on university adjustment in a number of important ways. It is the first study to explore how levels of adjustment for each of the four SACQ facets fluctuate over time and whether they follow a different pattern from each other. Moreover, whilst other research has explored psychosocial predictors and adjustment cross-sectionally (or measured adjustment at only one time point), the present study demonstrated the new knowledge that the adjustment advantages of higher psychosocial functioning are maintained long-term (i.e., over the first two years of university).

#### 8.2.5 *Study 4*

Study 4 represents the first quantitative study of how SACQ-measured adjustment and student success (defined in terms of academic performance and continued enrolment) are related in a UK setting, and is the first UK test of the predictive validity of the SACQ instrument.

### **8.3 SUMMARY OF FINDINGS**

#### 8.3.1 *Study 1*

A primary aim of Study 1 was to explore predictors of university adjustment. Findings corroborated the international research on psychosocial predictors of adjustment, in that positive aspects of individual and interpersonal functioning (viz., social support, self-esteem, self-efficacy, attachment security, locus of control and emotional intelligence) were related to better adjustment to university life. Further, the results supported existing research that suggests that social support and self-esteem are particularly important predictors of adjustment (e.g., Bettencourt et al., 1999; Solberg & Villarreal, 1997). Indeed in the present study social support was the single most important predictor in terms of the magnitudes of its correlations with adjustment, incremental power, and reliable (as opposed to intermittent) patterns of associations. Further, differentiating external locus of control into ‘chance’ and ‘powerful others’ orientations demonstrated that the ‘chance’ orientation captured unique variance in personal-emotional

adjustment not explained by other study variables, and that the ‘powerful others’ orientation was associated with academic adjustment (both in the expected negative direction).

The findings regarding EI (using the SEIS instrument) in this study suggested that the construct holds promise as a framework for investigating adjustment to university, in that the instrument was not only significantly associated with adjustment, but the global SEIS score and the appraisal of emotions (i.e., the ability to recognise emotions in oneself and others) subscale demonstrated modest amounts of incremental validity in all facets of adjustment except personal-emotional adjustment, over and above demographic variables and competing psychosocial predictors.

Follow-up mediation analyses indicated that the SEIS could account for a substantial amount of variance in overall and academic adjustment, slightly less for social adjustment, and, surprisingly, a relatively small amount in personal-emotional adjustment, but that it exerted its effects mainly through its shared variance with other psychosocial predictors.

Another aim of this study was to compare the adjustment levels of various student subgroups, in order to determine whether some subpopulations appeared to be at greater risk of adjustment difficulties than others. Results indicated that mature students reported higher levels of adjustment than traditional-aged students (in terms of overall and academic adjustment). Further, those who were married or cohabiting had greater levels of academic adjustment than their non-partnered counterparts, whilst students with dependants scored higher on academic and personal-emotional adjustment than those without. Consistent with some of the literature in the area (e.g., Christie et al., 2005) living in student halls or a student house was associated with higher levels of social adjustment. However, although females generally report poorer emotional and psychological adjustment during the transition to university (e.g., Vivona, 2000), they did not score lower than males on the personal-emotional subscale of the SACQ in this study. Similarly, there were no differences in adjustment based on socio-economic or generational status, in contrast to a substantial body of research indicating that students with

lower socioeconomic or first generation status are likely to have problems in this or related areas (e.g., Nuñez & Cuccaro-Alamin, 1998; Tett, 2004).

With regard to average adjustment levels in the sample, the scores for all facets adjustment, and the overall score, indicated that students were generally adapting well, with scores comparable to those reported by the normative sample.

Finally, moderate-sized intercorrelations among the SACQ subscales contributed to the validation of the instrument in this context, and supported the notion that the aspects of adjustment represented by the instrument's subscales are related yet distinct facets of the construct.

### 8.3.2 *Study 2*

In view of the promising findings in relation to EI that emerged from Study 1, Study 2 aimed to explore the construct in more depth, and reported the results of an investigation of relationships between university adjustment and four disparate measures of EI. For each measure of EI, the magnitude of its associations with adjustment, its ability to predict adjustment over and above personality, IQ and competing psychosocial predictors, and how its relations with adjustment are attenuated by other psychosocial variables, were assessed.

The study provided clear evidence that relationships exist between emotional intelligence and adjustment. Overall, self-report measures of EI demonstrated the strongest associations with adjustment, with the TEIQue trait EI instrument demonstrating substantially stronger correlations with adjustment than the other two self-report EI measures. In contrast, the MSCEIT ability measure was only weakly associated with criteria. However, the MSCEIT (and its 'perceiving emotions' subscale in particular) was superior in terms of the ability to explain unique variance in criteria, although two of the TEIQue subscales ('well-being' and 'self-control') also demonstrated some utility in this regard. Generally, however, the incremental power of the self-report EI instruments was poor; neither the SEIS nor the ESES, at either the global or subscale level, were able to predict unique variance in any adjustment criteria.

With regard to non-EI variables, associations between personality and adjustment were of approximately the same magnitude as those between adjustment and the TEIQue, although personality was able to explain more unique variance in adjustment outcomes.

Subsequent attenuation analyses indicated that although trait EI measures, and the TEIQue in particular, were able to explain substantial amounts of the variance in adjustment, they exerted their effects mainly due to their shared variance with personality.

### 8.3.3 *Study 3*

Study 3 investigated longitudinal patterns of adjustment over the first two years of university in order to determine the shape of the trajectories for the various facets, and whether they appeared to follow similar, or substantially different, developmental courses. Additionally, in view of the fact that variables indicative of positive psychological functioning had shown clear associations with adjustment outcomes in the previous two cross-sectional studies, this study sought to investigate whether they were also associated with long-run patterns of adjustment.

Results indicated that mean overall adjustment levels were relatively stable over time. However on inspection of the trajectories for the individual facets of adjustment, significant declines in academic adjustment and increases in social adjustment over time were observed. In contrast, personal-emotional adjustment and institutional attachment were generally stable, with the latter consistently higher than the other adjustment subscales.

Differences in patterns of adjustment were most apparent between academic adjustment compared to other facets of adjustment (due to its declining trajectory), although there was also a significant difference between the ascending social trajectory and the stable institutional attachment scores.

When students were classified as either 'high' or 'low' (using a median split) on each of the six psychosocial variables of interest (i.e., social support, self-esteem, self-efficacy, attachment security, locus of control and emotional intelligence), and the trajectories of adjustment compared for the two groups for each psychosocial variable, it was revealed that the higher

levels of adjustment associated with each of the higher psychosocial groups at Time 1 were maintained throughout the first two years.

#### 8.3.4 *Study 4*

Study 4 turned to exploring university adjustment as a predictor rather than a dependent variable. Specifically, it sought to determine whether adjustment as measured by the SACQ was associated with two key indicators of student success: enrolment status (i.e., persistence vs. dropout) and academic performance. As such the study constituted a test of the predictive validity of the SACQ, an instrument specifically marketed as a diagnostic tool for predicting dropout.

The study revealed that SACQ subscales and the overall score were only weakly associated with year one attrition and were unrelated to year two attrition. Only the academic adjustment subscale was associated with year one academic performance, although both academic and personal-emotional adjustment demonstrated relationships with year two results. In all cases, associations were again weak. It was concluded from this study that the SACQ has relatively little to offer as a diagnostic tool in the current setting.

### 8.4 LIMITATIONS

Before discussing the theoretical and practical implications arising from this thesis, some limitations of the work need to be highlighted, or re-iterated. One of the primary limitations relates to the representativeness of the sample and hence the generalisability of the findings. The fact that participation was voluntary meant that those who took part may have differed in important ways from the typical first year student. Specifically, it may be expected that the participants represented the more motivated and able of the first year population.

It should also be borne in mind that participants were all full-time students, so findings may not generalise to those who study part-time. Although it appears that the boundaries between full- and part-time study are becoming increasingly blurred, differences in how part-time students integrate and interact with the university may mean that, for these students, the variables of interest in this research may operate in different ways.



It should also be noted that, as a result of the academic disciplines sampled, females were disproportionately represented in the data, indicating that generalisation of the results to males should be undertaken with caution. The research was also undertaken at a single, UK, post-1992 university, so findings may not readily translate to other types of institution.

Another limitation is that the cross-sectional design (i.e., with psychosocial measures taken concurrently with adjustment measures, as opposed to pre-transition) of the first two studies limits inferences regarding causality. There is the possibility that the experience of transition may have influenced to some extent the psychosocial variables rather than vice versa, or that some unknown third factor underpins both. Nonetheless, on the basis of the arguments presented in Section 3.5.4, the inferences drawn here are based on the assumption that the psychosocial variables influenced adjustment.

Further, it should be noted that, aside from the MSCEIT and the Advanced Progressive Matrices, all psychological measures in this research relied on self-report methods. This increases the likelihood of inflated associations due to common method variance (Podsakoff et al., 2003) and relies on participants to respond to questions truthfully and accurately.

Clearly, the aforementioned concerns apply to the key instrument in this work: the SACQ. That this was the sole measure of adjustment in this research raises a number of potential issues that require some comment. As indicated previously, the research was reliant on students' self-reports of their adjustment, when some external corroboration of these data would have been desirable. Related to this, Baker and Siryk (1989) note that SACQ scores should be interpreted with caution due to the instrument's transparency of purpose, which allows students to easily respond in a manner that presents them in a better light, if they so wish. Also, the measure was developed and tested almost thirty years ago, using predominantly white, traditional-aged, US college students. Whilst the instrument has been extensively used since then in many different settings, the possibility exists that the most appropriate conceptualisation of adjustment may vary with time and across educational environments. In a similar vein, it will be recalled from

Chapter 2 that there are many non-SACQ means of measuring and conceptualising university adjustment, which may have generated different results than those presented in this thesis.

## **8.5 IMPLICATIONS OF THE FINDINGS**

The findings of the current study have theoretical and practical implications which may be of use to researchers, university administrators or other educational practitioners, as well as to students, parents and others interested in university adjustment.

### *8.5.1 Theoretical Implications*

The findings of this thesis support the theoretical framework that student characteristics are important determinants of the ability to adjust to university life. More generally, they are in line with recent thinking on psychofortology and positive psychology (i.e., psychological strengths; Seligman & Csikszentmihalyi, 2000) which highlight the many benefits associated with positive psychological functioning. Results are also consonant with work on resilience, and risk and protective factors, undertaken by Luthar (2003, 2006) and Rutter (1987). According to this theorising, internal attributes such as self-esteem and self-efficacy, and good relations with others, promote resilience, mediate risk and increase the likelihood of positive adaptation in the face of adversity.

The research also adds to the accumulating evidence suggesting that emotional intelligence is linked to positive outcomes in diverse life domains. The findings also provide further evidence that results of research in this area are likely to differ depending on the measure of EI employed (e.g., Côté et al., 2010; Zeidner et al., 2005).

The findings that, of the four EI measures, the TEIQue explained the most variance in university adjustment, supports other work (e.g., Gardner & Qualter, 2010; Schutte et al., 2007) that suggest that this measure has the greatest utility in explaining variance in criteria when compared to ‘narrower’ trait EI measures or the MSCEIT ability measure. Inspection of results related to the latter, which was clearly the superior EI measure in terms of predicting incremental or unique variance in adjustment, strongly indicates that the MSCEIT measures something different from other study variables in relation to university adjustment.

These substantial disparities in the patterns of results for trait and ability EI support the argument that they represent different constructs (e.g., Brackett & Mayer, 2003; Petrides & Furnham, 2003; Van Rooy et al., 2005). Related to this, the small associations between self-report and ability EI (which are apparent between even the MSCEIT and the ESES, which are based on the same theoretical model) support claims that self-report measures do not accurately assess actual emotional abilities (e.g., Mayer et al., 2008; Petrides, Pérez-González, et al., 2007; Tett et al., 2005). To a lesser extent, the results also suggest distinctiveness among the three trait EI measures employed. These considerations support Van Rooy et al.'s (2005) assertion that EI represents an example of the 'jingle fallacy', where disparate constructs (often misleadingly) share the same name.

Further, the fact that trait EI measures and subscales had very little to offer once personality had been taken into account supports to some extent the premise that this conceptualisation of EI is little more than 'repackaged' personality measures (e.g., Davies et al., 1998; Mayer et al., 2004). However, it should be noted that the emotionality and well-being components of the TEIQue predicted unique variance in academic and social adjustment respectively, in the face of a considerable number of competing variables, including personality.

Other findings related to EI's ability to predict unique variance in the present research also support earlier work (Davies et al., 1998) that suggest that the 'perceiving emotions' EI subcomponent may bear some promise as an aspect of the construct that is notably distinct from established psychological variables. This effect was evident in both ability (i.e., MSCEIT) and trait (i.e., SEIS) conceptualisations of EI in this research.

Overall, the findings regarding EI suggest that trait and ability conceptualisations are fundamentally distinct, yet each may have something different and useful to offer in the prediction of criteria.

Turning now to locus of control, the present study used Levenson's (1981) multidimensional measure to disaggregate external locus of control into 'chance' and 'powerful others' orientations. The finding that the 'chance' orientation is able to predict unique variance in

outcomes which the ‘powerful others’ scale does not, and vice versa, provides some support for the construct validity of this conceptualisation of locus of control.

With regard to the results on student subgroup differences in adjustment, findings suggest that being a ‘non-traditional’ student does not constitute a threat to adjustment. Earlier theoretical work in this area employed the sociological notions of ‘cultural capital’ and ‘habitus’, which refer to the resources provided to an individual by their cultural and social background. According to this line of thinking, non-traditional students are seen as being at a disadvantage in a university setting, as ‘outsiders’ lacking the required attitudes and knowledge, or the means by which to gain them. However, the results of this study suggest that such notions may no longer be appropriate. Rather, at least for some institutions, findings are consistent with the idea of UK universities becoming less exclusive and ‘middle-class’ institutions, and their having successfully risen to the challenge of accommodating a diverse student body.

Turning to implications arising from the longitudinal research on patterns of adjustment over time, one of the most striking findings was the declining trajectory exhibited by academic adjustment. As noted in Chapter 7, the situation in which students find themselves when they begin university is similar to that on which Marsh bases his big-fish-little-pond effect (BFLPE; e.g., Marsh & Hau, 2003) theorising. As Marsh noted that being in a more selective educational environment presented greater risks *vis-à-vis* students’ academic self-concept, perhaps in the current longitudinal findings we are seeing a similar effect as a result of students having to face greater academic challenges.

The observed differences in trajectories over time for some of the adjustment facets suggests further support for their distinctiveness from each other. In particular, that academic and personal-emotional facets of adjustment demonstrate different patterns over time suggest that academic concerns are not closely tied to student well-being, nor vice versa, in contrast to some earlier work suggesting the two facets may be interdependent or mutually reinforcing (Duchesne et al., 2007).

Finally, the modest relations between adjustment and student success suggest that students succeed or fail for reasons that are frequently unrelated to adjustment. As such they only partially support theoretical models of student development and departure that postulate that adjustment is an important predictor of student success. Moreover, the ability of adjustment to predict student withdrawal was restricted to first-year dropout, supporting the notion that adjustment is more likely to be an issue in early withdrawals (see McGivney, 2003). Generally the results from this area of the research suggest that theories of student success that focus strongly on adjustment concerns are unlikely to be appropriate for modelling outcomes in a modern-day post-1992 institution.

#### 8.5.2 *Practical Implications*

The results arising from this thesis could be utilised by university administrators, academic staff and students who are interested in improving student adjustment and achievement. The findings from the first three studies clearly demonstrate the importance of positive psychosocial functioning for university adjustment, and as such suggest that developing these attributes in students may be beneficial. This may be a useful means of facilitating the development of interventions to facilitate smoother transitions into HE. It may also be useful for parents, schools and colleges to be made aware of the importance of these attributes, so that students may be helped to develop them in preparation for starting university. The development of these skills could be incorporated into university induction or transition programs, or offered as optional courses.

In terms of screening for adjustment difficulties, the results of this research suggest that the TEIQue may be the most effective means of achieving this, if the aim is to use only a single instrument. Whilst its associations with adjustment are of approximately the same magnitude as those of personality, the TEIQue is shorter than the IPIP personality instrument and therefore would reduce participant burden. The results regarding the MSCEIT's ability to predict unique variance in outcomes suggest that administering this instrument in addition to the TEIQue would increase predictive power. However, the length, cost and scoring procedures associated

with the MSCEIT may be considered by many to be prohibitive for the additional prediction that it affords.

The question of how to help students develop appropriate attributes to successfully adjust may present more of a challenge, in view of the fact that some of the important psychosocial variables (e.g., self-esteem, locus of control) may not be particularly malleable. However, the findings suggest that teaching emotional skills may be beneficial, particularly since there is evidence that such efforts can be successful and result in positive educational outcomes (e.g., Qualter et al., 2007). Evidence from the current research suggests that a focus on the specific areas of managing emotions, trying to maintain a positive outlook and recognising emotions in oneself and others may be an effective approach. Clearly, also, the strong associations between the TEIQue and adjustment suggest that efforts could be directed at the attributes, skills and self-perceptions which comprise this instrument.

Results also suggest that encouraging students to seek out and maintain as much social support as possible, and facilitating students in doing so, would be beneficial with regard to adjustment. Indeed, developing emotional skills may be one of the means by which students are better able to develop strong support networks.

Moreover, the present research indicates that the importance of various individual difference variables, or specific EI subcomponents, depends to a large degree on which facet of adjustment is under investigation. Aside from the implications for researchers, which are that exploring adjustment or EI at only the global level is likely to obscure important relationships, this also means that intervention or screening efforts may be directed at only at particular psychosocial variables, if only a certain aspect or aspects of adjustment are of concern.

Notwithstanding the above comments regarding developing emotional skills, findings from Studies 1 and 2 clearly support the notion that what really matters for university adjustment are students' self-perceptions. This is evident in all the psychosocial variables studied, and also in the findings from the multiple EI analyses, where self-reports of emotional skills and traits

demonstrated little association with actual abilities, yet the former shared most variance with adjustment.

In relation to the lack of association between trait and ability measures, it would appear to be important for those using self-report EI instruments to be made aware that, although the content of the latter may relate to emotional abilities, and the results from them clearly important in relation to university adjustment, they are not accurate measures of actual emotional abilities.

Some practical implications also arise from the investigation of longitudinal adjustment patterns. The finding of declines in academic adjustment suggest that there may be some benefit in making students aware in advance of the academic challenges associated with tertiary level education, with the aim of attenuating any feelings of distress or disillusionment in the student with regard to their academic situation. Efforts should also be made to ensure that students are as prepared as possible for these challenges by ensuring that they have the appropriate support mechanisms in place in terms of academic and pastoral guidance from tutors, and have been taught the generic competencies underpinning academic skills.

Finally, in view of the poor predictive validity demonstrated by the SACQ in Study 4, it seems reasonable to conclude that it would have limited utility as a diagnostic tool in the current setting, and, by extension, in similar institutions. Notwithstanding the above, the results suggest that there may be some, albeit modest, student success gains to be derived from seeking to enhance students' adjustment levels, particularly with regard to first year outcomes.

## **8.6 FUTURE DIRECTIONS**

Some of the limitations outlined above suggest potential avenues for future research. An important first step would be replication of the research in other types of higher education institution, since it would be expected that various aspects of an institution such as its size, location, prestige and student support processes may influence relations between variables.

As a further means of assessing the external validity of the current findings, future research on adjustment could explore similar questions to those addressed by this thesis, but in the relatively under-explored areas of part-time, distance and post-graduate students.

It would be beneficial if this future work aimed for more rigorous tests of causality with regard to psychosocial variables and adjustment by measuring psychosocial measures pre-transition. Manipulating study variables that may be amenable to intervention such as EI, and exploring any subsequent effects on adjustment, would also generate stronger evidence of causality.

Regarding the exploration of longitudinal adjustment that was undertaken in this study, useful developments along these lines would be to explore adjustment through to the end of the degree course, and measuring adjustment more frequently, particularly over the first year. This would afford a more detailed picture of patterns of adjustment, and indicate whether, for example, the observed declines in academic adjustment over the first two years continue apace. Research should also endeavour to identify which psychosocial variables appear to be able to predict substantially different trajectories of adjustment. Future research in this area may benefit from employing group-based statistical methods such as the trajectory technique employed by Duchesne et al. (2007) with the aim of investigating whether there exist distinct subgroups of students who follow similar adjustment trajectories. This statistical technique summarises longitudinal data by grouping individuals together on the basis of the similarity of their longitudinal trajectories (Duncan, Duncan, & Stryker, 2006; Nagin & Odgers, 2010). Thus, rather than the researcher attempting to identify or specify subgroups in the data a priori, they are inferred from the data and emerge from it in the form of trajectories (McLachlan & Peel, 2000). Antecedents and consequences (i.e., predictor variables and student success outcomes) associated with trajectory group membership could subsequently be explored.

Work in the general area of student adjustment could be substantially enhanced by including qualitative methods in research protocols. Whilst the current research identifies relationships among variables, it says relatively little about how and why the study variables act as protective factors during the transition to university. An appropriate technique to explore this may be that



used by Risquez et al. (2007), where students were asked to keep a reflective diary in which they recorded their thoughts and feelings as they started university. If students were instructed to focus on the problems they faced and how they overcame them, and their thought processes when encountering challenges, this may shed some light on how specifically their psychological strengths serve them as they deal with the vicissitudes of student life. Interviews and focus groups would be alternative means of enhancing our knowledge in this area. Taken alongside repeated quantitative measures of adjustment, such methods could also be a valuable means of determining what causes shifts in adjustment levels. Related to this, results from such investigations may illuminate how students feel about declining levels of academic adjustment, and whether these appear to be substantially related to distress or dropout.

Such methods may also give an insight into the attitudes and behaviours of those who adjust well, thus indicating additional factors that may be important for a smooth transition. They may also be a means of addressing one of the limitations outlined above regarding the SACQ. Specifically, the results of such qualitative enquiry may suggest how the SACQ might be refined, with items being added or excluded to more closely represent the adjustment issues faced and their importance to students.

Researchers may also wish to further explore EI and adjustment to university. This could involve other measures and conceptualisations of EI than the ones included here, including observer ratings of the individual's EI. Further research will be necessary when additional EI measures are developed, and research in this area will undoubtedly be advanced by the advent of new measures of ability EI, in particular (Van Rooy et al., 2005). Future research could also evaluate EI measures in terms of their incremental power over and above other EI instruments.

Additionally with regard to EI, the present investigations identified the ability to perceive emotions as an important incremental predictor of outcomes. Some speculative reasons for this were put forward, but additional research in this area would allow more definitive conclusions to be drawn. Further research along these lines could explore more generally the mechanisms by which EI is associated with adjustment to university, including, for example, investigating

the suggestion that higher-EI individuals are more likely to seek out and employ sources of support during the transition to university (Qualter et al., 2009).

In terms of interventions, it would also be useful to know whether and to what extent particular aspects of emotional competencies or EI can be taught, or are amenable to change. This would indicate which efforts in this direction are likely to be worthwhile.

Finally, as a further refinement, future research could explore associations using the SACQ clusters, rather than their superordinate subscales. This may reveal some important effects that may be obscured when analyses are performed at the subscale level.

## **8.7 SUMMARY**

The findings from this research contribute to our understanding of university adjustment and add substantially to the dearth of UK research on the subject. They support the international work which identifies aspects of positive and psychological functioning as being important for a smooth transition to university, and suggest that emotional intelligence, and in particular the TEIQue and MSCEIT, may have a useful role to play in this regard. Moreover, they indicate that the initial adjustment advantage demonstrated by those with better psychosocial skills is maintained long-term.

Some of the traditionally-observed student subgroup differences in adjustment or related constructs were observed in this research, whilst others were not. Overall, however, average adjustment levels suggest that students are generally adjusting well.

Results of longitudinal analyses indicate that some of the facets of adjustment follow different trajectories from each other over time, and that whilst the academic trajectory shows evidence of declines, social adjustment improves over time.

When the impact of adjustment on student success was assessed, it was concluded that relations between adjustment and attrition were weak, and only related to first year dropout. Similarly, academic adjustment was only weakly associated with academic performance. These results notwithstanding, Grayson's (2003) assertion that university adjustment is an important outcome

in its own right, independent of its effect on subsequent outcomes, appears to be well-founded.  
As such, the subject is a worthwhile focus for ongoing research efforts.

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## APPENDIX A: SCHUTTE EMOTIONAL INTELLIGENCE SCALE

Using the scale below, please indicate to what extent you agree or disagree with a statement by circling the corresponding number.

		Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
<b>1</b>	I know when to speak about my personal problems to others	1	2	3	4	5
<b>2</b>	When I am faced with obstacles, I remember times I faced similar obstacles and overcame them	1	2	3	4	5
<b>3</b>	I expect that I will do well on most things I try	1	2	3	4	5
<b>4</b>	Other people find it easy to confide in me	1	2	3	4	5
<b>5</b>	I find it hard to understand the non-verbal messages of other people	1	2	3	4	5
<b>6</b>	Some of the major events of my life have led me to re-evaluate what is important and not important	1	2	3	4	5
<b>7</b>	When my mood changes, I see new possibilities	1	2	3	4	5
<b>8</b>	Emotions are one of the things that make my life worth living	1	2	3	4	5
<b>9</b>	I am aware of my emotions as I experience them	1	2	3	4	5
<b>10</b>	I expect good things to happen	1	2	3	4	5

		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Agree or Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>11</b>	I like to share my emotions with others	1	2	3	4	5
<b>12</b>	When I experience a positive emotion I know how to make it last	1	2	3	4	5
<b>13</b>	I arrange events others enjoy	1	2	3	4	5
<b>14</b>	I seek out activities that make me happy	1	2	3	4	5
<b>15</b>	I am aware of the non-verbal messages I send to others	1	2	3	4	5
<b>16</b>	I present myself in a way that makes a good impression on others	1	2	3	4	5
<b>17</b>	When I am in a positive mood, solving problems is easy for me	1	2	3	4	5
<b>18</b>	By looking at their facial expressions, I recognise the emotions people are experiencing	1	2	3	4	5
<b>19</b>	I know why my emotions change	1	2	3	4	5
<b>20</b>	When I am in a positive, mood I am able to come up with new ideas	1	2	3	4	5
<b>21</b>	I have control over my emotions	1	2	3	4	5
<b>22</b>	I easily recognise my emotions as I experience them	1	2	3	4	5

		Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
23	I motivate myself by imagining a good outcome to tasks I take on	1	2	3	4	5
24	I compliment others when they have done something well	1	2	3	4	5
25	I am aware of the non-verbal messages other people send	1	2	3	4	5
26	When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself	1	2	3	4	5
27	When I feel a change in emotions, I tend to come up with new ideas	1	2	3	4	5
28	When I am faced with a challenge, I give up because I believe I will fail	1	2	3	4	5
29	I know what other people are feeling just by looking at them	1	2	3	4	5
30	I help other people feel better when they are down	1	2	3	4	5
31	I use good moods to help myself keep trying in the face of obstacles	1	2	3	4	5
32	I can tell how people are feeling by listening to the tone of their voice	1	2	3	4	5
33	It is difficult for me to understand why people feel the way they do	1	2	3	4	5

## APPENDIX B: ROSENBERG SELF-ESTEEM SCALE

Below is a list of statements dealing with your general feelings about yourself. If you strongly disagree, circle **SD**. If you disagree with the statement, circle **D**. If you agree, circle **A**. If you strongly agree, circle **SA**.

		<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>1</b>	On the whole, I am satisfied with myself	SD	D	A	SA
<b>2</b>	At times, I think I am no good at all	SD	D	A	SA
<b>3</b>	I feel that I have a number of good qualities	SD	D	A	SA
<b>4</b>	I am able to do things as well as most other people	SD	D	A	SA
<b>5</b>	I feel I do not have much to be proud of	SD	D	A	SA
<b>6</b>	I certainly feel useless at times	SD	D	A	SA
<b>7</b>	I feel that I'm a person of worth, at least on an equal plane with others	SD	D	A	SA
<b>8</b>	I wish I could have more respect for myself	SD	D	A	SA
<b>9</b>	All in all, I am inclined to feel that I am a failure	SD	D	A	SA
<b>10</b>	I take a positive attitude toward myself	SD	D	A	SA

## APPENDIX C: GENERALISED SELF-EFFICACY SCALE

Read each statement below and then circle a number from 1-4 to indicate how well you feel the statement describes you.

		Not at all true	Hardly true	Moderately true	Exactly true
<b>1</b>	I can always manage to solve difficult problems if I try hard enough	1	2	3	4
<b>2</b>	If someone opposes me, I can find the means and ways to get what I want	1	2	3	4
<b>3</b>	It is easy for me to stick to my aims and accomplish my goals	1	2	3	4
<b>4</b>	I am confident that I could deal efficiently with unexpected events	1	2	3	4
<b>5</b>	Thanks to my resourcefulness, I know how to handle unforeseen situations	1	2	3	4
<b>6</b>	I can solve most problems if I invest the necessary effort	1	2	3	4
<b>7</b>	I can remain calm when facing difficulties because I can rely on my coping abilities	1	2	3	4
<b>8</b>	When I am confronted with a problem, I can usually find several solutions	1	2	3	4
<b>9</b>	If I am in trouble, I can usually think of a solution	1	2	3	4
<b>10</b>	I can usually handle whatever comes my way	1	2	3	4

## APPENDIX D: RELATIONSHIP QUESTIONNAIRE

Following are descriptions of four general relationship styles that people often report.

Please read each description and **CIRCLE** the letter corresponding to the style that *best* describes you or is *closest* to the way you generally are in your close relationships.

- A.** It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me.
- B.** I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.
- C.** I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.
- D.** I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

Please rate each of the following relationship styles according to the *extent* to which you think each description corresponds to your general relationship style.

		Not at all like me	→	Somewhat like me	→	Very much like me		
<b>A</b>	It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me.	1	2	3	4	5	6	7
<b>B</b>	I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or to depend on them. I worry that I will be hurt if I allow myself to become too close to others.	1	2	3	4	5	6	7
<b>C</b>	I want to be completely emotionally intimate with others, but I often find that others are reluctant to get as close as I would like. I am uncomfortable being without close relationships, but I sometimes worry that others don't value me as much as I value them.	1	2	3	4	5	6	7
<b>D</b>	I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.	1	2	3	4	5	6	7

## APPENDIX E: MULTIDIMENSIONAL LOCUS OF CONTROL SCALE

Read each statement carefully and then indicate the extent to which you agree or disagree by circling the appropriate number.

		Strongly disagree	Disagree somewhat	Slightly disagree	Slightly agree	Agree somewhat	Strongly agree
<b>1</b>	Whether or not I get to be a leader depends mostly on my ability	-3	-2	-1	+1	+2	+3
<b>2</b>	To a great extent my life is controlled by accidental happenings	-3	-2	-1	+1	+2	+3
<b>3</b>	I feel like what happens in my life is mostly determined by powerful people	-3	-2	-1	+1	+2	+3
<b>4</b>	Whether or not I get into a car accident depends mostly on how good a driver I am	-3	-2	-1	+1	+2	+3
<b>5</b>	When I make plans, I am almost certain to make them work	-3	-2	-1	+1	+2	+3
<b>6</b>	Often there is no chance of protecting my personal interests from bad luck happenings	-3	-2	-1	+1	+2	+3
<b>7</b>	When I get what I want, it's usually because I'm lucky	-3	-2	-1	+1	+2	+3
<b>8</b>	Although I might have good ability, I will not be given leadership responsibility without appealing to those in positions of power	-3	-2	-1	+1	+2	+3
<b>9</b>	How many friends I have depends on how nice a person I am	-3	-2	-1	+1	+2	+3
<b>10</b>	I have often found that what is going to happen will happen	-3	-2	-1	+1	+2	+3
<b>11</b>	My life is chiefly controlled by powerful others	-3	-2	-1	+1	+2	+3
<b>12</b>	Whether or not I get into a car accident is mostly a matter of luck	-3	-2	-1	+1	+2	+3



		<b>Strongly disagree</b>	<b>Disagree somewhat</b>	<b>Slightly disagree</b>	<b>Slightly agree</b>	<b>Agree somewhat</b>	<b>Strongly agree</b>
<b>13</b>	People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups	-3	-2	-1	+1	+2	+3
<b>14</b>	It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune	-3	-2	-1	+1	+2	+3
<b>15</b>	Getting what I want requires pleasing those people above me	-3	-2	-1	+1	+2	+3
<b>16</b>	Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time	-3	-2	-1	+1	+2	+3
<b>17</b>	If important people were to decide they didn't like me, I probably wouldn't make many friends	-3	-2	-1	+1	+2	+3
<b>18</b>	I can pretty much determine what will happen in my life	-3	-2	-1	+1	+2	+3
<b>19</b>	I am usually able to protect my personal interests	-3	-2	-1	+1	+2	+3
<b>20</b>	Whether or not I get into a car accident depends mostly on the other driver	-3	-2	-1	+1	+2	+3
<b>21</b>	When I get what I want, it's usually because I worked hard for it	-3	-2	-1	+1	+2	+3
<b>22</b>	In order to have my plans work, I make sure that they fit in with the desires of people who have power over me	-3	-2	-1	+1	+2	+3
<b>23</b>	My life is determined by my own actions	-3	-2	-1	+1	+2	+3
<b>24</b>	It's chiefly a matter of fate whether or not I have a few friends or many friends	-3	-2	-1	+1	+2	+3

## APPENDIX F: SOCIAL PROVISIONS SCALE

Please indicate the extent to which you agree with the following statements by circling the appropriate number.

		Strongly Disagree	Disagree	Agree	Strongly Agree
<b>1</b>	There are people I know will help me if I really need it	1	2	3	4
<b>2</b>	I do not have close relationships with other people	1	2	3	4
<b>3</b>	There is no one I can turn to in times of stress	1	2	3	4
<b>4</b>	There are people who can call on me to help them	1	2	3	4
<b>5</b>	There are people who like the same social activities that I do	1	2	3	4
<b>6</b>	Other people do not think I am good at what I do	1	2	3	4
<b>7</b>	I feel responsible for taking care of someone else	1	2	3	4
<b>8</b>	I am with a group of people who think the same way that I do about things	1	2	3	4
<b>9</b>	I do not think that other people respect what I do	1	2	3	4
<b>10</b>	If something went wrong, no one would help me	1	2	3	4
<b>11</b>	I have close relationships that make me feel good	1	2	3	4
<b>12</b>	I have someone to talk to about decisions in my life	1	2	3	4
<b>13</b>	There are people who value my skills and abilities	1	2	3	4
<b>14</b>	There is no one who has the same interests and concerns as me	1	2	3	4
<b>15</b>	There is no one who needs me to take care of them	1	2	3	4
<b>16</b>	I have a trustworthy person to turn to if I have problems	1	2	3	4
<b>17</b>	I feel a strong emotional tie with at least one other person	1	2	3	4
<b>18</b>	There is no one I can count on for help if I really need it	1	2	3	4
<b>19</b>	There is no one I feel comfortable talking about problems with	1	2	3	4
<b>20</b>	There are people who admire my talents and abilities	1	2	3	4
<b>21</b>	I do not have a feeling of closeness with anyone	1	2	3	4
<b>22</b>	There is no one who likes to do the things that I do	1	2	3	4
<b>23</b>	There are people I can count on in an emergency	1	2	3	4
<b>24</b>	No one needs me to take care of them	1	2	3	4

## APPENDIX G: INTERNATIONAL PERSONALITY ITEM POOL

On the following pages, there are phrases describing people's behaviours. Please use the rating scale below to describe how accurately each statement describes you.

Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age.

So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence.

Please read each statement carefully, and then circle the number that corresponds to your reply.

	Very Inaccurate	Moderately Inaccurate	Neither Inaccurate nor Accurate	Moderately Accurate	Very Accurate			
	1	2	3	4	5			
1	Am the life of the party.			1	2	3	4	5
2	Feel little concern for others.			1	2	3	4	5
3	Am always prepared.			1	2	3	4	5
4	Get stressed out easily.			1	2	3	4	5
5	Have a rich vocabulary.			1	2	3	4	5
6	Don't talk a lot.			1	2	3	4	5
7	Am interested in people.			1	2	3	4	5
8	Leave my belongings around.			1	2	3	4	5
9	Am relaxed most of the time.			1	2	3	4	5
10	Have difficulty understanding abstract ideas.			1	2	3	4	5
11	Feel comfortable around people.			1	2	3	4	5
12	Insult people.			1	2	3	4	5
13	Pay attention to details.			1	2	3	4	5
14	Worry about things.			1	2	3	4	5
15	Have a vivid imagination.			1	2	3	4	5
16	Keep in the background.			1	2	3	4	5
17	Sympathize with others' feelings.			1	2	3	4	5
18	Make a mess of things.			1	2	3	4	5
19	Seldom feel blue.			1	2	3	4	5

20	Am not interested in abstract ideas.	1	2	3	4	5
21	Start conversations.	1	2	3	4	5
22	Am not interested in other people's problems.	1	2	3	4	5
23	Get chores done right away.	1	2	3	4	5
24	Am easily disturbed.	1	2	3	4	5
25	Have excellent ideas.	1	2	3	4	5
26	Have little to say.	1	2	3	4	5
27	Have a soft heart.	1	2	3	4	5
28	Often forget to put things back in their proper place.	1	2	3	4	5
29	Get upset easily.	1	2	3	4	5
30	Do not have a good imagination.	1	2	3	4	5
31	Talk to a lot of different people at parties.	1	2	3	4	5
32	Am not really interested in others.	1	2	3	4	5
33	Like order.	1	2	3	4	5
34	Change my mood a lot.	1	2	3	4	5
35	Am quick to understand things.	1	2	3	4	5
36	Don't like to draw attention to myself.	1	2	3	4	5
37	Take time out for others.	1	2	3	4	5
38	Shirk my duties.	1	2	3	4	5
39	Have frequent mood swings.	1	2	3	4	5
40	Use difficult words.	1	2	3	4	5
41	Don't mind being the centre of attention.	1	2	3	4	5
42	Feel others' emotions.	1	2	3	4	5
43	Follow a schedule.	1	2	3	4	5
44	Get irritated easily.	1	2	3	4	5
45	Spend time reflecting on things.	1	2	3	4	5
46	Am quiet around strangers.	1	2	3	4	5
47	Make people feel at ease.	1	2	3	4	5
48	Am exacting in my work.	1	2	3	4	5
49	Often feel blue.	1	2	3	4	5
50	Am full of ideas.	1	2	3	4	5

**APPENDIX H: TRAIT EMOTIONAL INTELLIGENCE QUESTIONNAIRE: SHORT  
FORM**

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).

	<b>Completely Disagree</b>						<b>Completely Agree</b>
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1. Expressing my emotions with words is not a problem for me	1	2	3	4	5	6	7
2. I often find it difficult to see things from another person’s viewpoint	1	2	3	4	5	6	7
3. On the whole, I’m a highly motivated person	1	2	3	4	5	6	7
4. I usually find it difficult to regulate my emotions	1	2	3	4	5	6	7
5. I generally don’t find life enjoyable	1	2	3	4	5	6	7
6. I can deal effectively with people	1	2	3	4	5	6	7
7. I tend to change my mind frequently	1	2	3	4	5	6	7
8. Many times, I can’t figure out what emotion I’m feeling	1	2	3	4	5	6	7
9. I feel that I have a number of good qualities	1	2	3	4	5	6	7
10. I often find it difficult to stand up for my rights	1	2	3	4	5	6	7
11. I’m usually able to influence the way other people feel	1	2	3	4	5	6	7
12. On the whole, I have a gloomy perspective on most things	1	2	3	4	5	6	7
13. Those close to me often complain that I don’t treat them right	1	2	3	4	5	6	7
14. I often find it difficult to adjust my life according to the circumstances	1	2	3	4	5	6	7

15.	On the whole, I'm able to deal with stress	1	2	3	4	5	6	7
16.	I often find it difficult to show my affection to those close to me	1	2	3	4	5	6	7
17.	I'm normally able to "get into someone's shoes" and experience their emotions	1	2	3	4	5	6	7
18.	I normally find it difficult to keep myself motivated	1	2	3	4	5	6	7
19.	I'm usually able to find ways to control my emotions when I want to	1	2	3	4	5	6	7
20.	On the whole, I'm pleased with my life	1	2	3	4	5	6	7
21.	I would describe myself as a good negotiator	1	2	3	4	5	6	7
22.	I tend to get involved in things I later wish I could get out of	1	2	3	4	5	6	7
23.	I often pause and think about my feelings	1	2	3	4	5	6	7
24.	I believe I'm full of personal strengths	1	2	3	4	5	6	7
25.	I tend to "back down" even if I know I'm right	1	2	3	4	5	6	7
26.	I don't seem to have any power at all over other people's feelings	1	2	3	4	5	6	7
27.	I generally believe that things will work out fine in my life	1	2	3	4	5	6	7
28.	I find it difficult to bond well even with those close to me	1	2	3	4	5	6	7
29.	Generally, I'm able to adapt to new environments	1	2	3	4	5	6	7
30.	Others admire me for being relaxed	1	2	3	4	5	6	7

## APPENDIX I: EMOTIONAL SELF-EFFICACY SCALE

Please rate how **confident** you are that, as of now, you can do the following

*After reading each item please indicate your response by marking the appropriate number*

	Not at all confident	A little confident	Moderately confident	Quite confident	Very confident
1. Correctly identify your own negative emotions	1	2	3	4	5
2. Help another person change a negative emotion to a positive emotion	1	2	3	4	5
3. Create a positive emotion when feeling a negative emotion	1	2	3	4	5
4. Know what causes you to feel a positive emotion	1	2	3	4	5
5. Correctly identify when another person is feeling a negative emotion	1	2	3	4	5
6. Use positive emotions to generate novel solutions to old problems	1	2	3	4	5
7. Realise what causes another person to feel a positive emotion	1	2	3	4	5
8. Change your negative emotion to a positive emotion	1	2	3	4	5
9. Correctly identify your own positive emotions	1	2	3	4	5
10. Generate in yourself the emotion another person is feeling	1	2	3	4	5
11. Know what causes you to feel a negative emotion	1	2	3	4	5
12. Regulate your own emotions when under pressure	1	2	3	4	5
13. Correctly identify when another person is feeling a positive emotion	1	2	3	4	5
14. Get into a mood that best suits the occasion	1	2	3	4	5
15. Realise what causes another person to feel a negative emotion	1	2	3	4	5
16. Help another person to regulate emotions when under pressure	1	2	3	4	5

17.	Notice the emotion your body language is portraying	1	2	3	4	5
18.	Use positive emotions to generate good ideas	1	2	3	4	5
19.	Understand what causes your emotions to change	1	2	3	4	5
20.	Calm down when feeling angry	1	2	3	4	5
21.	Notice the emotion another person's body language is portraying	1	2	3	4	5
22.	Create emotions to enhance cognitive performance	1	2	3	4	5
23.	Understand what causes another person's emotions to change	1	2	3	4	5
24.	Help another person calm down when he or she is feeling angry	1	2	3	4	5
25.	Recognize what emotion you are communicating through your facial expression	1	2	3	4	5
26.	Create emotions to enhance physical performance	1	2	3	4	5
27.	Figure out what causes you to feel differing emotions	1	2	3	4	5
28.	Regulate your own emotions when close to reaching a goal	1	2	3	4	5
29.	Recognize what emotion another person is communicating through his or her facial expression	1	2	3	4	5
30.	Generate the right emotion so that creative ideas can unfold	1	2	3	4	5
31.	Figure out what causes another person's differing emotions	1	2	3	4	5
32.	Help another person regulate emotions after he or she has suffered a loss	1	2	3	4	5



## APPENDIX J: RELATIONSHIP SCALES QUESTIONNAIRE

Please read each of the following statements and rate the extent to which you believe each statement best describes your feelings about close relationships.

		<b>Not at all like me</b>		<b>Somewhat like me</b>		<b>Very much like me</b>
1.	I find it difficult to depend on other people.	1	2	3	4	5
2.	It is very important to me to feel independent.	1	2	3	4	5
3.	I find it easy to get emotionally close to others.	1	2	3	4	5
4.	I want to merge completely with another person.	1	2	3	4	5
5.	I worry that I will be hurt if I allow myself to become too close to others.	1	2	3	4	5
6.	I am comfortable without close emotional relationships.	1	2	3	4	5
7.	I am not sure that I can always depend on others to be there when I need them.	1	2	3	4	5
8.	I want to be completely emotionally intimate with others.	1	2	3	4	5
9.	I worry about being alone.	1	2	3	4	5
10.	I am comfortable depending on other people.	1	2	3	4	5
11.	I often worry that romantic partners don't really love me.	1	2	3	4	5
12.	I find it difficult to trust others completely.	1	2	3	4	5
13.	I worry about others getting too close to me.	1	2	3	4	5
14.	I want emotionally close relationships.	1	2	3	4	5

15.	I am comfortable having other people depend on me.	1	2	3	4	5
16.	I worry that others don't value me as much as I value them.	1	2	3	4	5
17.	People are never there when you need them.	1	2	3	4	5
18.	My desire to merge completely sometimes scares people away.	1	2	3	4	5
19.	It is very important to me to feel self-sufficient.	1	2	3	4	5
20.	I am nervous when anyone gets too close to me.	1	2	3	4	5
21.	I often worry that romantic partners won't want to stay with me.	1	2	3	4	5
22.	I prefer not to have other people depend on me.	1	2	3	4	5
23.	I worry about being abandoned.	1	2	3	4	5
24.	I am somewhat uncomfortable being close to others.	1	2	3	4	5
25.	I find that others are reluctant to get as close as I would like.	1	2	3	4	5
26.	I prefer not to depend on others.	1	2	3	4	5
27.	I know that others will be there when I need them.	1	2	3	4	5
28.	I worry about having others not accept me.	1	2	3	4	5
29.	Romantic partners often want me to be closer than I feel comfortable being.	1	2	3	4	5
30.	I find it relatively easy to get close to others.	1	2	3	4	5