Predictors of Resilience in First-Year University Students

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Statement of Sources

I declare that this report is my own original work and that contributions of others have been duly acknowledged.

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Abstract

Recent research focussed on student adaptation to university has shown that resilience is an important attribute for students. As such, this study aimed to identify the concurrent demographic, intrapersonal and interpersonal factors predicting resilience in first year university students. A further aim was to investigate whether there were differences in the experience of full-time versus part-time students in resilience. Participants were 420 students enrolled in a variety of courses at the University of Tasmania, who completed questionnaires measuring resilience and predictors thereof. The hypothesis that higher levels of personal growth initiative, optimism and social adjustment would predict higher levels of resilience was supported. Psychological distress negatively predicted resilience. Contrary to expectations, attachment to university and social support were not found to positively predict resilience. Part-time students reported higher levels of resilience, personal growth initiative and optimism, as well as lower levels of psychological distress compared to full-time students. No differences were found between part-time and full-time students in social adjustment. It was concluded that resilience in first year university students encompasses intrapersonal, interpersonal and demographic factors.

Predictors of Resilience in First Year University Students

The student experience at university has received increased attention from researchers and policy makers alike in an attempt to understand the nature of student attrition in an increasingly diverse student population. Student retention is an important issue for the individual concerned in terms of future occupational status, satisfaction and income, and the university in terms of reputation and resources (Elliott & Shin, 2002). Student retention also has an impact on society in terms of research and innovation, and on economic and social progress (Bradley, Noonan, Nugent, & Scales, 2008). Previous research has shown that the transition to university can be a stressful experience involving a range of emotional (e.g. managing stress and depressive symptomatology), social (e.g. social support networks and moving away from home) and academic adjustments (e.g. course demand and academic environment) (Dyson & Renk, 2006; Friedlander, Reid, Shupak, & Cribbie, 2007; Gall, Evans, & Bellerose, 2000; Gerdes & Mallinckrodt, 1994; Munro & Pooley, 2009). In short, students must make a range of adjustments in order to successfully adapt to university and complete their degree. Factors that contribute to resilience, a factor found to be predictive of positive adaptation to university (House, 2010), will be examined within the context of the present thesis.

Adaptation

Adaptation refers to the process by which individuals adjust to major life changes and to their surroundings (Head, 2010). Adaptation to university is multifaceted and involves a variety of coping responses to the demands faced (Baker & Siryk, 1986). Previous research suggests successful adaptation to university requires students possess a general satisfaction with the academic environment,

integration into the university social life, personal-emotional wellbeing, attachment to the university (Baker & Siryk, 1984; 1986; 1989; Gerdes & Mallinckrodt, 1994) perceived social support from friends, and resilience (House, 2010). Students facing difficulties with adaptation have a higher potential for attrition (Baker & Siryk, 1984). Recent Tasmanian research into student adaptation to university found that resilience was shown to be the strongest predictor identified, with 64% of the variance in adaptation to university predicted by this factor alone (House, 2010).

Resilience represents multidimensional attributes that allow individuals to thrive in the face of adversity (Connor & Davidson, 2003). Resilience can be thought of as an evaluation of stress coping ability and can be modified and improved, making it an important target in the treatment of depression, anxiety and stress (Connor & Davidson, 2003). Individuals with higher levels of resilience are generally more able to utilise family, social and external support systems to cope more effectively with stress, and lower stress levels predict increased adaptation in general (Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003) and during the transition to university studies (House, 2010).

The first-year of university is when students are most at risk of experiencing negative consequences associated with the transition experience (Baker & Siryk, 1986; McInnis, 2001; Tinto, 2006). Attrition rates for first year university students was over 20% for all years 1994 to 2002 and reduced to an attrition rate of 10 to 11% for second year students (Department of Education, Science and Training, 2004). Figures of attrition vary somewhat, however, an estimated 28% of students fail to complete their degree (Bradley et al., 2008; McInnis, James, & Hartley, 2000; Tinto, 2009). While the transition phase during adaptation to a new environment is important, it is also essential to identify and subsequently support at-risk groups

during this phase by providing proactive prevention and intervention programs in the months prior to and during the transition phase (Compas, Wagner, Slavin, & Vannatta, 1986; Norris, 2010). Therefore, if students with lower levels of resilience can be identified prior to or upon commencement of university, appropriate interventions may be able to promote resilience and thus facilitate a positive adaptation to university.

Resilience

The last ten years have seen a growth in positive psychology which encompasses resilience and increased awareness of the importance of resilience when individuals are faced with challenging circumstances (Hart & Sasso, 2011). However, although resilience research has increased, the definition remains somewhat controversial and unclear. This is highlighted by different, and to some extent, inconsistent measures of resilience. A study of Norwegian medical students found resilience was higher in students who were able to achieve a balance between study and their personal and social lives (Kjeldstakli et al., 2006). However, this study did not use a recognised resilience scale; resilience was instead measured by using one quality of life question; *"When you think about your life today, are you by and large very satisfied or very dissatisfied?",* and thus resilience appears to have been equated to stable high levels of life satisfaction as measured by a single-item Likert scale measure. Their interpretation was somewhat problematic as researchers have demonstrated that it is possible for an individual to be resilient while experiencing low or fluctuating levels of life satisfaction (Connor & Davidson, 2003; Tusaie, Puskar & Sereika, 2007).

Resilience is based on the premise that resilient individuals are able to bounce back from difficult circumstances, and as such, if individuals report stable high life satisfaction their capacity for resilience may yet to be tested. A further example of the multiple definitions of resilience currently employed by researchers is that of Diehl and Hay (2010), who whilst arguing that resilience factors influence daily well-being, emotional stability and reactivity, restricted their definition of resilience to perceived control and self-concept incoherence on stress reactivity. These examples raise questions around to what extent those researching resilience are measuring resilience as opposed to a different construct altogether.

Further highlighting the complexity surrounding the definition of resilience are the differences between current measurement tools available. For example, the Resilience Scale for Adults (RSA) includes measures of social competence, personal competence, family coherence, social support, and personal structure which are protective resources that promote resilience and adaptation (Friborg et al., 2003). As previously identified, authors (including Kjeldstakli et al. 2006) have assessed resilience through a single-item life satisfaction measure. The Connor-Davidson Resilience Scale (CD-RISC) is one of the most widely used measures of adult resilience and takes the perspective that resilience is mainly at an individual level, a personal quality rather than including extrinsic factors. A review of nineteen measures of resilience found that the CD-RISC was one of the top three scales, and scored highest on total quality assessment (i.e. psychometric ratings and conceptual and theoretical accuracy) (Windle, Bennett & Noyes, 2011). For this reason the definition and measurement of resilience employed by Connor and Davidson will be utilised within the current thesis.

Research has demonstrated that resilience levels fluctuate (Connor & Davidson, 2003) and that resilience has been associated with well-being (Boudrias et al., 2011). Perren et al. (2011) conducted a study with participants from various higher education institutions in Zurich who retrospectively self-reported well-being as a continuous curve starting a few months before the University entry until approximately one year after entry. Perren et al. identified that wellbeing decreased slightly during the first months after university entry and then slowly increased. A second study by Perren et al. requested students complete a survey four weeks before beginning university and then every two weeks at nine time points throughout the year; these results were consisted with the first study. This fluctuation in wellbeing is consistent with models of culture shock, which has been defined as the anxiety experienced when the familiar signs and symbols of social intercourse are lost (Olberg, 2006). While traditional models of culture shock suggested that initial stages are characterised by euphoria (Olberg, 2006; see Figure 1), Brown and Holloway (2008) demonstrated that culture shock experienced during the transition to university resulted in higher levels of stress during the beginning of the university year. Thus resilience may fluctuate throughout the university year emphasising the importance of support service provision, particularly at the beginning of the first semester of study. Furthermore, the transition to university cannot simply be equated with other major life transitions such as those encapsulated within traditional culture-shock models.

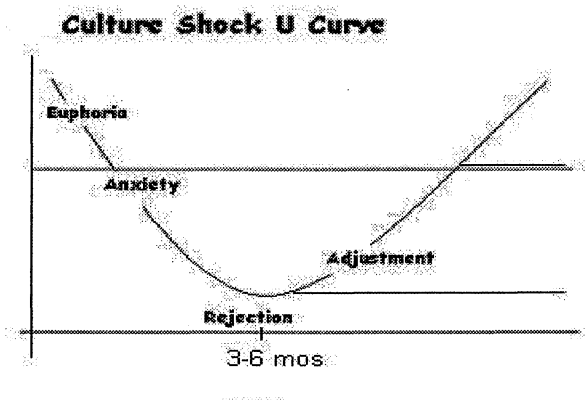

Figure 1. Traditional models of culture shock assume that early stages are characterised by high euphoria

(source: University of Toronto; http://www.utoronto.ca/safety.abroad/go_global_guide_shock.html)

Enrolment Status: Full -Time Versus Part-Time and Student Resilience

Literature on the first-year university experience has primarily focused on traditional school leaver students (Cooke, Bewick, Barkham, Bradley & Audin, 2006; Friedlander et al., 2007; Gibney, Moore, Murphy & O'Sullivan, 2010); however the first-year university cohort is not a homogenous group (Darmody & Fleming, 2009; Hardy et al., 2009; House, 2010; Laird & Cruce, 2009). Increasingly literature has emerged expanding upon issues beyond traditional school leavers; with research examining mature-aged students (Cantwell, Archer & Burke, 2001; Meehan & Negy, 2003; Munro & Pooley, 2009) and part-time students (Darmody & Fleming, 2009; Hayden & Long, 2006; Jamieson, Sabates, Woodley & Feinstein, 2009; York & Longden, 2008).

Mature-aged (or non-traditional entry) student enrolments in Australia are increasing (McInnis, 2001; Phillips et al., 2003), and while matured-aged students are an important area of research due to increasing enrolments and limited previous research, House (2010) found no differences in adaptation to university between mature-aged and traditional students. However, full-time students had significantly

higher levels of adaptation and resilience compared to part-time students (House, 2010). Considering that part-time student enrolments are increasing (Phillips et al., 2003) with 30% of Australian students studying part-time in 2012 (Australian Government, 2013), further research into reasons behind the differing adaptations and resilience levels of part-time compared to full-time students is imperative. Moreover, there are proportionately more mature-aged part-time students (Laird & Cruce, 2009; Yorke & Longden, 2008).

The number of unique and conflicting demands part-time students potentially have to manage (e.g. partner, family, and work demands) may lead to lower levels of satisfaction and arguably lower adaptation over time for this group (Gall et al., 2000; Hayden & Long, 2006). Alternatively, it may be that these different self aspects (i.e. increased self-complexity), may provide a protective effect. Self complexity refers to having a greater number of self-aspects and maintaining greater distinctions among self-aspects (Linville, 1987). This means that when one aspect of self is under threat there are others to fall back on to preserve self-esteem and self-efficacy, and is arguably linked to resilience and successful adaptation within the university context (Cantwell et al., 2001). Conversely, findings that part-time students had lower resilience levels (House, 2010) may suggest that rather than the self-complexity hypothesis being beneficial, the addition of university study may mean there are too many roles and pressures, and resilience is reduced. This appears to be consistent with the theory of conservation of resources, which suggests individuals have a finite amount of resources and if these are exceeded well-being suffers (Hobfoll, 1989).

While resilience has been positively associated with age (Friborg et al., 2003) and many part-time students are mature-aged (Krause, 2005) part-time older students may not be any more resilient in the context of study than traditional full-time

students as many may be entering university after a considerable length of time away from study and school. For traditional students it may be viewed as a more logical progression after completing college and as such may not represent as significant a change; this may be particularly the case when students are able to remain at home or do not need to move great distances from their home.

Despite the heterogeneous nature of the Australian university student cohort, research into strategies aimed to enhance student engagement, resilience, adaptation, and therefore retention has been predominantly oriented towards traditional full-time student populations (Andrews, 2006; Bath, 2008). Furthermore, previous research has tended to look at first-year students as a homogenous group or to look at the experience of part-time students only. A potential problem in disentangling the variables affecting resilience for part-time students is the heterogeneous nature of the group. It is however, still important to look at the difference experiences of part-time versus full-time students, particularly with previous findings indicating no differences between mature-age versus traditional students in adaptation (House, 2010). Thus, despite differences in age, the true issue appears to be enrolment status. It may be that factors predicting resilience for full-time students are different from those predicting resilience for part-time students and therefore different strategies and interventions are needed for each group.

Personal Growth Initiative and Resilience

Research suggests individuals with high levels of personal growth initiative (PGI) generally have high levels of well-being and thus increased resilience (Robitschek, 2011; Weigold, Porfeli & Weigold, 2013). PGI refers to an individual's intentional and active engagement in the self-change process (Robitschek, 1998).

Individuals high in PGI have a strong sense of purpose, intentionally seek out and take advantage of opportunities for growth and are aware of their personal changes (which may be cognitive, behavioural or affective), over time (Robitschek, 1998). Robitschek and Kashubeck (1999) suggest those high in PGI may be able to minimise current distress and prevent future distress through early recognition of distress followed by taking action to change themselves or the situation. Robitschek and Kashubeck propose that by teaching individuals to engage in more intentional self-improvement (i.e. personal growth) their mental health may be enhanced. Furthermore, PGI has also been linked to an ability to adapt (Robitschek, 2003). Research conducted with students from universities in the United States of America found that higher levels of PGI were able to buffer the impact of acculturative stress on adaptation for international students (Yakunina, Weigold & Weigold, 2013). Thus, if PGI is able to assist in adaption this would suggest that it may be a predictor of resilience. Therefore, the promotion of PGI may be an important aspect in the promotion of interventions to improve mental health and resilience levels in students during the transition to university.

In their study examining predictors of resilience in university students, Dawson and Pooley (2013) measured the construct of perceived parental autonomy support (PAS). PAS was conceptualized as the promotion of independent functioning (PIF) wherein parents encourage their children to make their own decisions and rely on themselves, and the promotion of volitional functioning (PVF) wherein exploration and decision making was based on own interests, values and goals. Dawson and Pooley found that PIF and PVF were both predictors of resilience in young (17 – 19 years) first year university students. It could be argued that the constructs of PIF and PVF are measuring a similar construct to PGI, as parents were

encouraging a sense of purpose and intentionally encouraging offspring to seek out values and goals to enable them to take advantage of opportunities for growth.

Stevic and Ward (2008) used the PGIS in a study of university students and found positive feedback and life satisfaction were significant factors in achieving PGI. Furthermore, they suggested that university was an important time to find meaning in life and promote personal growth. Thus it may be agued that the construct of PGI would be relevant when researching resilience in university students to promote adaptation and reduce attrition.

Optimism

Researchers suggest optimism and resilience are related, making optimism an important construct to examine in relation to resilience in first-year university students (Boudrias et al., 2011; Davis & Asliturk, 2011; Tusaie et al., 2007). Optimism may be thought of as the tendency to expect favourable life outcomes (Marshall, Wortman, Kusuals, Hervig & Vickers, 1992). Optimists differ from pessimists in their coping styles and responses to adversity, and tend to use problem-focused or more adaptive emotion-focused coping (e.g. acceptance, humour and positive reframing) (Scheier, Carver & Bridges, 1994). Conversely, pessimists are more prone to engage in denial and disengagement both mentally and physically (Scheier et al., 1994). Optimism has been found to be a protective factor for resilience, with resilient individuals having a more positive perception of the world and hope for the future (Mak, Ng & Wong, 2011). Furthermore, optimism is a beneficial trait for both psychological and physical well-being (Scheier et al., 1994). Optimists are more likely to believe they are able to achieve their goals despite adversity, and thus remain engaged in efforts rather than potentially giving up

(Scheier et al., 1994). This suggests that if university students have higher levels of optimism they will be more likely to have increased resilience and thus successfully adapt to university, as well as experience a decreased risk of withdrawal from study.

Davis and Asliturk, (2011) conducted a review of resilience literature and found that having a tendency for realistic optimism was associated with a greater ability to cope and adapt to adversity. Realistic optimism, as opposed to unrealistic optimism, is when individuals have both positive and negative thoughts about the future (Davis & Asliturk, 2011). It was concluded that those who are able to consider a range of possible outcomes, rather than only the desired positive outcomes, were better able to facilitate effective problem solving and support seeking strategies which in turn resulted in enhanced adaptation to adversity. Dawson and Pooley (2013) conducted a study examining predictors of resilience in first year university students during semester one and semester two and found optimism was a predictor of resilience at both time points. However, Dawson and Pooley restricted their study to students between the ages of 17 to 19 years of age which may limit generalisability, particularly given the heterogeneity of the first year cohort (Hardy et al., 2009; House, 2010). If optimism was a predictor of resilience in first year students, strategies to assist students to challenge unrealistic or pessimistic cognitions and ways of thinking may facilitate adaptation to university.

Tusaie et al., (2007) conducted a study investigating predictors of psychosocial resilience in rural adolescents aged 14 to 18 years of age and found optimism was the strongest direct positive influence on resilience. Older male adolescents reported higher levels of resilience when they had higher levels of optimism and higher levels of perceived support from friends and family even when they had experienced multiple negative life events. Furthermore, optimism and

perceived family support were found to be more powerful than perceived social support from friends for building resilience in adolescents. This suggests that resilience and levels of wellness can be achieved during adversity (Tusaie et al., 2007). However, the authors measured resilience using three measures; the Reynolds Adolescent Depression Scale (RADS; Reynolds, 1986), Drug Use Screening Inventory (DUSI; Tartar, 1990) and the four cognitive subscales of the Coping Response Inventory – Youth Form (CRI-Y; Moos & Schaeffer, 1993), rather than a tool specifically designed to measure of resilience such as the CD-RISC. Therefore, these results may not be as reliable and as such further research is required to support the finding that optimism is associated with resilience utilising measures such as the CD-RISC.

Social Adjustment and Attachment to University and Resilience

Satisfaction with the university experience is an important indicator of adaptation, of which resilience has been found to be the main predictor variable (House, 2010), with well adapted students more likely to complete their studies (Bradley et al., 2008). A sense of connectedness has also been suggested as a contributing factor to students' success at university (Baker & Siryk, 1986; 2004; Lizzio, 2006) and may be an important factor in well-being, resilience and thus adaptation for students. Social and emotional adjustment have been found to be particularly important for students struggling academically; satisfaction with extracurricular activities, freedom from anxiety and absence of thoughts about dropping out of university being the best predictors of completing studies (Gerdes & Mallinckrodt, 1994). Although the first year experience is varied, social engagement and adjustment to university can be enhanced by facilitating social connections

within the first few weeks of university life, for example by providing social networking opportunities such as peer mentoring and online social networks (Gibney et al., 2010) and including opportunities for social connections in tutorial/practical classes.

However, consideration should be given to the suggestion that while some part-time students may value a sense of inclusion and belonging, others may have less time and/or inclination to create a social life (i.e. connectedness) at university, (Swain, Hammond & Jamieson, 2007). Krause et al. (2005) noted that part-time students did not report a sense of connection to university to the same extent as full-time students, and were more likely to keep to themselves and less likely to study with other students. Despite the lack of connectedness, part-time students were more likely to report satisfaction with learning and showed a clearer sense of purpose, however they were more likely to report family and work pressures interfered with study and were more likely to withdraw from one or more subjects compared to full-time students (Krause et al., 2005). Therefore, feeling connected to university may be an important factor and influence levels of resilience in some students, while for others it may be less important and thus have less effect on resilience and consequently adaptation.

The Student Adaptation to College Questionnaire (SACQ; Baker & Syrik, 1989) was designed to measure how well students adjust to university life. It is an effective tool for the prediction of student attrition from university and as a basis for discussing intervention strategies for students at risk of leaving (Krotseng, 1992; Munro & Pooley, 2009). Furthermore, the SACQ subscales allow areas of poorer adaption to be identified at an individual and group level. Students scoring higher on adaptation show higher levels of social adjustment (ability to deal with interpersonal-

societal demands) and attachment (satisfaction with the university) (Baker & Siryk, 1989). Consequently, if full-time students with lower levels of resilience are not well adapted and feel dissatisfied with the university experience there is a higher potential for attrition. Lower levels of resilience may still increase the risk of attrition for part-time students; however social adjustment and attachment may not be relevant in predicting satisfaction and thus attrition. Therefore, if social adjustment and connectedness to university are found to be predictors of full-time and potentially part-time student resilience it will provide an opportunity to direct students toward measures promoting greater integration and ultimately more successful adjustment and adaptation (Krotseng, 1992).

Psychological Distress

Many studies have examined the link between resilience and increased mental health and well-being (Boudrias et al., 2011; Friborg et al., 2005; Keyes, 2005; Tedeschi & Kilmer, 2005; Wilks & Spivey, 2010). In their study of resilience in adolescents Tusaie et al. (2007) found that while psychological distress co-occurred with resilience, levels of depression, number of suicide attempts and substance abuse all decreased as resilience increased. Resilience levels were lowest among individuals with a mental illness. Therefore it is important to include a measure of psychological distress as a predictor of resilience when examining first year university students.

Cook et al. (2006) measured psychological wellbeing of first year university students in the United Kingdom. Students completed measures of subjective well-being and symptoms (anxiety, depression and physical problems) prior to beginning university and again at three time points during the year. It was found that while

stress levels rose and fell throughout the year, students reported heightened anxiety but not depressive symptoms. Furthermore, psychological well-being was reduced throughout the university year regardless of the level reported prior to university entry. Greater stress was recorded at the beginning and the end of the year. This indicates the beginning of the university year is when students are at a higher risk of attrition and suggests that those who persist are more resilient.

University students have been found to be a high risk population for psychological distress. Stallman (2010) found that 19.2% of Australian university students reported clinically significant mental health problems, and 67.4% reported subsyndromal symptoms. The majority of students (83.9%) in the study reported elevated levels of distress compared to 29% in the general population (Australian Bureau of Statistics, 2008). Stallman also found full-time students had a higher prevalence of psychological distress compared to part-time students as measured by the K10. The K10 (Kessler et al., 2002) is a widely used measure of psychological stress used to screen for mental illness. Higher levels of distress would be expected to reduce resilience, as mental illness has been associated with reduced resilience (Tusaie et al., 2007), and thus reduce adaptation to university and hence retention. In light of evidence indicating differences in psychological distress as a function of enrolment status, it is important to examine the relationship between psychological distress and resilience for both full-time and part-time students.

Social Support

Perceived social support has been found an important factor in successful adaptation to university (Compas et al., 1986; Gall et al., 2000; Meehan & Negy, 2003; Munro & Pooley, 2009); with resilience being the strongest predictor of

adaptation (House, 2010). Friedlander et al. (2007) conducted a study to examine the joint effects of social support, stress and self-esteem on adjustment to university in first year students. Perceived support from friends was found to be more socially beneficial for university students than family support (Friedlander et al., 2007). However, over three quarters of the participants in the study were living away from home which may explain the importance of support from friends. Furthermore, the study consisted of participants ranging from 17 to 21 years of age and as such has not taken into account the heterogeneous nature of first year students. Other research has demonstrated the importance of family support, with a lack of perceived support from family found to be related to reported psychopathology in first-year psychology students, i.e. psychasthenia, schizophrenia and depression (Procidano & Heller, 1983). Therefore, if there are low levels of perceived support, students may feel less able to cope with social and emotional challenges, and thus struggle with reduced levels of resilience.

The importance of social support in predicting resilience has been reflected in the composition of the Resilience Scale for Adults (RSA; Friborg et al., 2003). Moreover, social support has been shown to be a vital factor in resilience and well being in numerous studies (Dawson & Pooley, 2013; Friborg et al., 2003; Kjeldstakli et al., 2006; Tusaie et al., 2007; Procidano & Heller, 1983). Tusaie et al. (2007) found that older adolescents in particular reported higher levels of resilience when higher levels of perceived support from family and friends (and higher levels of optimism) were reported, even if multiple bad life events had been experienced. The study demonstrated that a supportive environment was able to act as a protective factor for stressful or adverse events and promote resilience. Thus it is arguable that

similar findings would be expected for first-year university students, particularly traditional students entering straight after college studies.

Wilks and Spivy (2010) surveyed university students to examine social support and resilience and found social support from friends accounted for the most variation (23 percent) in resilience, followed by family support (measures included family support, friend support and overall support). Based on these results, Wilks and Spivy suggest peer support be promoted as a way of enhancing student resilience, and to reduce stress. However the study sample consisted predominantly of young female Caucasian/European students and as such may not be as generalisable as higher levels of psychological distress have been reported in female versus male populations, and by those less than 35 years of age (Stallman, 2010). Conflicting results regarding the relative importance of familial versus peer support, and limitations of previous study designs, highlight the need for further investigation into the role of various types of support in predicting resilience.

Relationship Status and Resilience

Relationship status is another factor that may impact on resilience and adaptation to university. Combining education, family life and relationships can be difficult, particularly for women (Edwards, 1993). Previous research found married students, for example, had poorer adaptation scores compared to non-married university students, with married females reporting lower adaptation scores than married males (Meehan & Negy, 2003). However the SACQ full scale score (used as the index of adaptation in the study) was lower for married students due to lower scores on the social adjustment and institutional attachment subscales. There were no differences between married and non-married students on the academic and personal-

emotional adjustment subscales. This difference may be because married students have less time and inclination for extracurricular student activities due to family commitments, whereas they value their academic performance and emotional adjustment to a greater degree due to its perceived relevance to reaching their academic and personal goals. Furthermore, there is a greater likelihood of married students being part-time (Hayden & Long, 2006). The authors reported a positive correlation between social support from family and friends with adjustment to university, although feeling supported by one's spouse was not associated with improved adaptation to university (Meehan & Negy, 2003). As resilience has been found to be the main predictor for student adaptation (House, 2010) and there is a reported link between relationship status and student adaptation, it is important to look at the impact on relationship status and resilience in university students.

Work Commitments and Resilience

Financial stress is a major concern for many students, both in supporting themselves throughout their degree and the resultant debt accumulation (Kift, 2008). Work commitments are a factor shown to influence adaptation, with academic performance and student engagement at university being negatively affected by part-time work, despite often being necessary (Krause et al., 2005; McInnis, 2002). There was an increase from 1994 to 1999 in the number of students working part-time (26 per cent to 37 per cent) as well as an increase in the average number of hours worked with the proportion of full-time students working eleven or more hours per week increasing from 40 per cent to just over 50 per cent (McInnis et al., 2000). Part-time students are more likely to report that work and family commitments interfere with their academic performance and poses logistical or practical issues compared to full-

time students (Krause et al., 2005). Furthermore, students working longer hours have shown a trend towards less attachment and commitment to university life and to lower academic results (McInnis et al., 2000) which may account for the negative relationship with adaptation.

The Current Study

The growing diversity of university students adds further complexity to the notion of student resilience and therefore adaptation to university. There is a need to look within the context of the larger social structures to understand and improve the first-year experience (McInnis, 2001). Furthermore, to date the majority of literature on student resilience has focused separately on the impact of demographic, intrapersonal, and interpersonal factors. The present study aims to identify the concurrent demographic (enrolment status, age, sex, relationship status, parental status), intrapersonal (psychological distress, personal growth initiative, optimism, and attachment and social adjustment to university) and interpersonal factors (perceived social support and work hours) that predict resilience in first year university students, thereby developing a more comprehensive understanding of the interaction between these components. While research has identified the aforementioned factors as being important in student resilience, the relative contributions of each of these have not been fully explored.

Part-time enrolments are on the increase (Phillips et al., 2003) and as such further research into the reasons behind the differing adaptation and resilience levels of part-time students compared to full-time students is imperative. Despite the heterogeneous nature of the student cohort, research into strategies aimed to enhance student engagement, resilience, adaptation, and therefore retention has been

predominantly oriented towards traditional full-time student populations (Andrews, 2006). This study will investigate if there are differences in the relative contribution of factors predicting resilience, as well as overall student resilience, between full-time and part-time students and also consider the heterogeneity of experience for part-time versus full-time students concurrently. The emphasis within society on lifelong learning as well as increasing the accessibility of further study in society means it is important understand the factors that contribute to resilience in university students.

Aims and Hypotheses. Consistent with previous research, it was predicted that higher levels of a) social support, b) optimism, c) personal growth_initiative d) social adjustment to university, e) attachment to university, together with lower levels of d) psychological distress would predict higher levels of resilience.

Resilience fluctuates over time in response to many external and internal factors (Cook et al., 2006; Connor & Davidson, 2003) and as such it is important to examine any change in resilience levels throughout the university year. It is possible that the changing experience of the university environment impacts this; however the majority of studies to date have failed to incorporate longitudinal data collection. In order to identify not only what factors enhance/reduce resilience, but when these may be most influential, this study will incorporate a longitudinal design.

Through gaining an understanding of the individual predictors of resilience and thus adaptation to university, further research into strategies that may be implemented to enhance resilience are possible. The demands placed upon students entering university mean that resilience is a critical attribute. Resilience is a factor that can be modified and improved (Connor & Davidson, 2003) and as such if student resilience can be enhanced so too can adaptation to university and thus

retention of university students. This will enable universities to develop interventions in relevant areas (e.g. counselling support or appropriate learning strategies) to enhance students' wellbeing, improve resilience, and thus adaptation and completion of their degree.

Method

Participants

The sample comprised 420 first-year students enrolled in a variety of undergraduate courses at the University of Tasmania. All first-year students were eligible and participants' were recruited through advertisements placed on the University of Tasmania Psychology research website as well as advertising during lectures and practical classes at each time point. The survey was open from March through to October 2013. First year psychology students received 40 minutes course credit for each time the survey was completed. Participants' ages ranged from 17 to 73 years of age, with 64% between 17 and 21 years of age. This dominance of traditional entry students is reflective of the general university population, with only 17.2 per cent of Australian undergraduate students aged 30 years or older (Australian Council for Educational Research (ACER), 2013). Table 1 contains a breakdown of all demographic factors identified in the study, Table 2 contains a breakdown of the participants enrolled part-time and Table 3 contains a breakdown of the participants enrolled full-time.

Table 1

Demographic Characteristics of Participants

Demographic Variable	Category	N	%	Total N
Student Type	Mature-Aged	152	36	
	Traditional	268	64	420
Sex	Female	339	80	
	Male	81	20	420
Enrolment Status	Full-time	339	80	
	Part-time	81	20	420
Age (years)	17-21 yrs	268	64	
	22-26 yrs	44	10	
	27-36 yrs	43	10	
	37-46 yrs	33	8	
	47 – 56 yrs	21	5	
	57 + yrs	11	3	420
Relationship Status	Single	195	46	
	In R'ship	149	36	
	Married	48	11	
	De facto	28	7	420
Dependents	Yes	70	17	
	No	350	83	420
Work Hours	No work	146	35	
	Less than 10 hrs	100	24	
	10-20 hours	117	28	
	20-30 hours	32	7	
	30 + hours	25	6	420

Table 2

Demographic Characteristics of Part-time Participants

Demographic Variable	Category	N	%	Total N
Student Type	Mature-Aged	70	86	
	Traditional	11	14	81
Sex	Female	70	86	
	Male	11	14	81
Age (years)	17-21 yrs	11	14	
	22-26 yrs	10	12	
	27-36 yrs	21	26	
	37-46 yrs	18	22	
	47 – 56 yrs	12	15	
	57 + yrs	9	11	81
Relationship Status	Single	24	30	
	In R'ship	18	22	
	Married	32	39	
	De facto	7	9	81
Dependents	Yes	39	48	
	No	42	52	81
Work Hours	No work	23	28	
	Less than 10 hrs	11	14	
	10-20 hours	17	21	
	20-30 hours	10	12	
	30 + hours	20	25	81

Table 3

Demographic Characteristics of Full-time Participants

Demographic Variable	Category	N	%	Total N
Student Type	Mature-Aged	82	24	
	Traditional	257	76	339
Sex	Female	269	79	
	Male	70	21	339
Age (years)	17-21 yrs	257	76	
	22-26 yrs	34	10	
	27-36 yrs	22	6.5	
	37-46 yrs	15	4.4	
	47 – 56 yrs	9	2.7	
	57 + yrs	2	0.6	339
Relationship Status	Single	171	50	
	In R'ship	131	39	
	Married	16	5	
	De facto	21	6	339
Dependents	Yes	31	9	
	No	308	91	339
Work Hours	No work	123	36	
	Less than 10 hrs	89	26	
	10-20 hours	100	29	
	20-30 hours	22	7	
	30 + hours	5	2	339

Scale Measures

Student Adaptation to College Questionnaire (SACQ). The SACQ (Baker & Siryk, 1989) measures adaptation to university. Within the present study two of the fours subscales were used, comprising 28 statements describing university experiences of social adjustment and attachment. Respondents indicated their relative agreement or disagreement with statements on a nine-point Likert scale with end-

point designations ranging from *Strongly Agree* (9) to *Strongly Disagree* (1). Items include *'I am very involved with social activities in university' (social adjustment),* and '*I expect to stay at this university for a bachelor's degree' (attachment).* The SACQ has Cronbach's alpha coefficients of .91 for the Attachment and Social Adjustment subscales (Baker & Siryk, 1989). Within the current study, coefficient alphas were .88 for Social Adjustment and .87 for Attachment.

Connor-Davidson resilience scale (CD-RISC). The CD-RISC (Connor & Davidson, 2003) is a measure of global resilience comprising 25 self-referent statements. Respondents indicate the extent to which they agree with each statement with end-point designations ranging from V*ery True* (4) to *Not true at all* (0). Items include *'Coping with stress strengthens'* and '*Think of self as strong person'*. Total score ranges from 0 – 100, with higher scores reflecting greater resilience. The authors report a coefficient alpha of .89 for internal consistency and a test-retest correlation coefficient of .87. The current study had a coefficient alpha of .92.

Resilience Scale for Adults (RSA). The RSA (Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003) is a measure of global resilience covering all three of the main resilience categories; dispositional attributes, family cohesion/warmth and external support systems. Within the current study three of the five subscales were used; social support, personal competence and social competence subscales. Respondents indicated the extent to which they agree with each statement with end-point designations ranging from *Strongly Agree* (1) to *Strongly Disagree* (5). Items include *'I have some close friends/family members who really care about me' (social support)* and '*I believe in my own abilities' (personal competence)* and *'I am good at getting in touch with new people' (social competence)*. The authors report internal consistencies of all subscales were adequate, with coefficient alpha

values ranging from .67 to .90 for internal consistency and test-retest correlation coefficient ranging from .69 to .84. Within the current study, coefficient alphas were .90 for social support, .90 for personal competence and .87 for social competence.

Revised Life Orientation Test (LOT-R). The LOT-R (Scheier, Carver & Bridges, 1994) is a measure of optimism and pessimism which consists of 10 items. Respondents indicate the extent to which they agree with each statement on a 5-point Likert scale that ranged from *Strongly Agree* (4) to *Strongly Disagree* (0). Items include *'It's easy for me to relax''* and *'I'm always optimistic about my future'*. The scale includes 4 filler items which are not scored. Total score ranges from 0 – 24, with higher scores reflecting greater optimism. The authors report a coefficient alpha of .78 for internal consistency and a test-retest correlation coefficient of .68. The current study had a coefficient alpha of .78.

Personal Growth Initiative Scale – II (PGIS-II). The PGIS - II (Robitschek, 2011) is a measure of personal growth initiative comprising 16 items. Respondents indicate how much they agree or disagree with each statement on a 6-point Likert scale that ranged from *Agree Strongly* (5) to *Disagree Strongly* (0). Items include *'I figure out what I need to change about myself'*, *'I know how to set realistic goals to make changes in myself'* and *'I use resources when I try to grow'*. Total score ranges from 0 – 80, with higher scores reflecting higher levels of personal growth initiative. The authors report a coefficient alpha of .92 for internal consistency and a test-retest correlation coefficient of .70. The current study had a coefficient alpha of .93.

Kessler Psychological Distress Scale (K-10). The K-10 (Kessler et al., 2003) is a measure of global distress comprising 10 self-referent statements. Respondents indicate which response best represents how they have been feeling over the past 30

days ranging from *None of the time* (1) to *All of the time* (5). Items include *'During the last 30 days, about how often did you feel nervous?'* and *'During the last 30 days, about how often did you feel so sad that nothing could cheer you up?'* Total score ranges from 10 – 50, with higher scores reflecting higher levels of psychological distress. The authors report a coefficient alpha of .93 for internal consistency. The current study had a coefficient alpha of .92.

Procedure

All participants read an information sheet indicating the voluntary nature of participation (Appendix A) before proceeding, with completion of the survey implying consent. Participants completed the questionnaire's online via limesurvey; questionnaires were the *Resilience Scale for Adults (RSA; social support, personal competence, and social competence subscales),* the *Student Adaptation to College Questionnaire (SACQ; social adjustment and attachment subscales*), *Connor-Davidson Resilience Scale (CD-RISC*), *Revised Life Orientation Test (LOTR), Personal Growth Initiative Scale (PGIS-II), Kessler Psychological Distress Scale (K-10)* and a demographic questionnaire (Appendix B). Upon completion of the survey participants entered a code which they then entered on re-completion of the survey at each time point so their data could be linked.

Results

Data Screening

Originally, the study was designed to examine whether resilience fluctuated throughout the year at an individual level, however the number of participants who completed data at the three designated time points was too small to provide reliable

results. For this reason, data was screened for multiple responses from individual participants before multiple regressions were performed and only responses from the first time point were included when multiple responses were identified. Forty two response sets were deleted from the total data as these participants had completed the questionnaire at more than one time point. Thus the remaining data set did not include multiple responses from participants, and consisted of a total of 420 participants within a cross-lagged, cross-sectional design. Pearson correlations for the scale totals were examined for issues of multicollinearity. All correlations between variables were below .8, as displayed in Table 2 along with means and standard deviations for the predictor variables. Although correlation figures were relatively low, with only three correlations above .65, Tolerance and Variance Inflation Factor (VIF) statistics were also examined for possible multicollinearity. According to Field (2005) VIF of 10 or over and Tolerance levels of less than .1, and possibly even less than .2, are cause for concern. In the current study no VIF figures were found to be above 1.64 and no Tolerance levels were found to be below .61. The Durbin-Watson statistic was checked for independence of errors and was satisfactory at 1.84. Field (2005) recommends a conservative approach which would consider values less than one or greater than three as a cause for concern. Visual inspection of data revealed the distribution of residuals on scatter plots showed normal distribution patterns and there was no evidence of heteroscedasticity. Thus it was concluded that there were no issues of concern with collinearity for the subsequent analyses of the data.

Table 4

Zero-Order Correlations, Means, and Standard Deviations for the Study Variables

Variables	1	2	3	4	5	6	7	8	9	M	SD	Number
1. CDRISC	-									66.11	14.74	420
2. K10	-.50	-								23.39	8.19	420
3. PGIS Total	.69	-.29	-							54.17	13.15	420
4. Social Adjustment	.55	-.43	.44	-						110.17	24.46	420
5. Attachment	.48	-.45	.40	.78	-					92.56	19.81	420
6. LOTR	.57	-.57	.38	.43	.37	-				13.66	4.47	420
7. Social Competence	-.24	.08	-.20	-.30	-.22	-.21	-			18.67	6.13	420
8. Family Coherence	-.13	.03	-.15	-.08	-.08	-.18	.51	-		17.85	7.96	420
9. Social Support	-.12	.08	-.11	-.11	-.15	-.16	.71	.03	-	17.32	9.07	420

Variables Predicting Resilience in First year Students

As shown in Table 4, participants reported moderately low levels of resilience as measured by the CDRISC. The mean score was significantly lower than mean score of 80.40 (SD 12.80) reported by Connor and Davidson (2003) for the general population; t (419) = 19.86, $p < .001$. It is more reflective of the mean score found for a psychiatric population of 68.0 (SD 15.3) suggesting that the first year university population may not be reflective of the general population.

A forward stepwise regression analysis was used to evaluate variables that best predicted resilience in first year university students as measured by the CDRISC. This approach to analysis was considered applicable due to the exploratory nature of the study where exact hypotheses concerning the relative importance of specific predictor variables in accounting for resilience had not been proposed. A backwards stepwise regression was performed to check for suppressor effects and to confirm the findings of the forward stepwise regression; this analyses produced the same results. Intrapersonal predictors entered into the regression analysis were psychological distress, personal growth initiative, social adjustment to university, attachment to university and optimism. The interpersonal predictor was social support. The regression analysis generated four predictors that were able to explain 60% of the variance in resilience scores of university students as measured by the CDRISC. Each additional predictor added significantly to the model, adjusted $R^2 = .60$, F (4, 419) = 157.29, $p < .001$.

The strongest positive predictor of resilience in first year university students was PGI. Other positive predictors were optimism and social adjustment to university. As shown in Table 4, participants within this study reported similar levels of optimism to the mean scores (M = 14.33, SD = 4.28) reported for college students

in the study by Scheier et al. (1994). Psychological distress, as measured by the K-10, was a negative predictor of resilience. The four identified predictor variables are shown in Table 5 with values for coefficients, standard errors, standardised coefficients and confidence intervals.

Table 5

Regression Analyses of Predictors for Positive and Negative Resilience in First Year University Students

	CD-RISC				
Predictors	B	SE	β	95% CI	Number
(Constant)	47.76	3.88		40.12 /55.40	420
PGIS	.49	.04	.44**	0.42 / 0.57	
LOTR	.75	.13	.23**	0.50 /1.00	
Social Adjustment	.12	.02	.19**	0.07 /0.16	
K10	-.28	.07	-.16**	-0.42 / -0.14	

Note: ** $p = < .001$, Model 4, $\Delta R^2 = .60$, CI = Confidence Intervals

Differences between Full-Time and Part-Time Students

After ascertaining the variables that best predicted student resilience in the full sample, enrolment status was examined to determine if it had any effect on resilience scores as measured by the CD-RISC. Means and standard deviations are shown in Table 6. A univariate ANOVA revealed significant differences in levels of resilience, with part-time students reporting higher levels of resilience compared to full-time students, $F(1, 418) = 4.15$, $p = .04$ ($\eta p^2 = .01$). Additional separate

univariate ANOVAs on each of the four identified resilience predictors revealed that part-time students reported significantly higher levels of PGI compared to full-time students as measured by the PGIS, $F(1, 418) = 5.57, p = .02$ ($\eta p^2 = .01$). Part-time students also reported significantly higher levels of optimism compared to full-time students as measured by the LOTR, $F(1, 418) = 5.37, p = .02$ ($\eta p^2 = .01$). Additionally, full-time students reported significantly higher levels of psychological distress compared to part-time students as measured by the K10, $F(1, 418) = 6.39, p = .01$ ($\eta p^2 = .02$). There were no significant differences between full-time and part-time students in social adjustment, $F(1, 418) = 2.54, p = .11$ ($\eta p^2 = .01$). All significant results showed small effect sizes.

Table 6

Means and Standard Deviations of Full-Time versus Part-Time Students for Resilience and Predictors of Resilience

Variables	Full-Time		Part-Time	
	M	SD	M	SD
Resilience	65.40	15.01	69.10	13.23
PGI	53.43	13.00	57.25	13.40
Optimism	13.42	4.74	14.69	4.35
Psychological distress	23.88	8.34	21.33	7.25
Social adjustment	111.09	24.80	106.28	22.71

After ascertaining the significant differences between full-time versus part-time students in variables that predicted resilience in the first year sample, two forward stepwise regression analysis were performed to evaluate the variables that best predicted resilience in full-time and then in part-time first year university students as measured by the CDRISC. Intrapersonal predictors entered into the

regression analysis were psychological distress, personal growth initiative, social adjustment to university, attachment to university and optimism. The interpersonal predictor was social support. The regression analysis for full-time students generated four predictors that were able to explain 61% of the variance in the prediction of resilience as measured by the CDRISC score. Each additional predictor added significantly to the model, adjusted $R^2 = .61$, $F(4, 338) = 131.68$, $p = .002$. The predictors for full-time students were the same as those identified for the full sample and are shown in Table 7 with values for coefficients, standard errors, standardised coefficients and confidence intervals.

Table 7

Regression Analyses of Predictors for Positive and Negative Resilience in First Year University Students enrolled as Full-Time Students

	CD-RISC				
Predictors	B	SE	B	95% CI	Number
(Constant)	43.81	4.28		35.39 /52.23	339
PGIS	.50	.05	.43**	0.41 / 0.59	
LOTR	.71	.15	.21**	0.42 /.99	
Social Adjustment	.15	.03	.24**	0.09 /0.20	
K10	-.23	.08	-.13*	-0.39 / -0.09	

Note: ** $p = < .001$, * $p = .002$, Model 4, $\Delta R^2 = .61$, CI = Confidence Intervals

The regression analysis for part-time students generated three predictors that were able to explain 56% of the variance in the prediction of resilience as measured by the CDRISC. Each additional predictor added significantly to the model, adjusted $R^2 = .56$, $F(3, 80) = 35.41$, $p < .001$. The predictors for part-time students differed to those identified for full-time students in that social adjustment to university was not a predictor for part-time university students. The three identified predictor variables are shown in Table 8 with values for coefficients, standard errors, standardised coefficients and confidence intervals.

Table 8

Regression Analyses of Predictors for Positive and Negative Resilience in First Year University Students enrolled as Part-Time Students

	CD-RISC				
Predictors	B	SE	B	95% CI	Number
(Constant)	67.20	7.66		51.94 /82.45	81
LOTR	.91	.30	.28*	0.41 / 0.59	
PGIS	.41	.08	.42**	0.42 /.99	
K10	-.47	.17	-.26*	-0.39 / -0.09	

Note: ** $p = < .001$, * $p = <.005$, Model 4, $\Delta R^2 = .56$, CI = Confidence Intervals

Demographic Variables

A one way ANOVA revealed no sex differences in resilience as measured by the CDRISC. However, differences were found between resilience scores as a function of other demographic variables. A univariate ANOVA revealed a significant difference demonstrating that resilience varied according to parental status; students with dependent children reported significantly higher levels of resilience, with a small effect size, (M = 72.36, SD = 11.80) compared to students who did not have children (M = 64.86, SD = 14.97), F (1, 418) = 15.60, $p < .001$ ($\eta p^2 = .04$). A univariate ANOVA revealed that resilience varied according to hours worked, F (4, 415) = 4.29, $p = .002$, ($\eta p^2 = .04$); post hoc tests were conducted using REGWQ. Results showed students who worked over 30 hours per week had significantly higher levels of resilience (M = 76.72, SD = 13.60) compared to students who did not work (M = 64.46, SD = 14.66), those who worked less than 10 hours per week (M = 65.22, SD = 14.47) and those who worked between 10 to 20 hours per week (M = 65.81, SD = 15.16). There were no significant differences between any of the other groups.

Univariate ANOVA revealed that resilience varied according to age with a medium effect size, F (5, 414) = 5.24, $p < .001$ ($\eta p^2 = .06$), therefore REGWQ post hoc tests were conducted. Post hoc tests were difficult to interpret; the only significant differences were between students in the 17 – 21 year age group (M = 63.71, SD = 14.16) who had significantly lower levels of resilience compared to students in the 27 – 36 year age group (M = 72.98, SD = 14.02) and those in the 47 – 56 year age group (M = 74.57, SD = 13.02). While those in the 17-21 year old group reported the lowest mean resilience score, levels of resilience did not increase linearly with each age group, with similar mean scores reported by those in the 22-26,

37-46 and 57+ age groups. This supports the view that students cannot be treated as a homogenous group.

Univariate ANOVA revealed that resilience varied according to relationship status, with a small effect size $F(3, 416) = 4.40$, $p = .005$ ($\eta p^2 = .03$); post hoc tests were conducted using REGWQ. Due to the sample encompassing a broad age range, participants were given options of identifying as single, in a relationship, de facto or married. Post hoc tests were again difficult to interpret, married students reported the highest levels of resilience and single students reported the lowest levels, there were no significant differences between students who were single, in a relationship or in a de facto relationship. The only significant difference was that married students ($M = 72.17$, $SD = 11.36$) had significantly higher levels of resilience compared to single students ($M = 64.03$, $SD = 15.63$).

Differences in Resilience across time points

As previously mentioned, the data was originally designed to be examined to determine if resilience fluctuated throughout the year at an individual level, however the number of participants who completed data at three time points was too small to provide reliable results. Therefore, data was split into four time points across the year; students who responded during March/April (early first semester), May/June (end first semester), July/August (early second semester) and September/October (end second semester) to provide a cross-sectional analysis. Univariate ANOVA revealed there was a significant difference in resilience across the four different time points with a small effect size, $F(3, 416) = 2.77$, $p = .041$ ($\eta p^2 = .02$). However, post hoc testing showed no significant differences in mean resilience scores between the four time points making the initial ANOVA difficult to interpret. However, as shown in

Table 9, students reported a gradual increase in resilience levels, as measured by the CDRISC, as the university year progressed.

Table 9

Means and Standard Deviations for Resilience Scores across Four Time Points

Time Points	Mean	SD	Number
March/April	63.87	14.04	134
May/June	65.66	13.45	142
July/August	68.04	15.36	109
September/October	70.51	18.86	35

Discussion

This study was exploratory in nature and aimed to evaluate a number of factors previously shown to impact resilience in university students. Previous research had identified a number of important areas impacting upon student resilience; however the relative contributions of each of these have not been fully explored, nor had the heterogeneity in the first-year student experience been appropriately examined. Accordingly the principal aim of the current study was to concurrently identify which demographic (enrolment status, age, sex, relationship status, parental status), intrapersonal (psychological distress, PGI, optimism, and attachment and social adjustment to university) and interpersonal (perceived social support and work hours) factors predict resilience in first year university students

thereby developing a more comprehensive understanding of the interaction between these components. It was predicted that higher levels of a) social support, b) optimism, c) personal growth_initiative d) social adjustment to university, e) attachment to university, together with lower levels of d) psychological distress would predict higher levels of resilience. A further aim was to investigate whether there were differences in levels of resilience between full-time and part-time students.

Evaluation of hypotheses

The hypothesis that higher levels of optimism, PGI and social adjustment to university would predict higher levels of resilience in university students was supported. PGI was the strongest predictor of all those identified, with optimism and social adjustment to university also being positive predictors. The hypothesis that lower levels of psychological distress would predict higher resilience scores was also supported. The hypothesis that social support and attachment to university would predict higher levels of resilience was not supported.

The regression analyses performed was able to explain 60% of the variance in the prediction of resilience in first year university students when considered as a homogeneous cohort. The three predictors positively related to resilience were, optimism, PGI and social adjustment to university. The negatively related predictor was psychological distress.

The expectation that there would be differences between full-time and part-time students was supported. Part-time students reported significantly higher levels of resilience, optimism and PGI and significantly lower levels of psychological distress. Social adjustment to university was the only predictor identified where there were no significant differences between full-time and part-time students.

Predictors of Student Resilience

The finding that PGI was the strongest positive predictor to resilience in university students supports the findings of Robitschek (2011) who noted the two constructs were related, with higher levels of PGI being associated with higher levels of resilience. Given that university requires students to become active participants in the educational process, it is not surprising that a construct that measures an individual's propensity to feel ready for change, to have realistic plans and goals, to use resources and to intentionally look for and take opportunities to grow, was found to be the strongest predictor of resilience in university students.

As expected, and in support of Boudrias et al. (2011), Davis and Asliturk, (2011) and Tusaie et al. (2007), optimism was a positive predictor for resilience. This implies that university students who are higher in optimism may be more likely to remain engaged in the university environment and supports the suggestion by Scheier et al. (1994) that optimistic students would be more likely to believe they can achieve their goals and persevere rather than giving up.

As expected, and consistent with findings by Baker and Syrik (1989) and Gerdes and Mallinckrodt (1994), social adjustment to university was a predictor of resilience. Students with higher levels of social adjustment reported feeling satisfied with the interpersonal and societal demands inherent in the university experience (e.g. fitting in with and being involved in social activities, mixing well and having friends at university). This supports the findings of Lizzio (2006) and Gerdes and Mallinckrodt that a sense of connectedness to university is an important factor in student's resilience levels and thus adaptation. The fact that social adjustment was a predictor in resilience lends support to Tinto's (2009) assertion that social support provided by universities is an important factor in helping promote student retention.

Contrary to expectations, and previous research (Compas et al., 1986; Gall et al., 2000; Meehan & Negy, 2003; Munro & Pooley, 2009) social support was not a predictor of resilience in first year university students. However, this may be due to the measure used to assess social support. The subscale of the RSA was used and many of the questions refer to having close friends or family support and feeling that close friends or family will help, encourage and listen. It may be that friends and family are only helpful if they are deemed relevant sources of information; it may be that they cannot empathise with the university experience if they have never been. While social support from friends and family may be important in overall resilience as suggested by Friborg et al. (2003), it may be that in the university context the social support that is more relevant to resilience is that which was measured by the social adjustment subscale from the SACQ as previously discussed. Although, while the items from the social adjustment subscale, which was a predictor of resilience, were specifically related to social support within the university context (i.e. having adequate social connections and support within the university) the scale was designed to measure facets of interpersonal-societal demands rather than as a measure of social support. Given the numerous studies previously mentioned that have demonstrated the importance of social support, it is surprising that social support from friends and family was not a significant predictor of resilience.

Contrary to previous research by Baker and Siryk (1989) suggesting attachment to university was associated with higher levels of adaptation to university, of which resilience was a significant predictor, attachment to university was not found to be a predictor of resilience in first year university students. It may be that some students do not value a sense of attachment to university and as such have less time or proclivity to create this and attachment has little effect on their resilience

levels. It may also be that the attachment scale is not as relevant for this university sample of first year students; some scale items relate to the choice of university which may be less applicable in Tasmania where the University of Tasmania is the only institution.

The results of this study give evidence for three main factors influencing resilience in university students – interpersonal, intrapersonal and demographic. While intrapersonal factors were dominant, intrapersonal and demographic factors also contributed. Thus a combination of these factors need to be taken into account when considering student levels of resilience, itself a predictor of how well students will adapt to university. This study suggests intrapersonal factors have more influence on student resilience than demographic variables, and supports Munro and Pooley's (2009) findings that students need to be considered on an individual rather than a group basis. This is an important and heartening finding as intrapersonal factors are malleable whereas demographic factors are not. Thus person-level interventions appear a feasible avenue for increasing student resilience consistent with the argument that resilience is a factor that can be modified and improved (Connor & Davidson, 2003).

Full-Time versus Part-Time Students

There were significant differences in levels of resilience with part-time students reporting significantly higher levels of resilience compared to full-time students. These results contrast with previous research on adaptation wherein it was full-time students who reported higher levels of resilience (House, 2010). Resilience has been positively associated with age (Friborg et al., 2003) and results from this study lend support to this suggestion, as 86% of part-time students were classed as

matured-aged (22 years of age or over). Furthermore, it is likely that part-time students have many roles and as such may be expected to be protected via the self-complexity hypothesis, as proposed by Linville (1987). Focusing on university study may allow students to direct their attention away from, and consequently alleviate, some of the stressors arising from other daily or life hassles. Additionally, or alternatively, these other roles may act as distractions from university if they are not performing well or are stressed by the workload.

Part-time students also reported higher levels of PGI compared to full-time students. This may be due to the part-time students having had more life experiences that enabled personal growth compared to traditional full-time students. Younger full-time students may be about to embark on their journey of personal growth and are yet to feel a strong sense of direction, while part-time students may be already engaged in the process and this has led them to further study at university. University may be one of the major opportunities for students to develop PGI as it often forces students to make major life decisions and plans involving future career paths, living arrangements and relationships (Stevic & Ward, 2008). It may also be that university provides an avenue for mature-aged students to demonstrate their accumulated PGI and apply this to the pursuit of further personally relevant goals.

Part-time students reported higher levels of optimism compared to full-time students. This may be due in part to part-time students having increased self-complexity (i.e. career and family commitments) as optimism has been associated with having larger social support networks (Brissette, Sheier & Carver, 2002). Thus the potential life demands that may make full-time study unattainable may be providing social support networks in areas that full-time students do not have. The majority of part-time students in the current study were also mature-aged students

and traditional first year students generally do not have as many established social support networks when they arrive at university (Brissette et al., 2002). Thus part-time students may have higher levels of optimism as optimism has been associated with greater levels of perceived social support (Brissette et al., 2002).

Part-time students reported lower levels of psychological distress compared to full-time students. This supports research by Stallman (2010) who found full-time status was a predictor of psychological distress among university students. The lower levels reported by part-time compared to full-time students may be due to the majority of part-time students being mature-aged, as Stallman (2010) found life experience seemed to be a protective factor for students and again links to the self-complexity hypothesis (Linville, 1987).

There were no differences in levels of social adjustment reported between full-time and part-time students, however while social adjustment was a predictor of resilience for the full sample and for full-time students, it was not a predictor for part-time students. This lends support to the suggestion by House (2010) that social adjustment within the university context may not be as applicable or indeed as important for part-time students. Some questions on the SACQ scale may result in a bias toward full-time students scoring higher in adaptation, however this may be because the assumption behind the scale for what is important for successful adaptation (e.g. social and extracurricular activities) at university does not apply equally for part-time as it does for full-time traditional students. Part-time students are not typically as engaged in the university culture with less time spent on campus due to their reduced timetable and competing non-academic demands.

Demographic variables

While there were no sex differences in levels of resilience, levels of resilience varied according to the other demographic variables measured. Students who had dependent children reported significantly higher levels of resilience compared to students without dependent children. This result was unexpected as previous research found part-time students reported family commitments interfered with study (Krause et al., 2005). While family commitments may interfere with study, the higher levels of optimism and PGI and lower levels of psychological distress reported by part-time students mean that resilience levels were not affected despite family demands experienced by students who had dependent children. Work commitments were associated with higher levels of resilience in those who worked over 30 hours per week which somewhat contradicts previous research (Krause et al., 2005; McInnis, 2002; & McMillin, 2005) that found working long hours had a negative impact on university life. Stallman (2010) found financial stress to be a predictor of psychological distress, however students working 30hours or more may not experience financial stress to the same degree as full-time students and have chosen to enrol part-time to enable an increased balance in their lives between university and other commitments (social complexity). Longer work hours may negatively affect student adaptation, but may be a protective factor when it comes to resilience. In this way although resilience may predict adaptation, it is a reminder that they are distinct constructs.

Interpretation of the effects of age on resilience was somewhat difficult as levels of resilience did not increase linearly with each age group; however those in the traditional student age range (i.e. 17 – 21 years) had the lowest levels of resilience. This partially supports Friborg et al. (2003) findings that resilience is

positively associated with age, and perhaps helps to clarify the focus on traditional school leavers as they may be more vulnerable than mature-aged students with similar demographic characteristics, as well as those with distinctly different characteristics. Furthermore, this supports the notion that students cannot be viewed as a homogenous group.

In partial support of previous research by Edwards (1993) and Meehan and Negy (2003) suggesting relationship status would have a negative effect on adaptation to university, of which resilience is a predictor, there were significant differences between levels of resilience and relationship status. However, the only significant difference was that married students had significantly higher levels of resilience compared to single students. This contrasts Meehan and Negy (2003) findings that married students had lower levels of adaptation to university compared to non-married students. However, the areas that married students had lower levels of adaptation were related to extracurricular and student-related activities at university that may not be areas that are personally relevant to them and as such would not be expected to be associated with resilience. There were no significant differences between the other groups, which again supports the suggestion that it is individual factors that are associated with resilience.

Resilience across time points

There were no significant differences in resilience across the four data collection time points; however there was a gradual increase in resilience levels as the university year progressed which is consistent with the model of culture shock reported by Brown and Holloway (2008) who found stress was highest at the beginning of the university year. The gradual increase in resilience is also consistent

with the process of adaptation, wherein individuals adjust to major life changes and their surroundings (Head, 2010) as reflected in less negative affect and distress. This supports the findings of Gall et al. (2000) demonstrating the largest impact on student well being was on entry to university, and reinforces the need for proactive prevention and intervention strategies upon beginning university studies. However, it is possible that a lack of difference may be a result of the study being cross sectional rather than longitudinal as originally intended. There were insufficient numbers of participants to incorporate longitudinally which may reflect the issue of resilience across time points; possible fluctuations in resilience may be reflective of fluctuations in student engagement activities, including research participation.

Implications

The current finding that resilience in university students can be predominantly predicted from intrapersonal factors, with interpersonal and demographic factors playing a minor role, has clear theoretical and practical implications. At the theoretical level, evidence indicates contemporary students are a heterogeneous group and attempts to apply global explanations of the student experience are an oversimplification. Furthermore, evidence indicates optimism, personal growth initiative and social adjustment to university promote resilience while psychological distress is detrimental to resilience and thus to positive adaptation. At an applied level, it highlights the need for positive interventions to foster resilience and to provide programmes to promote optimism, personal growth initiative, social adjustment and mental health within the university context. Faculty staff can be made aware of the importance of discussing and/or promoting personal growth initiative by developing interventions aimed at increasing skills in identifying

and planning for change and growth, using the resources available (e.g. mentoring programs, peer assisted study sessions (PASS) and social networks/activities), and looking for opportunities to grow (e.g. communication skills, interpersonal skills and career goals). However, the different experiences of part-time versus full-time students should be taken into account and any interventions prefaced with an acknowledgement of this. Existing programs such as mentoring and PASS enable students to seek help with their study and also potentially form social networks with other students. However, universities are increasingly under pressure to increase online presence and decrease face-to-face teaching hours and would arguably result in fewer opportunities for students to form social connections. While the existing programs are a valuable opportunity for students they do not appear to address the promotion of optimistic thinking styles, skills for personal growth or the skills for the promotion of psychological well-being all of which are integral in the promotion of resilience in first-year university students. For this reason, more targeted intervention is required in this regard.

Limitations and Directions for Further Research

The current findings should be interpreted within the context of the limitations inherent within this study. The findings reflect associations and predictions, but not causal relations among the constructs. The present study included the use of self-report online questionnaires which may be subject to bias. Furthermore, the participants were recruited from one university which may limit generalisability. This may be particularly so given that some questionnaire items referred to the student's decision to attend the current university; students may feel they had less choice when the University of Tasmania is the only option within the

state. Furthermore, there is substantial diversity in student profiles in Australian universities with evidence to suggest the University of Tasmania has higher levels of students residing in rural/remote locations and having lower socio economic status (ACER, 2013) which would impact upon results.

While the study was designed to include a longitudinal aspect, with students requested to complete the questionnaires at three time points, the small number of students who did this meant that a longitudinal analysis was not feasible. Furthermore, data was not able to be collected at discrete time points due to the nature of the study, and as such the four time points were cut off points determined by the researcher that encompassed a two month time frame. Therefore the data would not have been able to capture any fluctuations in resilience that may have been evident at specific time points, such as the first two to three weeks of semester and the expected impact of time pressures students tend to face at the end of semester prior to exams.

While the PGIS is a growing area of research, a limitation is that the majority of research samples to date have been with university students as participants. As such, further studies with a more diverse sample group would be beneficial to increase the validity of the scale and the generalisability of the results to other populations.

Using the social support subscale from the RSA rather than an assessment measure designed specifically to measure perceived social support may be a limitation. However, the scale demonstrated good internal reliability and there are limited shorter measures for perceived social support from friends and family. Further research using an alternative assessment of support from family and friends may be beneficial.

Further research could investigate if different measures of resilience are indeed measuring the same construct by using more than one measure of resilience within the same study. It may be that predictors of resilience vary depending on what measure of resilience is used as the outcome variable. While the CD-RISC was found to be psychometrically sound, Windle et al. (2011) suggest a more thorough theoretical clarification would be beneficial as the CD-RISC looks at personal attributes to assess resilience while the RSA has a multi-level nature. It may be that results of this study found more intrapersonal factors predicted resilience because the CD-RISC has a focus on personal attributes to the relative exclusion of multi-level factors.

Summary of Findings

In summary, the results of the present study indicate that resilience in university students is enhanced by higher levels of personal growth initiative, optimism and higher levels of social adjustment to university in addition to lower levels of psychological distress, all of which are malleable and can be targeted through focused interventions. This finding indicates that resilience in university students encompasses individual and social factors which are all amenable to change. Therefore university resources should be directed towards facilitating resilience in students by focusing on these areas of intervention. The study also highlighted that first-year students are not a homogenous group, with significant differences found between full-time and part-time students in levels of resilience and predictors of resilience. Furthermore, resilience is important for individuals not only in transition to university but also throughout university life, in the transition from university to work life, and beyond.

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Appendix A

Information sheet for participants

PARTICIPANT INFORMATION SHEET

Internal and external predictors of satisfaction and adaptation to university

You are invited to participate in a research study that is aiming to identify the demographic, internal and external factors that predict student adaptation to University.

The study is being conducted by Ms Janine House who is undertaking this research as part of the requirements for an Honours degree in Psychology, and Mrs Kimberley Norris, who is an Associate Lecturer in Psychology at the University of Tasmania.

What is the purpose of this study?

This study aims to identify the demographic, internal and external factors that predictor student adaptation to University, thereby developing a more comprehensive understanding of the interaction between these components. This study will also investigate differences in adaptation to University between mature-aged and traditional school leaver students. Through gaining an understanding of the predictors of adaptation to university, further research into strategies that may be implemented to enhance adaptation are possible.

Why am I being asked to participate?

You are eligible to participate in this study because you are a current student at the University of Tasmania.

What does this study involve?

As a participant you will be required to complete six questionnaires, which may take between 45 to 60 minutes in total. First-year Psychology students will receive 45 minutes course credit for their participation. As your participation is voluntary, you may withdraw at any time prior to submission of the questionnaires. Once you have submitted your questionnaires you will not be able to withdraw your responses as the questionnaires are anonymous and we would not know which questionnaire belonged to you. These questionnaires can be collected from the School of Psychology's Student Services Office, Room 110 of the Social Sciences Building. The questionnaire may be completed in your own time and returned to

the student investigator by mail, or by placing it in the drop-off box in the Student Services Office.

Please take care to ensure all questions are answered, as we will be unable to include your information in the final analyses if you do not respond to all questionnaire items.

It is important that you understand that your involvement is this study is voluntary. While we would be pleased to have you participate, we respect your right to decline. There will be no consequences to you if you decide not to participate. All information will be treated in a confidential manner. All of the research will be kept in a locked cabinet in the office of the School of Psychology in the Chief Investigator's office and will be securely destroyed five years after publication of the data.

What are the benefits of participating in this study?

If you are a first-year Psychology student you will receive one hour research credit for your participation. It is possible that by completing this questionnaire you will gain personal insights and greater awareness of your own adaptation strategies, which may assist in enhancing your experience of the university learning environment.

More widely, your participation will improve current knowledge on what factors impact on students' adaptation to University life. This information may be used to help Universities provide a better environment for future students.

Are there any possible risks associated with participation in this study?

There are no specific risks anticipated with participation in this study.

What if I have questions about this research?

If you would like to discuss any aspect of this study please feel free to contact either Ms Janine House (email: jehouse@.utas.edu.au) or Mrs Kimberley Norris (email: Kimberley.Norris@utas.edu.au). Either of us would be happy to discuss any aspect of the research with you. Once we have analysed the information we will be posting a summary of our findings on the School of Psychology website. You are welcome to contact us at that time to discuss the results of the research study.

This study has been approved by the Tasmanian Social Science Human Research Ethics Committee [*HREC TBA*]. If you have concerns or complaints about the conduct of this study should contact the Executive Officer of the HREC (Tasmania)

Network on (03) 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants.

Thank you for taking the time to consider this study.

Your completion and submission of the survey will indicate your consent to participate in this study.

This information sheet is for you to keep.

Appendix B

Demographic Questionnaire

Section 1. – Background Questions

The following background questions are related to you and your experiences with university.

Sex: _____ Age: _____

What are your living arrangements: _____

(e.g. with parents/with partner/on own/sharehouse/other – please specify)

Are you an Australian Citizen: Yes / No (please circle)

Relationship status: _____

Number of dependent children: _____

Average number of hours of paid employment per week:_____

What is your degree: _____

What is/are you major/s: _____

Year of Study at University: _____ Part or Full Time Study: _____