

Running Head: DETERMINANTS OF SUPPORTIVE EXCHANGES

Determinants of the Exchange of Support between Parents and their Emerging Adult  
Offspring

By

Cissy (Lin Xi) Li

A thesis

submitted to the Victoria University of Wellington

in fulfilment of the requirements for the degree of

Masters of Science

in Psychology

Victoria University of Wellington

2013

## **Acknowledgements**

This thesis is the product of hard work on behalf of a number of people. I would like to thank my supervisor, Assoc. Prof. Paul Jose for his advice and guidance in the writing and editing of this thesis, but also to his repositories of knowledge regarding statistics, as well as his dedication in making sure I met necessary deadlines. I would like to thank everyone who has worked on the Youth Connectedness Project with me over the last year, as well as all the participants who kindly donated their time, for without them there would have been no data to analyse. I would also like to express my gratitude to Jaimee Stuart and Magda Kielpikowski for their practical assistance and encouragement.

## Table of contents

<b>Title page</b> .....	I
<b>Acknowledgements</b> .....	II
<b>Table of contents</b> .....	III
<b>List of tables</b> .....	V
<b>List of figures</b> .....	VI
<b>List of appendices</b> .....	VII
<b>Abstract</b> .....	1
<b>Introduction</b> .....	3
- Theory of Intergenerational Solidarity.....	6
- Historical Family Connectedness.....	7
- Filial Motives.....	9
- Filial Motives and the Exchange of Support.....	13
- Exchange of Support.....	15
- Current Study.....	18
<b>Method</b> .....	21
- Design.....	21
- Participants.....	21
- Measures.....	22
- Recruitment.....	25
- Procedure.....	27
- Data Analysis.....	27

<b>Results .....</b>	<b>28</b>
- Factor Analysis.....	28
- Reliability Analyses.....	34
- Descriptive Statistics.....	34
- Hypotheses 1 and 3: Support Type Varying by Gender and Support Direction.....	38
- Hypothesis 2: Relationship between Cohort and Filial Motives .....	40
- Hypothesis 4 and 5: Path Analysis.....	41
<b>Discussion.....</b>	<b>46</b>
- The Bidirectional Exchange of Support.....	47
- The Filial Motives Construct.....	49
- Filial Motives across Cohorts.....	55
- Determinants of the Exchange of Support.....	55
- Generalisability of the Study.....	60
- Limitations of the Study.....	61
- Conclusions.....	63
<b>References.....</b>	<b>65</b>
<b>Appendices.....</b>	<b>71</b>



## List of tables

<b>Table 1:</b> The two, three and four factor solutions of the PCA with varimax rotation for the exploratory sample.....	30
<b>Table 2:</b> Factor loadings and Cronbach's alpha values for the three factor model as indicated by the CFA on the exploratory sample.....	33
<b>Table 3:</b> Means and standard deviations (in parentheses) for family climate variables (measured at Time 3) and the three filial motive factors identified (measured at Time 4).....	35
<b>Table 4:</b> Means and standard deviations (in parentheses) for the self-reported provision and receipt of support from caregivers for all participants.....	35
<b>Table 5:</b> Correlations between all variables.....	37
<b>Table 6:</b> Means for filial motives by cohort.....	41
<b>Table 7:</b> Statistical output for all pathways in Figure 3.....	44

## List of figures

<b>Figure 1:</b> Scree plot from PCA on the exploratory sample .....	29
<b>Figure 2:</b> The means for the frequency of support types provided to and received from caregivers .....	39
<b>Figure 3:</b> Proposed path model showing Time 4 filial motives mediating the relationship between family dynamic variables at Time 3 and supportive exchanges at Time 4.....	42
<b>Figure 4:</b> Path model showing how family dynamic variables at Time 3 were mediated by Time 4 filial values upon support provided and received at Time 4.....	43

**List of appendices**

<b>Appendix A:</b> Participant recruitment email.....	71
<b>Appendix B:</b> Recruitment phone call scripts.....	72
<b>Appendix C:</b> Recruitment Facebook message.....	73
<b>Appendix D:</b> Invitation to Complete the Survey E-Mail.....	74
<b>Appendix E:</b> Information Sheet for the Time 4 survey.....	75
<b>Appendix F:</b> Measures.....	76

### **Abstract**

The parent-child relationship is one of the most integral connections throughout the life course (Fingerman, Cheng, Tighe, Birditt, & Zarit, 2012). Research indicates that support readily flows back and forth within this relationship, with parents providing the majority of support when their offspring are in adolescence, and middle aged offspring providing the most when parents reach old age (Hogan, Eggebeen, & Clogg, 1993). Determinants of this supportive exchange that have been investigated include demographic factors such as age, gender, and geographical proximity (Rossi & Rossi, 1990). Substantially less research has investigated the impact of longitudinal determinants, such as the joint developmental history shared by parents and their offspring on the amount of support exchanged between them. Even less research has investigated the links between a shared developmental history and more proximal predictors of supportive exchanges such as filial motives, and their influence on actual support provision. A prediction investigated in the current study was that a positive family climate in adolescence would predict increased supportive exchanges between emerging adult children and their parents. Further, it was posited that a Western conceptualisation of filial motives would mediate the relationship between family climate and the exchange of support, and a new scale was constructed using a theoretical approach to measure this dynamic. This study employed longitudinal data from 338 participants from two time points of the Youth Connectedness Project, five years apart. Participants were aged 12-17 in 2008 at the first time point, and aged 17-23 in 2013 at the second time point. Family climate variables were measured at the first time point, whereas filial motives and the exchange of support were measured at the second time point. A confirmatory factor analysis of a newly constructed filial motives measure indicated a three factor solution of 'interdependence', 'duty' and 'independence'. The three aspects of this new construct evidenced unique mediating relationships between family climate variables in adolescence and reported exchange of support five years later. A path analysis constructed with structural

equation modelling indicated that engagement in family mutual activities and the degree to which parents granted autonomy directly predicted five years later the amount of support received from caregivers. Notably, family cohesion was the strongest indirect predictor of the provision of support to parents, and this relationship was mediated by filial motives of interdependence and duty. These results collectively support the notion of continuity throughout the life course, and emphasises the need for longitudinal research to better understand the influence of family climate in adolescence on the parent-child relationship later in the life course.

### Determinants of the Exchange of Support between Parents and their Emerging Adult Offspring

Since the 1940s speculation has arisen as to whether children<sup>1</sup> still fulfil their filial roles to their parents as part of their familial obligations. These assertions have occurred in light of demographic trends including increased life expectancy, more women in the workforce, and decreased fertility rates, which collectively signalled to many observers that the traditional family structural form was in decline (Dinkel, 1944; Silverstein, Gans, & Yang, 2006; Zelizer, 1985). Despite apparent changes in family structures that have occurred in recent decades, the relationship between parents and their children remains one of the most enduring and crucial relationships throughout the life course (Fingerman, Cheng, Tighe, Birditt, & Zarit, 2012; Hogan, Eggebeen, & Clogg, 1993). Not only do parents act as a ‘safety net’ for their children in times of vulnerability (Hogan et al., 1993), but children also support their parents in times of need, with this supportive exchange proffering benefits for the psychological wellbeing of both parties (Fingerman et al., 2012; Kalmijn, 2003).

Filial obligation to support aging parents continues to be a robust phenomenon in Asian societies (Ho, 1996; Schwartz et al., 2010; Streib, 1987; Sung, 1994), although questions have been raised as to whether it is at all relevant in the West. Indeed, the literature shows that the exchange of support between parents and children remains an integral part of family life in both Eastern and Western nations, although the exact motives to provide support might differ as outcomes of different socialisation processes (Ho, 1996; Schwartz et al., 2010; Streib, 1987; Sung, 1994). The study of this exchange in Western nations has spanned a multitude of European nations (Lowenstein & Daatland, 2006), the United States (Eggebeen & Hogan, 1990) and New Zealand (Hillcoat-Nallétamby & Dharmalingam, 2003).

---

<sup>1</sup> In the current thesis, ‘children’ and ‘offspring’ are used interchangeably to refer to offspring of parents, regardless of age.

Typically, supportive relationships between offspring and parents have been investigated at two different points of the life course: during adolescence and the end of the life-span. Research findings from these two age-ranges have fuelled the impression that children and teenagers no longer fulfil their filial roles to their parents. For instance, the finding that support flows downwards from parents to their offspring until the end of the parents' life (Hillcoat-Nallétamby & Dharmalingam, 2003) signals to most researchers that support in the parent-child relationship is mostly unidirectional. This perspective has been further supported by the extension of adolescence into a new developmental period called emerging adulthood (ages 18-24) in the contemporary Western world (Arnett, 2000). Offspring in the emerging adulthood age bracket are hypothesised to be more dependent upon their parents for support than ever before in order to navigate the transitions marked by this developmental period (Fingerman et al., 2012; Hillcoat-Nallétamby & Dharmalingam, 2006; Johnson & Benson, 2012). This notion that parents are the net providers of support for the majority of the life course has become historically and culturally cemented, especially in industrialised countries (Zelizer, 1985). In fact, this belief has become so engrained that there is a paucity of contemporary literature aimed at understanding the flow of support from offspring to parents, especially during emerging adulthood.

Research that has investigated the upward provision of support from offspring to parents has been subject to a number of conceptual and methodological weaknesses. Firstly, research studying the provision of support from offspring to their parents have typically emphasised the study of non-routine, intensive crisis care, with mundane, routine supportive exchanges chiefly ignored (Hogan et al., 1993). Secondly, research often failed to take a life course perspective into account whereby patterns of supportive exchanges between parents and offspring were conceptualised as a dynamic, synergistic, life-long process. In conjunction, supportive family exchanges have been considered in an ahistorical vacuum, where the shared history between parents and their offspring up until adulthood was often

neglected in favour of studying static variables (Belsky, Jaffee, Hsieh, & Silva, 2001). In line with this view, researchers have gained a better understanding of how demographic variables such as age, gender, and marital status impact on the amount of support provided at any one time point (Rossi & Rossi, 1990). However, without considering a shared developmental history, we still lack a sound understanding of the longitudinal processes by which support provision from offspring to their parents manifests from a developmental, life-course perspective.

These limitations stand in stark contrast to the idealistic perspectives of the parent-child relationship as being integral, continuous and having benefits for the psychological wellbeing of both parties (Fingerman et al., 2012; Kalmijn, 2003). Specifically, it appears difficult to establish the fundamentality and continuity of this relationship if it cannot be determined whether continued supportive exchanges over the life course have historical and shared developmental roots. Fittingly, research studying the exchange of support between parents and their children now emphasises the need to investigate exchange dynamics from a longitudinal perspective. In particular, a small set of studies has explored how supportive exchanges in adulthood may be preceded by early relationship history and filial norms (Aquilino, 1997; Gans & Silverstein, 2006).

In order to investigate the relationship between early relationship history, filial norms and supportive exchanges in emerging adulthood, this thesis will first consider theoretical constructions of their interrelationships using the theory of intergenerational solidarity (Bengtson & Roberts, 1991). Subsequently, the potential predictive value of family climate on the exchange of support between emerging adults and their middle aged parents will be discussed. Afterwards, constructs pertaining to filial motives will be defined before they are proposed as possible mediators of the relationship between family climate and subsequent exchange of support. Lastly, research in relation to the functional exchange of support will be reviewed before the aims and hypotheses of the current study are stated.



**Theory of intergenerational solidarity**

The relationship between early relationship history, filial norms, and exchange of support between parents and children are examined in the theory of intergenerational solidarity posited by Bengtson and Roberts (1991). This theory is one of the most important and influential theories in the study of parent-child relationships in adulthood as it attempts to explain how the strength of family bonds (or ‘cohesiveness’) between adults and members of their family of origin are built and maintained. The theory was constructed using a ‘theory knitting’ method, drawing from multiple schools of influence including theories of social organisation, group dynamics, and a developmental perspective of family psychology in order to create an “implicit organisation of existing findings” (Bengtson & Roberts, 1991).

Bengtson and Roberts (1991) proposed that solidarity is a property of families that is maintained due to the interaction of six distinct family level dimensions (Lee, Netzer, & Coward, 1994; Mancini & Blieszner, 1989; Silverstein & Bengtson, 1997). The dimensions proposed were those of: 1) associational solidarity (frequency of family interaction across various activities), 2) affectual solidarity (type and degree of positive sentiments, including warmth, affection, closeness), 3) consensual solidarity (degree of agreement on values, beliefs and attitudes), 4) functional solidarity (degree of supportive exchanges), 5) normative solidarity (strength of commitment to familial roles and to meeting familial obligations) and 6) structural solidarity (opportunities for interaction such as proximity).

Bengtson and Roberts (1991) model proposed an initial framework from which to consider longitudinal interrelationships between affectual solidarity, normative solidarity and functional solidarity. They posited that normative solidarity (filial norms) would directly predict the provision of support from child to parent. In addition, an indirect pathway was proposed between normative solidarity and functional solidarity mediated by the child’s affection for the parent. When this model was tested cross-sectionally, Bengtson and Roberts

(1991) found a positive and direct relationship between levels of current filial norms and current affection for the parent, however the provision of support was not measured.

This model contains a number of strengths, which we hoped to capitalise upon in the current study, and a number of weaknesses, which we hoped to correct. Firstly, the solidarity dimensions identified seem to account for factors relevant to the parent-child relationship, were well defined, and therefore could be operationalized and measured. Although Bengtson and Roberts (1991) did not test the mutual influence of the solidarity variables on each other over time, they identified empirical interrelationships between affection and filial norms. In conjunction, they proposed theoretical interrelationships between affection and filial norms with support provision.

Secondly, as solidarity was proposed to be a product of well-functioning families, it is likely that these types of solidarity affect each other dynamically throughout the course of the parent-child relationship. In this way, dimensions of solidarity had the propensity to be viewed longitudinally as not only the product of family systemic and climactic influences, but as built, maintained and changeable over time. This theoretical perspective facilitates the study of historical family relationships on supportive exchanges as it fits within the perspective of the joint developmental history which occurs within family systems. Further, this perspective allows affectual solidarity to be operationalized as being a product of families, which permits its measurement using family climate variables.

The weaknesses of Bengtson and Roberts' study were that it did not measure supportive exchanges, and that it was cross-sectional. The current study attempted to negate these weaknesses by considering the interrelationships between affection, filial norms, and supportive exchanges from a longitudinal perspective.

### **Historical family connectedness**

Understanding the nature and trajectory of the supportive relationship between parents and their children has become increasingly important with children now depending on their

parents through emerging adulthood, and parents requiring a prolonged length of assistance as life expectancy continues to increase. Due to the longevity of the relationship, it has become pertinent to consider how familial relationship history in youth may impact on future motivation to provide support to parents. In line with this idea, researchers over the last two decades have hypothesised and found that family experiences in childhood effect family relationship quality and frequency of contact in later life (Amato & Booth, 1996; Rossi & Rossi, 1990), with a history of affection and positive sentiments (affectual solidarity) considered a precursor to supportive parent-child relationships in adulthood (Bengtson & Roberts, 1991; Hogan et al., 1993).

Cross-sectional studies have found that intergenerational affection and contact are strong motivators of middle-aged children to provide support to their aging parents (Silverstein, Parrott, & Bengtson, 1995), with the current level of emotional intimacy being associated with higher frequencies of contact and exchange between generations (Bengtson & Roberts, 1991; Rossi & Rossi, 1990). Further, feelings of attachment measured by psychological closeness predicted the degree to which middle-aged children endorsed hypothetical future help giving (Cicirelli, 1983; Hamon, 1992). In addition, recollections of family cohesion (the degree to which the family was a happy and co-operative unit) from adolescence predicted the amount of support provided by middle aged children to their elderly parents (Rossi & Rossi, 1991).

Although causality cannot be established in cross-sectional studies, a number of longitudinal studies provide support for the proposed causal relationship between family dynamics in adolescence and the later exchange of support. Using several different longitudinal data sets, these studies (Aquilino, 1997; Parrott & Bengtson, 1999; Silverstein, Conroy, Wang, Giarrusso, & Bengtson, 2002; Whitbeck, Hoyt, & Huck, 1994) found that historical relationship quality and affection manifested a predictive positive relationship with future help and support exchanges. Family climate and relationship quality during

adolescence were strong predictors of affection as well as functional solidarity when children were in their mid-20s. Aquilino (1997) found that authoritative parenting, characterised by warmth and closeness, and supportive relationships in adolescence predicted greater levels of emotional closeness, shared activities and support provision from child to parent during emerging adulthood. Further, family climate variables from adolescence including time spent in shared activities (associational solidarity) and emotional intimacy (affectual solidarity) predicted the provision of social support up to two decades later (Silverstein et al., 2002). Notably, a longitudinal study conducted by Parrott and Bengtson (1999) indicated that the greater the history of intergenerational affection, the greater the amount of support received from parents, although the amount of support received did not significantly predict the amount of support that a child then provided to their parent.

Thus, a positive family climate in childhood characterised by positive, cohesive, trusting parent-child relationships and a supportive parenting style have consistently been linked to positive, cohesive and supportive parent-child relationships later in adulthood (Belsky et al., 2001; Fingerman et al., 2012; Parrott & Bengtson, 1999; Rossi & Rossi, 1990; Whitbeck et al., 1994). These studies indicate that it is likely that a perceived family bond characterised by closeness, engagement in shared activities and warmth would lead to the provision of support from children to their parents.

However, whilst acknowledging the role that family dynamics in adolescence may have on the exchange of support in adulthood, it is likely that this temporally distant factor is mediated by more proximal motivators of support provision. One proposed mediator is filial motives.

### **Filial Motives**

Filial motives are proposed to be a more proximal motivator of support provision as they relate to internalised norms, attitudes and values governing the provision of support from the younger generation to the older generation. Filial motives often carry Eastern,

collectivistic and Confucian connotations (Ho, 1996), despite also existing in Western, individualistic and typically Judeo-Christian countries, although the dynamic is likely to be manifested differently in the two settings. In Western populations, the constructs perceived to govern beliefs, values and attitudes related to the provision of support from children to their parents have been familism (Bengtson & Roberts, 1991; Schwartz et al., 2010), filial responsibility (Silverstein et al., 2006), filial obligation (Ganong & Coleman, 2005) and filial maturity (Blenkner, 1965).

As proposed in Bengtson and Roberts (1991) theory of intergenerational solidarity, norms regarding the centrality of family are referred to as familism, of which filial responsibility/obligation are considered components. Filial obligation and filial responsibility are the two terms that are most often conflated in the literature, with studies often using these terms interchangeably. However, it has been suggested that these are two distinct concepts that examine filial obligation in different ways (Stein et al., 1998). Filial responsibilities have been defined as a generalised normative expectation, attitude, or societal norm that assumes adult children will support their parents in old age without the expectation of compensation (Dellmann-Jenkins & Brittain, 2003; Dinkel, 1944; Freeberg & Stein, 1996; Ganong & Coleman, 2005; Gans & Silverstein, 2006; Kohli & Künemund, 2003; Silverstein et al., 2006; Stein et al., 1998). On the other hand, filial obligations evolved out of this societal norm, develops over time (Kohli & Künemund, 2003) and refers to the idea that parents have a ‘right’ to be supported, while children have a ‘duty’ to provide this support and to maintain contact in kinship roles (Freeberg & Stein, 1996; Stein et al., 1998).

More recently, there has been a paradigm shift away from considering a normative expectation or a sense of duty as the only motivator of support provision to parents, especially in Western societies. This notion is supported by a cross-cultural study conducted in New Zealand (Ng, Loong, Liu, & Weatherall, 2000) which indicated that NZ Europeans endorsed the importance of keeping in touch with their elders more strongly than the

importance of obeying and providing financial support to them, whereas the opposite pattern of endorsement was found for their NZ Chinese counterparts.

In line with this finding, a useful Western conceptualisation of the motivation to provide social support comes from Blenkner's (1965) theory of filial maturity, adding in several aspects of Nydegger's (1991) proposal of parental maturity. In concert, these concepts refer to the shift of the parent-child relationship from a hierarchical to a more egalitarian orientation, characterised by a mixture of autonomy, understanding and concern for others. Empirical evidence has indicated that gaining filial maturity requires two components. First, sufficient individuation away from parents must be gained so that parents can be viewed as imperfect beings with their own vulnerabilities ('distancing'). Second, offspring also need to retain a high level of psychological closeness in order to view the relationship as a mutual source of support ('comprehending'; Birditt, Fingerman, Lefkowitz, & Dush, 2008).

Due to the many definitions of these filial concepts, and multiple methods of measuring and conceptualising them, research on filial motives in Western samples has failed to flourish. It is likely that Western samples have different motivations to support their parents, as indicated by Ng et al.'s (2000) study on filial obligation felt by NZ adolescents. Specifically, motivation to support parents in Western samples may be better captured by a filial maturity perspective which emphasises egalitarian, warm and co-operative relationships. However, this view does not exclude Western samples from feeling a sense of duty to support their parents. There does not appear to be research that has investigated these concepts in tandem in Western samples, and therefore little is known about the overlap and discreteness of the constructs of filial responsibility, obligation and maturity from each other.

Issues pertaining to the interrelationship between affectual solidarity and normative solidarity also have been raised. Notably, despite affectual solidarity and normative solidarity being theoretically and empirically linked in Bengtson and Roberts (1991) model, there is still considerable doubt in the research regarding whether these two constructs are

interrelated, and in regards to the direction of causality. Specifically, the causal relationships between historical family climate, filial motives and the exchange of support have been an area of debate. Some researchers have proposed that filial norms and behaviours are not simply the outgrowth from feelings of emotional intimacy, cohesiveness and/or affection for one's aging parents (Finley, Roberts, & Banahan, 1988). Others have found that a history of rejection, negative family relationships, disruption and remarriage can materially decrease feelings of filial obligation and actual support (Coleman & Ganong, 1999; Rossi & Rossi, 1990), which by implication denotes a causal association between the three variables under consideration.

In kind, theoretical conceptualisations have proposed that filial obligations are the product of individual life circumstances including the costs and benefits of the intergenerational relationship (Blieszner & Hamon, 1992). If the intergenerational relationship is perceived as fair, trusting, respectful and affectionate, then filial obligation should follow (Cicirelli, 1983). Others posit that filial obligation should have its roots in early childhood experiences as obligation should arise from wanting to reciprocate to parents who were active and involved in their upbringing (Noack & Puschner, 1999; Rossi & Rossi, 1990). Additionally, positive socio-emotional bonds between adolescents and their parents are often seen to predicate a reciprocal and egalitarian relationship in adulthood, and be part of the process of gaining filial maturity and autonomy (Aquilino, 2006; Birditt et al., 2008; Noack & Puschner, 1999; Nydegger, 1991). These conceptualisations, as well as Cicirelli's (1983) study, indicate that it is possible that family dynamics, cohesion and affection in adolescence may influence feelings of filial obligation later in the life course.

Another issue relates to the temporal ordering of affectual and normative solidarity. Although the antecedent relationship of filial motives to the provision of support has been explicitly proposed, affection is often indicated as a mediator of the relationship (Cicirelli, 1983; Whitbeck et al., 1994). In a cross-sectional study, Cicirelli found that filial obligation

manifested an indirect influence through feelings of attachment on present support and intention to provide help in future, with a stronger indirect relationship apparent with present helping behaviour. Additionally, Whitbeck et al. (1994) found that although there was a direct relationship between filial concern at year 1 and emotional, and practical assistance at year 3, a separate pathway for this relationship was mediated by affectual solidarity at year 2.

Three points can be drawn on the basis of these results. First, filial norms appear to have a stronger indirect influence on current supportive behaviours compared to its influence on intentions to provide future support (Cicirelli, 1983), indicating its possible validity as a proximal predictor. Second, we cannot ascertain the exact causal pathway connecting feelings of affection and attachment, filial motives, and the provision of support from the results of previous studies. Cicirelli's (1983) study indicated that although filial obligation and feelings of attachment were both related to helping behaviours, interrelationships between the two were not investigated. In Whitbeck's (1994) study, filial concern was not measured again at years 2 or 3 so it cannot be surmised whether affectual solidarity predicted subsequent filial concern. Last, and by implication of the finding that historical relationship quality is predictive of current relationship quality, is the idea that historical affection and family closeness may predispose children to hold motives supportive of the centrality of family in the first place. Therefore, although Bengtson and Roberts (1991) proposed that normative solidarity likely causes affection between family members, it is likely that a history of affectual solidarity may influence the initial development of normative solidarity.

### **Filial Motives and the Exchange of Support**

In line with a Western conceptualisation of filial motives, there has also been a comparable shift in the empirical literature which indicates that the upward provision of support (from younger to older) in a European and American context is not purely related to a sense of duty to provide support (Hogan et al., 1993; Lowenstein & Daatland, 2006).



Instead, there is a growing consensus that the filial motives guiding the provision of support in Western samples is due to a mixture of altruism and reciprocal exchange (Hogan et al., 1993; Ikkink, Van Tilburg, & Knipscheer, 1999; Kohli & Kunemund, 2003; Lowenstein & Daatland, 2006; Silverstein et al., 2002), and motivated by a shared developmental history of affection and support. This theoretical view is supported by findings that indicate adult children who received more support early in life provide more support later in life (Lee et al., 1994), a finding which has also been supported longitudinally (Aquilino, 1997). These results are largely congruent with research outcomes regarding the relationship between historical family climate and relationship quality with supportive exchanges, as it indicates that motivation to provide assistance may develop out of a mixture of familism as well as wanting to give back to parents based on what has been received. Further, based on the theory of intergenerational solidarity, normative solidarity and consensual solidarity are likely inculcated throughout adolescence through family climate and socialisation processes. Notably, research also suggests that values, beliefs and attitudes supportive of filial motives are likely to stay relatively stable over the life course (Blieszner & Hamon, 1992; Gans & Silverstein, 2006).

However, the relationship between filial motives and support is not one of simple cause-and-effect. A hypothesis regarding the exchange of support between parents and their children states that filial motives are necessary, but insufficient precursors to the provision of support from children to their parents (Silverstein et al., 2006). Silverstein et al. suggest that, as part of the dynamic nature of the parent-child relationship, the exchange of support is the product of a synergistic process of push and pull factors. The 'push' factor is noted as being filial motives for the child, but that this factor must interact with 'pull' factors of the parent's need for support.

Filial motives were proposed to develop as a product of chronological age and have been linked to attainment of developmental markers of adulthood, including moving out of

the family residence and having children (Rossi & Rossi, 1990). Likewise, filial maturity was thought to develop in middle age after the resolution of a 'filial crisis' (Blenkner, 1965). Accordingly, these results collectively suggest that young adulthood would be characterised by 'filial immaturity', a period in which a sense of duty or willingness to support elderly relatives had yet to develop (Blenkner, 1965).

However, chronological age in itself has been seen as an inadequate predictor of when motives to support parents will develop (Dellmann-Jenkins & Brittain, 2003; Nydegger, 1991). Instead, findings have consistently maintained that youngest children had the highest filial responsibility scores compared to older cohorts (Dinkel, 1944), with feelings of obligation increasing in the three years following high school (Aquilino, 2006; Rossi & Rossi, 1990). Longitudinal analyses using multilevel latent growth modelling have also found that the filial responsibility of young people were particularly strong, with the process of decline actually occurring in middle age (Gans & Silverstein, 2006; Rossi & Rossi, 1990). Gans and Silverstein (2006) reasoned that a probable reason for the strength of young adults' sense of filial responsibility might be due to the idealism of young people who have not yet needed to provide support and a lack of awareness of practical implications of this sense of responsibility.

### **Exchange of Support**

Support has been defined as the provision of material and psychological resources from one person to another (Cohen & Wills, 1985). Most commonly, five types of support are identified, including financial support, practical assistance, advice, guidance and emotional support (Cohen & Wills, 1985; Rossi & Rossi, 1990). Parents and children act as pillars for each other through the up and downs of life, with the availability and provision of social support acting as a buffer against negative outcomes and in most cases resulting in increases in physical and psychological wellbeing (Rossi & Rossi, 1990; Walker, Pratt, Shin, & Jones, 1990).

The receipt of support across the life course has been proposed to follow a 'U-shaped' pattern, whereby the most support is received by the old and the young, with middle aged adults receiving little support but providing the majority of the support (Hogan et al., 1993). However, support provided by children and directed to parents should not be underestimated, with cohort studies showing that as downward support decreases over the life course, upward support to parents persists at the same level (Rossi & Rossi, 1990).

One hypothesis regarding why children receive more support from their parents than vice versa is the intergenerational stake hypothesis (Giarrusso, Du, & Bengtson, 2004). This theory follows a psychosocial perspective of development where parents and their children progress through their lives together; however, as they never share a developmental period, their developmental goals also differ. Therefore, parents and children are suggested to have different 'stakes' in the parent-child relationship, whereby parents have greater incentive to support their children than vice versa. This inequality is due to a bias of parents to be more concerned about the closeness of the parent-child relationship, leading them to judge the relationship as more emotionally close than that perceived by their children. However, emerging adults in particular are hypothesised to feel less obligated to their parents, partially as a result of a developmental goal to establish autonomy and independence (Arnett, 2000; Giarrusso et al., 2004).

Counter to this hypothesis, intergenerational help exchange has been shown to be greatest between children aged 20 to 29 years and their parents, compared to any other age group (Eggebeen & Hogan, 1990), which is coincidentally the age group marked by strong filial motives (Gans & Silverstein, 2006). Additionally, Rossi and Rossi suggest that despite still being heavily dependent on their parents economically, children aged between 18-22 years provide a 'good deal' of all types of support to their parents except in the financial domain. This pattern indicates that support exchange is not a zero-sum situation; the downward provision of support does not preclude the upward provision of emotional and

instrumental support from occurring, and in fact, it is likely that they are adequately dynamic and occur in unison.

When considering different types of support, the type of support most likely to be provided to parents was emotional support (Rossi & Rossi, 1990), whereas financial support was most likely to flow down the generational hierarchy (Bucx, van Wel, & Knijn, 2012). Lowenstein and Daatland (2006) suggest that instrumental (practical) assistance was also more likely to flow up generational lines as opposed to downwards. Additionally, the types of support provided also vary in frequency based on the gender of the emerging adult. Daughters were more likely to provide emotional and practical assistance as well as provide advice to their parents compared to sons (Bucx et al., 2012; Rossi & Rossi, 1990). Sons were more likely to provide financial assistance to their parents than daughters, who were more likely to offer practical assistance (Eggebeen & Hogan, 1990).

A number of measurement issues exist in the study of the exchange of support. For instance, a number of studies have previously relied on ‘forecasting’, where responses to a number of vignettes are used to ‘forecast’ how individuals may respond to their parents’ need for support (Rossi & Rossi, 1990; Wake & Sporkowski, 1972). These hypothetical situations have not been linked to actual behaviour, and so serve as a poor behavioural measure (Dellmann-Jenkins & Brittain, 2003). Secondly, research has often investigated merely one half of the exchange relationship, either by focusing on downward or upward support instead of considering the two in unison (Fingerman et al., 2012; Hillcoat-Nallétamby & Dharmalingam, 2003). Others have focused on crisis and non-routine ‘caregiving’ instead of considering the determinants of everyday, routine support (Dellmann-Jenkins & Brittain, 2003).

The assertion has been made that “motivation of adult children to provide social support to their older parents is rooted in earlier family experiences and guided by an implicit social contract that ensures long-term reciprocity” (Silverstein et al., 2002, p. S12). However,

very few studies have investigated earlier family experiences and filial obligations as implied by the phrase “implicit social contract that ensures long term reciprocity” alongside perceived support provision. Further, there does not appear to be any study that has sought to disentangle the causal or predictive relationships among these three variables.

### **Current study**

The current study was designed to investigate the predictive ability of family climate and filial motives on a subsequent measurement of the mutual supportive relationship, with a focus on the provision of support from emerging adults to parents. In particular, one of the aims of this study was to differentiate filial responsibility, obligation and maturity from each other by constructing a new measure of filial motives. The second of the aims was to determine whether these filial motives differentially mediated between family dynamics on the one hand and subsequent reported levels of support provided and received on the other hand.

In order to measure the influences of family climate and motives, data from the Youth Connectedness Project were utilised, a longitudinal study on adolescents that began in 2006 in NZ, and for which the most recent data collection time point was in 2013. This dataset has multiple advantages over data used previously. The dataset was initially conceived to measure social relationships between a young person and significant others in their lives, with a strong focus on perceived family bonds. In addition, as the dataset is contemporary it is hoped that this study would be able to glean information regarding the perspectives of young adults growing up in an era of technological advances instead of relying on data from long ago (some studies are up to two decades old). Furthermore, data in the last wave came from emerging adults currently aged between 17-23 years. It was expected that emerging adults were still young enough to possess a rich and recent relationship history with their parents and immediate family, yet old enough to feel motivated to engage in support provision as

indicated by previous studies. Further, emerging adults are at an age where they are beginning to gain the capacity to offer support to their parents (Aquilino, 2006).

To measure family climate and relationship factors in adolescence, the construct of family connectedness was used; it is an excellent indicator of the perceived bond within a family (Jose & Pryor, 2010). As intergenerational solidarity is posited to be a product of families, it appeared logical to measure family climate as an indicator of the perceived quality of family relationships in adolescence. Specifically, based on previous research, the variables of family cohesion was used to measure the degree to which families were perceived as an integrated unit, as well as a perceived sense of family identity to gauge the closeness within the family. The degree to which autonomy was granted within the family was measured to gain a sense of the degree to which parents supported the process of individuation in adolescent development. Family mutual activities were measured to account for associational solidarity (the frequency parents engaged in mutual activities) during the period of adolescence.

In order to capture distinctions made in the filial obligation literature, there is a need to be explicit regarding the methodological approach used (Ganong & Coleman, 2005). We defined filial motives here as consisting of two components of familism (the centrality of family) as well as including the separate tenet of filial maturity. The first component of familism, filial responsibility, was defined as the personal responsibility that one feels to support one's parents. The second component of familism, filial obligation, was defined as the personal felt obligation that one feels to support one's parents. Filial maturity was defined as the degree to which the parent-child relationship is perceived as egalitarian.

Another pitfall in the empirical literature that this study aimed to resolve was that filial motives were not necessarily linked to actual support behaviour, and was instead indicative of hypothetical behaviour in hypothetical situations, which may not generalise to real world contexts (Ganong & Coleman, 2005). Research suggests that there is typically a

loose fit between norms and actual behaviour (Lowenstein & Daatland, 2006; Rossi & Rossi, 1991), and even if there is a strong relationship, there can be differences in how one behaves (Lowenstein & Daatland, 2006). Secondly, the differences and similarities between norms, intentions and actual behaviour are often poorly delineated (Ajzen & Fishbein, 1977; Gans & Silverstein, 2006; Stein et al., 1998). Therefore, the filial motives measures created for the current study aimed to differentiate between norms and intention to provide future support, and this measure was linked to the provision of actual support over the last year.

Five support types were measured in the current study in accordance with the types measured in previous studies (financial, emotional, advice, guidance and practical), especially as it has been shown that people vary in the types of support they provide at different ages (Rossi & Rossi, 1990).

Our two main goals were to: 1) create a new filial motives measure in a Western sample and 2) to test a proposed path model involving the temporal relationships among family climate, filial motives and support provision. We also sought to replicate some important past findings based on cross-sectional designs. In particular, we wanted to investigate gender differences in the provision of support, and determine whether filial motives increased in the three years after high school as indicated by Aquilino (2006). We predicted that:

1. Female emerging adults would provide more support than their male counterparts.
2. Filial motives would increase with age such that older cohorts would manifest the strongest endorsement of filial motives.
3. Parents would provide more financial support to their children, whereas children would provide other types of support, especially practical and emotional support.
4. A positive family climate in adolescence would positively predict perceived obligation, which in turn would predict support behaviour later in early adulthood.

5. Filial motives measured by filial responsibility, obligation and maturity are expected to function as mediators between historical family climate variables and the exchange of support. Specifically, close affectionate ties in adolescence would increase judgements of filial motives, which would then be expressed behaviourally through support provision.

## **Method**

### **Design**

A sequential design was employed whereby data for different cohorts were collected in 2006, 2007, 2008 and 2013. Data used for the present research project came only from the 2008 and 2013 time points. The three cohorts were aged 12-13, 14-15 and 16-17 in 2008, and aged 17-18, 19-20 and 21-22 years in 2013. The current study used data from the 2008 and 2013 time points in order to analyse the predictive relationships between family variables in adolescence, and their subsequent impact on filial attitudes and on the amount of support given to and received from primary caregivers.

### **Participants**

At Time 1 in 2006, the sample consisted of 2,174 students who were grouped into three cohorts: 786 10-11 year-olds, 705 12-13 year-olds, and 683 14-15 year-olds. These students were recruited from a nationally stratified sample of schools from the North Island of New Zealand (NZ). In 2006, the sample was 48% male and 52% female, and consisted of 52% European New Zealanders, 30% Maori, 12% Pacific Islanders, with 6% identifying as being of another ethnicity. Apart from ethnicity (where Maori participants were overrepresented and European New Zealanders underrepresented), the demographics of this sample were largely representative of the 2001 NZ census. At Time 3 in 2008, 81.6% (1,774) of the original sample of participants had completed the survey at all three time points, with attrition for Maori participants twice as high as that for NZ Europeans.



Of the 1774 participants from the Time 3 survey in 2008, 1200 participants agreed to complete the Time 4 survey in 2013. A total of 340 participants completed the survey within the first 17 days of the survey being released online in this most recent wave of data collected. Data reported for the current study were from 338 of these respondents, with two participants deleted listwise as they had not responded to any questions concerning the provision/receipt of support from primary caregivers. This Time 4 sample represents 19.1% of the sample at Time 3. Due to pressing deadlines for completion of the master's thesis, the author of this present work could not wait longer for more participants to complete Time 4. A sample of 338 individuals was considered to be sufficiently large for the analyses performed in this thesis work.

Using the demographic information provided at Time 3, the present sample consisted of 37.6% male and 62.4% female. Participant ethnicity was 71.3% NZ European, 16% Maori, and 11.2% of another ethnicity, with data missing for 1.5% ( $n = 5$ ) of participants. Numbers were fairly evenly distributed across the three cohorts, with 38.5% of the sample in the 17 to 18 year age group, 26.3% in the 19 to 20 year age group and 35.2% in the 21 to 22 year age group. Of this sample, 30.8% currently reported being at secondary school, 41.1% were currently in tertiary education or job training, and 22.8% were working full time (greater than 30 hours a week), with 8.3% currently engaged in other pursuits (part time work, between jobs, parenthood). Although there has been a large amount of relocation in this sample over time, most participants still resided in the North Island of New Zealand, with a small number (~9%) now residing in the South Island and overseas.

## **Measures**

Measures used in the current study were created using a top-down approach whereby the definition of the construct was initially determined and relevant literature was reviewed before a list of items was generated. The items were then pruned using a committee approach in order to maximise the relevance and specificity of questions to the operational definition.

A full list of measures and the respective items that were used for the current study can be found in Appendix F.

**Demographic and contextual questions.** Demographic questions pertaining to the participant were garnered from their Time 3 responses. Demographic and contextual questions were also asked of the two primary caregivers at Time 4 so that the role of age, gender, proximity, and frequency of contact could be considered in relation to the amount of support provided.

**Time 3 family climate variables.** Data on family autonomy (3 items), family identity (2 items), family mutual activities (6 items) and family cohesion (5 items) from the Time 3 survey were used. The development of the family autonomy items were influenced by the Family Climate Inventory, with the Family Adaptability and Cohesion Evaluation Scale (FACES-II, Olson, Sprenkle, & Russell, 1979) influencing the development of the family mutual activities and family cohesion items. These items were not included in the Time 4 survey as they were considered to be largely irrelevant for emerging adults who had left their home of origin. Cronbach's alphas at Time 3 indicated all four measures demonstrated good to excellent reliability ranging between .76 (family mutual activities) to .92 (family cohesion). All items were measured on a Likert scale from 1 (*never/almost never*) to 5 (*always/almost always*).

The autonomy items attempted to measure the amount that the family encouraged the development of independent and autonomous thought, with a sample item being "*someone in my family/whanau encourages me to make my own decisions*". Family identity measured the extent to which participants were proud of their family membership, as exemplified in the item "*it means a lot to me to be a member of my family/whanau*". Family mutual activities measured the frequency to which family members engaged in specific family activities (associational solidarity), such as "*do you and your family/whanau have holidays together*". Lastly, family cohesion measured the extent to which family members enjoyed spending time

together and supporting each other, including questions such as “*we can easily think of things to do together as a family/whanau*”.

**Filial motives.** The filial motives measure was generated for the Time 4 survey, and was measured with a total of 16 items, which attempted to capture different conceptualisations of filial motives. Specifically, items were created to measure the intention to provide specific types of support in future (3 items), the importance of the centrality of family (10 items), and the shift to an egalitarian supportive relationship (3 items). Participants responded on a Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*) for all items.

The intention to provide support items enquired about the perceived obligation and intention to provide certain types of support to primary caregivers. Initially, this scale had five items to reflect attitudes to provide each of five facets of support (financial, social, emotional, practical, and guidance). However, when these items were tested in a pilot study with 48 university students between the ages of 18-24 years, Principal Component Analysis (PCA) led to the removal of the social (“*I feel I should spend time with/keep in touch with my parents*”) and emotional (“*I feel I should comfort my parents if they were upset*”) items from filial obligation as they were double-loaded and did not fit well within any factor.

The six centrality of family items captured a sense of family interdependence, as well as feelings of affection and altruism (“*if my parents need help, I will always be there*”) and reciprocation (“*my parents have done so much for me that I would like to give back to them*”). Additionally, four independence items were included, such as “*I want to live by myself as soon as I can*”. Four interdependence items were taken from the family interdependence measure first created by Phinney, Kim-Jo, Osorio, and Vilhjálmsdóttir (2005), and one interdependence item was generated for the study (“*to satisfy my family’s needs even when my own needs are different*”). The four independence items were generated for the purposes of the current study.

We created three items to measure the shift to a more egalitarian relationship structure between parents and children (*“as I grow older, my parents seem less like authority figures and more like equals”*) and explicitly attempted to measure parental maturity (*“my parents see me as a person who they can turn to for support”*). These items were influenced by Nydegger’s (1991) conceptualisation of parental maturity, and Aquilino’s (2006) conceptualisation of filial maturity.

**Provision of Support.** Participants were requested to answer the provision and receipt of support items for two self-nominated primary caregivers (defined as someone who was in charge of looking after them most of the time while growing up). Self-nomination was used instead of specifying mother and father because non-traditional families are becoming increasingly common (Anyan & Pryor, 2002). By allowing flexibility in caregiver choice, it was hoped that we would maximise the applicability of these questions to all participants.

Six items were used to measure the provision and receipt of support to and from each of their chosen primary caregivers, which were influenced by Rossi and Rossi’s (1990) Help items. Each of the five facets of support (listed above) was measured with one item each. The item *“gave you practical help (housework, maintenance, shopping, yardwork, cleaning, babysitting, running errands)”*, intended to capture a range of practical assistance to counter any traditional gender-based stereotypes. Another item was *“Showed them how to do something they didn’t know how”*, was deemed to be a mixture of both informational and practical assistance that was not already measured by the other questions.

By matching the provision of support items to the filial obligation items, it was possible to gain information regarding an individual’s motivation and behaviour regarding each specific facet of support. These items were rated on a Likert scale from 1 (*never*) to 5 (*all of the time*) in order to obtain a subjective measure of how much support was provided. All questions used for the provision of support were specified to be answered ‘for the last year or so’, in order to capture the same metric used by Rossi and Rossi (1990).

**Recruitment**

Ethical approval for the study was obtained from the School of Psychology Human Ethics Committee at Victoria University of Wellington (identification number RM020004).

Participants were recruited from contact details that were provided in 2008 as part of the YCP Time 3 survey. Due to only possessing limited contact details for some participants and the considerable length of time since the last contact (increasing the likelihood that contact details were now out of date), it was decided that a three-step procedure to recruitment would be taken.

The first step in re-recruiting participants was to contact the participant directly via e-mail (Appendix A). The e-mail contained information which described the continuation of the study and instructions directing the person to an online survey platform run by Qualtrics<sup>®</sup> for them to provide updated contact details if they consented to participate again.

For those who did not receive the e-mail (in many cases the e-mail address was no longer in service), or those who did not respond within two weeks to the e-mail, phone contact was attempted using contact phone numbers including parents and nominated alternative contacts that were provided at Time 3. Calling was performed by the author and three other research assistants over a 6 month period; a script was used to be consistent in the recruitment method used and to stay within ethical guidelines (see Appendix B). If participants agreed to be contacted in regards to the study, we obtained an e-mail or physical address to which to send the survey.

For the participants whom we could not contact by the above methods, or for whom we did not have contact details, contact was attempted using the social media site, Facebook<sup>®</sup>. In this case, a private message was sent to an identified individual (see Appendix C) which directed them to the online survey platform to opt in and to update their contact details, or to opt out from receiving future correspondence.

Using these contact methods and exhausting all possible contact information, 1288 participants were contacted within an initial six month period. Of these individuals contacted, 1200 participants were interested in participating and 88 participants declined.

### **Procedure**

The survey was then sent to participants via their chosen method with a brief introductory letter (see Appendix D for the e-mail version), with 560 participants completing the survey online within 30 days of sending it out. The survey itself took approximately one hour to complete, with participants able to save the survey and resume it anytime within a six month period from when the survey was first begun.

After following the Qualtrics website link provided in the e-mail, participants were provided information regarding the study and told that their participation would indicate consent (Appendix E). Participants were then directed to a screen where they were requested to enter a unique identification number that would allow us match their current responses to their past surveys. The measures for the current study appeared in the middle of the survey, and began by asking respondents about family demographic questions including whom they lived with as well as their primary caregivers' marital status and age. Subsequently, participants were asked to respond to items that asked about the quantity of support that they provided to their identified caregivers and their satisfaction with the amount of support that was provided. Participants were then asked about the quantity of support that they had received from their specified caregiver and the satisfaction with the amount of support that they had received. This process was repeated for a second nominated caregiver.

Afterwards, participants answered questions pertaining to filial maturity, filial responsibility and filial obligation.

In order to thank participants for their continued support of this project, each participant was able to select a \$20 voucher of their choice at the end of the survey, as well as being automatically entered into a prize draw.

**Data analysis**

The Time 4 data was first collated and matched to participant responses in the Time 3 data. Two participants who did not respond to any of the questions pertaining to provision and receipt of support from a primary caregiver were removed listwise from the dataset. A missing values analysis (MVA) using expectation maximisation with 50 iterations was then conducted on the dataset for the variables of family dynamics, filial motives, and receipt and provision of support. Descriptive statistics showed that between 8.2% to 8.8% of the participants did not respond to the receipt and provision of support items for a second caregiver. Based on other responses, it was determined that these individuals were raised by a single parent or caregiver. All other missing data ranged between 1-2%, and observation suggested that data from these participants were completely missing at random.

After imputing the data from the MVA, a number of composite variables were created. Data for the two caregivers were aggregated such that composite variables were computed for the provision and receipt of each support type. For single caregivers, data from the one caregiver was used. Additionally, aggregate variables for ‘giving’ and ‘receiving’ support were created which combined the provision and receipt data for both caregivers across all support types for the purposes of the path analysis. This approach is defensible because the current analyses were not performed to distinguish between different types of caregivers (e.g., mother, father, grandparent, etc.), and instead they were designed to describe overall dynamics occurring within the family unit.

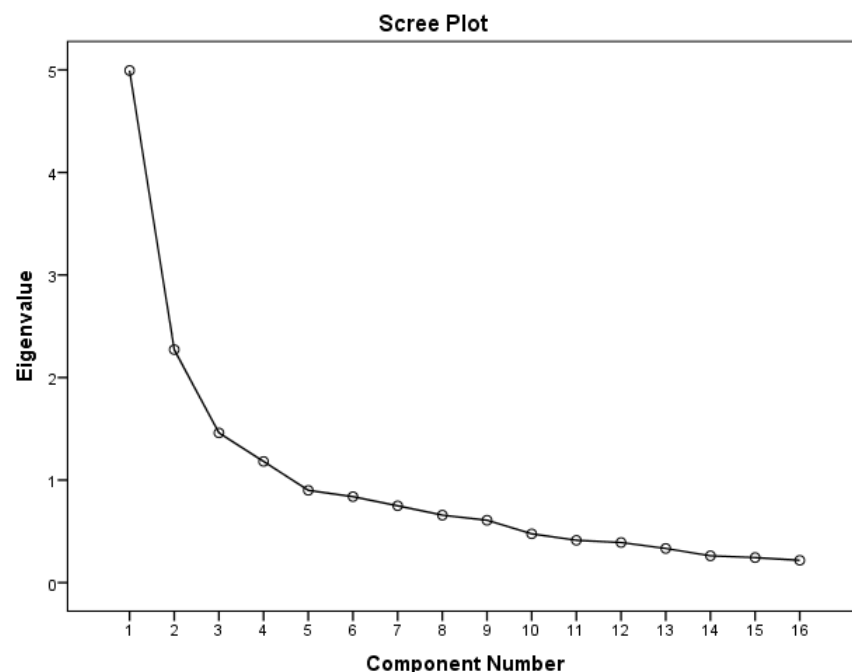
**Results**

The first goal of the study was to create and test a new measure of filial motives. The second was to use this measure in a residualised path model to determine how it mediated the relationship between family climate in adolescence and the subsequent provision of support. In line with this, the results section will relate the testing of the filial motives measure before communicating results regarding each of the hypotheses posed.

### Factor analysis

Exploratory and Confirmatory Factor Analyses (EFA and CFA respectively) were conducted using SPSS principal component analysis in the first case, and structural equation modelling in Amos (associated with SPSS) in the second case. The dataset was first split into exploratory and confirmatory analysis datafiles of 169 participants each using a filter variable based on a random sampling of cases.

An initial exploratory PCA with varimax rotation, 25 iterations and suppression of coefficients smaller than .30 was conducted on the 16 filial motive items for the exploratory sample. This PCA yielded a solution which suggested between 2 to 4 factors would be an optimal solution based on perusal of the scree plot (Figure 1). The size of the eigenvalues, in order, were 5.00, 2.27, 1.46 and 1.18, and the percentage of variance explained by each factor was 31.2%, 14.2%, 9.1% and 7.4% respectively.



**Figure 1.** Scree plot from PCA on the exploratory sample

The Cronbach's alpha for a single factor solution was  $\alpha = .79$ . Cronbach's alpha values for each component within the two, three and four factor solutions can be found in Table 1. The two factor, three factor and four factor solutions proposed by PCA analyses were



tested using CFA requesting maximum likelihood estimation. Latent factors were allowed to covary.

In order to ascertain the most appropriate number of factors for the model, a Monte Carlo PCA for parallel analysis (Watkins, 2000) was computed entering 16 variables, 169 participants and 50 repetitions. This analysis indicated that normative eigenvalue thresholds for the first four factors in order were 1.57, 1.45, 1.34 and 1.26 respectively. This analysis indicated that the first three factors extracted using PCA for the exploratory dataset met the acceptable threshold, whereas the fourth factor (PCA eigenvalue = 1.18) did not, lending support for a three factor solution. In order to be thorough, CFA using four, three, and two factor solutions were conducted and their results are reported below.

A CFA based on the four factor solution was run, which yielded poor model fit indices ( $\chi^2(98) = 250.34$ ,  $p < .001$ , ratio of chi-square/df = 2.55; NFI = .769; IFI = .845; CFI = .842; RMSEA = .096, 90% CI [.082, .111]; and Hoelter's critical N = 82 at the .05 level).

The two factor model was run without items 14 and 15 as the EFA indicated that they were double-loaded. The model exhibited poor model fit indices ( $\chi^2(76) = 268.66$ ,  $p < .001$ , ratio of chi-square/df = 3.54; NFI = .701; IFI = .766; CFI = .761; RMSEA = .123, 90% CI [.107, .139]; and Hoelter's critical N = 61 at the .05 level).

The three factor model was run with 15 items, excluding item 14 (see Table 1) due to its moderate and near-equivalent loadings on factors one and three. Model fit indices were also poor ( $\chi^2(76) = 249.86$ ,  $p < .001$ , ratio of chi-square/df = 2.87; NFI = .748; IFI = .820; CFI = .816; RMSEA = .106, 90% CI [.090, .121]; and Hoelter's critical N = 74 at the .05 level).

**Table 1.**

The two, three and four factor solutions of the PCA with varimax rotation for the exploratory sample.

#		2 factor solution		3 factor solution			4 factor solution			
		C1	C2	C1	C2	C3	C1	C2	C3	C4
	$\alpha$	.86	.65	.84	.78	.65	.79	.78	.79	.65
1	My parents increasingly respect what I have to say/my opinion	<b>.73</b>		<b>.77</b>			.42		<b>.75</b>	
2	My parents see me as a person who they can turn to for support	<b>.73</b>		<b>.73</b>			.36		<b>.77</b>	
3	To spend time with my family	<b>.74</b>		<b>.72</b>			<b>.78</b>			
4	To be available to family members when they need help	<b>.73</b>		<b>.75</b>			<b>.83</b>			
5	To satisfy my family's needs even when my own needs are different	<b>.53</b>		<b>.52</b>			<b>.58</b>			
6	I feel I should support my parents financially	<b>.53</b>			<b>.84</b>			<b>.84</b>		
7	I think that it is my duty to take care of my parents	<b>.66</b>		.32	<b>.74</b>		.31	<b>.73</b>		
8	I feel I should offer my parents my advice and guidance	<b>.60</b>			<b>.73</b>			<b>.73</b>	.34	
9	I feel I should help my parents out around the house and with running errands	<b>.62</b>		.39	<b>.55</b>		.44	<b>.54</b>		
10	To satisfy my own needs when my family's needs are different		<b>.67</b>			<b>.70</b>				<b>.75</b>
11	To spend time doing what I want, away from my family		<b>.64</b>			<b>.65</b>				<b>.66</b>
12	To make choices for myself regardless of my parents' views		<b>.80</b>			<b>.80</b>				<b>.82</b>
13	To live by myself as soon as I can		<b>.59</b>	-.39		<b>.53</b>	-.45			<b>.48</b>
14	As I grow older, my parents seem less like authority figures and more like equals	<b>.47</b>	.37	.45		.42			<b>.82</b>	
15	To consult with my parents before making decisions	<b>.50</b>	-.37	<b>.55</b>		-.32	<b>.50</b>			-.32
16	If my parents need help, I will always be there	<b>.78</b>		<b>.76</b>	.32		<b>.68</b>		.36	

**Note.** Items in bold reflect which component the item loaded on the strongest, as well as informing which items were considered as part of the factor for the Cronbach's alpha value.

A technique that often leads to better focused factor structures is to remove poor loading items. To prune the three factor model, the items which initially loaded in the PCA on more than one factor were removed. The item "as I grow older, my parents seem less like authority figures and more like equals" was removed as it loaded equally on two factors (see Table 1). "To consult with my parents before making decisions" was removed from component one as the corrected item-total correlation for this item was low (.45), with a marginal improvement in the Cronbach's alpha if the item was deleted. The item "to live by myself as soon as I can" was removed due to its low corrected item total correlation of .40 coupled with a low standardised regression weight in the three factor model. Its removal led to a minor decrease to the Cronbach's alpha of the factor from .69 to .68. Lastly, the item "if my parents need help, I will always be there" was removed due to its similarity to the more strongly loading item "to be available to family members when they need help", and due to the significant improvement in the model after its removal. Despite low internal reliability for factor 3 including items 10 to 13, it was the only factor for which items remained constant regardless of the number of factors extracted. Therefore, it appeared to have value and was retained.

The final model contained 12 items separated into three factors (see Table 2); factor 1 was named "interdependence" (5 items) as it included items pertaining to familism, being available to provide support and expressing mutual respect to others. Factor 2 was named "duty" (4 items) due to items regarding the intention to provide support, and the item "I think that it is my duty to take care of my parents". Factor 3 was named "independence" (3 items) as items described making autonomous decisions irrespective of other's wishes. The CFA model based on the exploratory dataset showed adequate model fit for most indices ( $\chi^2(50) =$

93.9,  $p = .001$ , ratio of chi-square/df = 1.88; NFI = .863; IFI = .931; CFI = .929; RMSEA = .072, 90% CI [.049, .095]; and Hoelter's critical N = 121).

**Table 2.**

Factor loadings and Cronbach's alpha values for the three factor model as indicated by the CFA on the exploratory sample.

#		Factor loadings		
		Interdependence	Duty	Independence
	$\alpha$	.80	.78	.65
1	My parents increasingly respect what I have to say/my opinion	.54		
2	My parents see me as a person who they can turn to for support	.56		
3	To spend time with my family	.83		
4	To be available to family members when they need help	.81		
5	To satisfy my family's needs even when my own needs are different	.51		
6	I feel I should support my parents financially		.73	
7	I think that it is my duty to take care of my parents		.75	
8	I feel I should offer my parents my advice and guidance		.67	
9	I feel I should help my parents out around the house and with running errands		.60	
10	To satisfy my own needs when my family's needs are different			.66
11	To spend time doing what I want, away from my family			.54
12	To make choices for myself regardless of my parents' views			.68

**Note.** Coefficients smaller than .30 are not shown.

The three factor solution was then tested on the confirmatory dataset which yielded better model fit for most indices relative to the exploratory dataset ( $\chi^2(50) = 88.5, p < .001$ , ratio of chi-square/df = 1.77; NFI = .872; IFI = .940; CFI = .938, RMSEA = .068, 90% CI [.044, .090]; and Hoelter's critical N = 129 at the .05 level). On the basis of these results, the three factor solution was accepted, and subsequent analyses was based on this factor structure.

### **Reliability analyses**

Cronbach's alpha was used as a measure of the internal consistency of the factors used in the current study. Cronbach's alpha for the filial motive factors of interdependence and duty were good ( $\alpha = .80, \alpha = .78$  respectively) and marginally acceptable for independence ( $\alpha = .65$ ). Internal consistency for the provision of support to primary caregivers was good ( $\alpha = .75$ ), as was the internal consistency for the receipt of support from primary caregivers ( $\alpha = .87$ ).

### **Descriptive statistics**

Means for the four family climate variables measured when the participants were aged 13-17 years were reasonably high, ranging between  $M = 3.45$  (family cohesion) and  $M = 4.24$  (family identity) on a scale from 1 to 5. Overall, participants felt that their families functioned fairly well as an interdependent family unit, and felt a strong sense of family membership. Additionally, the family experienced a moderate amount of shared activities ( $M = 3.74, SD = 0.80$ ), and were moderately encouraging of autonomous thought ( $M = 3.74, SD = 0.88$ ). Means for the three factors of filial motives also fell above the midpoint, with participants endorsing the importance of the family the most ( $M = 3.91, SD = 0.58$ ). Participants somewhat agreed with a felt duty and intention to support parents ( $M = 3.49, SD = 0.67$ ) and lastly a sense of independence away from parents ( $M = 3.55, SD = 0.68$ ).

**Table 3.**

Means and standard deviations (in parentheses) for family climate variables (measured at Time 3) and the three filial motive factors identified (measured at Time 4).

	Mean (SD)
Family cohesion	3.45 (.85)
Family autonomy	3.74 (.88)
Family identity	4.24 (.94)
Family mutual activities	3.74 (.80)
Interdependence	3.91 (.58)
Obligation	3.49 (.67)
Independence	3.55 (.68)

Descriptive statistics for the provision of support suggests that, overall, participants received more support than they provided to their caregivers. Participants reported receiving all types of support from caregivers at a frequency greater than the midpoint, with a narrow range between ‘sometimes’ and ‘often’. On the other hand, there was more variability in the types of support participants provided to their parents. Whereas participants provided similar amounts of guidance ( $M_{provision} = 3.32$ ,  $M_{receipt} = 3.32$ ) and a slightly higher level of practical assistance ( $M_{provision} = 3.49$ ,  $M_{receipt} = 3.23$ ), they only ‘sometimes’ provided comfort or advice (see Table 4). The greatest level of discrepancy was for financial assistance, where participants were more likely to report ‘never’ or ‘rarely’ giving financial help to their caregivers ( $M_{provision} = 1.69$ ), while also reporting receiving financial support ‘sometimes’ or ‘often’ ( $M_{receipt} = 3.43$ ).

**Table 4.**

Means and standard deviations (in parentheses) for the self-reported provision and receipt of support from caregivers for all participants.

Support type	Given	Received
Financial	1.69 (.83)	3.43 (1.09)

Comfort	2.93 (.92)	3.36 (.95)
Advice	2.90 (.92)	3.60 (.97)
Guidance	3.32 (.87)	3.32 (1.02)
Practical help	3.49 (.96)	3.23 (1.12)

Moderate, significant positive correlations were evidenced amongst all the family climate variables at  $p < .01$  (see Table 5), with family mutual activities and family cohesion having the largest association ( $r = .67, p < .01$ ). These results suggest that family climate variables are interrelated, for instance, participants who rated their families as high on cohesion also rated their families similarly on the other three family climate variables.

Secondly, a moderate, significant positive relationship was found between interdependence and duty ( $r = .50, p < .01$ ), indicating that participants who were high on interdependence were also likely to endorse obligation. Independence showed no correlation with interdependence ( $r = -.07, p = .20$ ) and only a slight, negative significant association with a sense of duty ( $r = -.13, p < .05$ ). Individuals who reported a strong sense of independence were slightly less likely to report a sense of obligation.

Lastly, and as would be expected, support provision and receipt shared a significant, moderate positive correlation ( $r = .61, p < .01$ ), indicating an interrelationship whereby participants who provided more support also received more. Interestingly, the strongest correlations evidenced for provision and receipt of support were with the filial motive of interdependence ( $r_{provision} = .38, p < .01$ ;  $r_{receipt} = .51, p < .01$ ), followed by a sense of duty ( $r_{provision} = .32, p < .01$ ;  $r_{receipt} = .36, p < .01$ ). Additionally, the more independent one feels, the lower their frequency of support provision and receipt ( $r_{provision} = -.12, p < .05$ ,  $r_{receipt} = -.16, p < .01$ ). Further, whereas receiving support from parents was significantly and positively correlated to all variables except independence (see Table 5), providing support yielded relatively weaker correlations with all variables, and was not significantly related to Time 3 family identity or engagement in mutual activities.

**Table 5.**

Correlations between all variables

	Cohesion	Autonomy	Identity	Mutual Activities	Interdependence	Duty	Independence	Provision
Cohesion	-							
Autonomy	.61**	-						
Identity	.64**	.62**	-					
Mutual Activities	.67**	.55**	.48**	-				
Interdependence	.31**	.28**	.30**	.15**	-			
Duty	.25**	.20**	.22**	.20**	.50**	-		
Independence	-.06	.05	-.13*	.02	-.07	-.13*	-	
Provision	.17**	.15**	.10	.10	.38**	.32**	-.12*	-
Receipt	.27**	.33**	.29**	.29**	.51**	.36**	-.16**	.61**

**Note:** \* significant at  $p < .05$ , \*\* significant at  $p < .01$ .



The family climate variables showed significant, weak positive relationships with interdependence and duty (see Table 5). The strengths of all correlations were stronger with interdependence than with duty, except for family mutual events ( $r = .20, p < .01$ ). Interdependence showed relatively strong correlations with family cohesion ( $r = .31, p < .01$ ), family autonomy ( $r = .28, p < .01$ ) and family identity ( $r = .30, p < .01$ ). Independence was, at best, only weakly associated with family climate variables, with a weak, significant negative association with family identity ( $r = -.13, p < .05$ ), indicating that as independence increased, there was a slight tendency for lower family membership.

The receipt of support showed stronger relationships with family climate variables in adolescence compared to the provision of support (see Table 5). This association suggests that a more positive family climate in adolescence was related to greater frequency of receiving support in emerging adulthood, but it manifested a much weaker relationship with the frequency that support was provided to parents, with the provision of support unrelated to feelings of family identity and engagement in mutual family activities in adolescence.

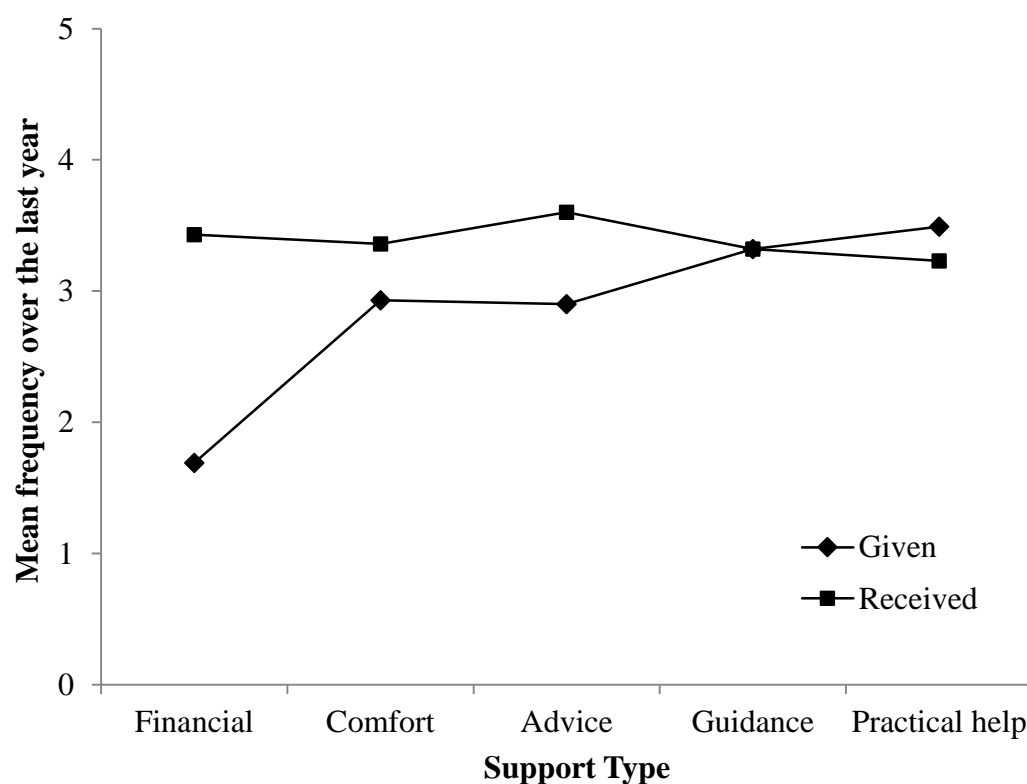
### **Hypotheses 1 and 3: Support type varying by gender and support direction**

A mixed design repeated measures ANOVA was conducted with the entire sample to test the interactions between within-subjects variables of support direction (given or received) x support type (financial, emotional, guidance, advice and practical assistance) with the between-subjects variables of gender and cohort. The dependent variable was support frequency.

Results indicated that the interaction between gender and cohort was not significant ( $F(2, 332) = 1.27, p = .28$ , partial  $\eta^2 = .01$ ), and neither were the main effects for gender ( $F(1, 332) = 1.70, p = .19$ , partial  $\eta^2 = .01$ ) and cohort ( $F(2, 332) = 1.75, p = .18$ , partial  $\eta^2 = .01$ ).

A significant interaction between direction and support type was obtained ( $F(3.28, 1088.37) = 224.40, p < .001$ , partial  $\eta^2 = .403$ ; see Figure 2), such that frequency of support varied as a function of support type as well as whether it was being provided or received. A

significant main effect was found for the direction of support ( $F(1, 332) = 166.94, p < .001$ , partial  $\eta^2 = .335$ ). Results indicated that the assumption of sphericity was violated for the main effect of support type. In this case, as the Greenhouse-Geisser value was above .75, a Huynh-Feldt correction was used. A significant main effect was found for support type ( $F(3.28, 1088.47) = 118.68, p < .001$ , partial  $\eta^2 = .263$ ). The hypothesis that parents would provide more financial support, whereas children would provide more practical and emotional support was partially supported. Post-hoc paired-samples *t*-tests revealed that parents provided more support to their children at a statistically significant level in the domains of financial ( $t(337) = 24.24, p < .01$ ) and emotional assistance ( $t(337) = 10.11, p < .01$ ) as well as in giving advice ( $t(337) = 13.65, p < .01$ ). Children provided more practical assistance to their parents ( $t(337) = 4.08, p < .01$ ), and no difference was noted for the amount of guidance exchanged.



**Figure 2.** The means for the frequency of support types provided to and received from caregivers

Significant interactions were also found between support type and gender ( $F(3.28, 1088.47) = 3.22, p < .05$ , partial  $\eta^2 = .01$ ), such that females received more support than their male counterparts. When this result was examined using a post-hoc independent samples t-test, it was found that females only received significantly more emotional support from their parents compared to their male counterparts ( $t(336) = 2.16, p < .05$ ). Post hoc independent samples t-tests showed that females and males did not significantly differ in their provision of financial support, guidance and practical assistance, although females provided significantly more emotional support ( $t(336) = 3.37, p < .01$ ). Therefore, these findings provide partial support for the hypothesis that females would provide more support than their male counterparts, with females only providing more emotional support than their male counterparts.

### **Hypothesis 2: Relationship between cohort and filial motives**

A one-way ANOVA was conducted in order to investigate whether endorsement of the three factors of filial motives differed by cohort. A significant difference was found for the factor of interdependence ( $F(2, 335) = 6.77, p < .01$ ), but not for the factors of duty or independence. This result provided partial support for the hypothesis that older cohorts would manifest the strongest endorsement of filial motives, with post hoc Tukey's tests indicating that endorsement of interdependence for the youngest cohort ( $M = 3.77$ ) was significantly lower in comparison to the means for the two older cohorts ( $M = 3.97, M = 4.02$  respectively), although the means of the two older cohorts did not significantly differ.

**Table 6.**

Means for filial motives by cohort

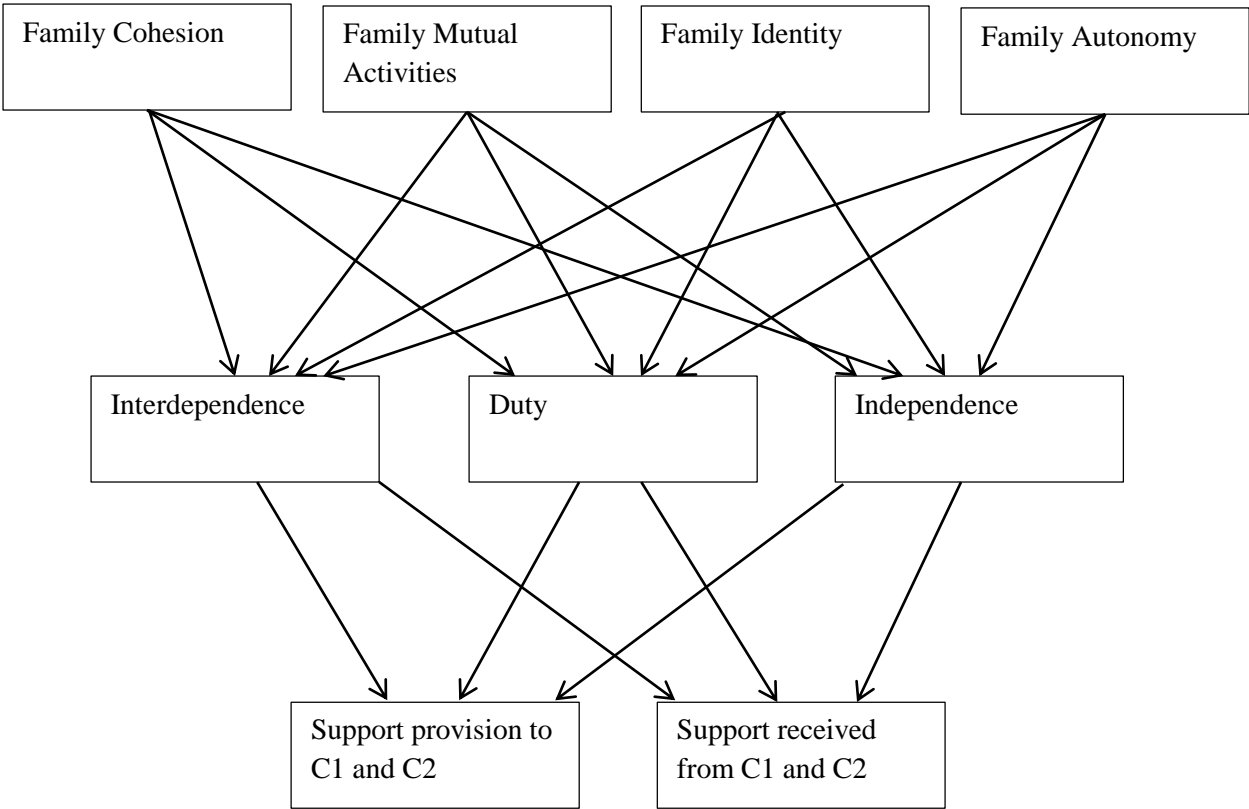
	Interdependence	Duty	Independence
17-18 year olds	3.77 <sub>a</sub>	3.49 <sub>a</sub>	3.51 <sub>a</sub>
19-20 year olds	3.97 <sub>b</sub>	3.49 <sub>a</sub>	3.51 <sub>a</sub>
21-22 year olds	4.02 <sub>b</sub>	3.50 <sub>a</sub>	3.62 <sub>a</sub>

**Note.** Reading vertically, means with different subscripts were significantly different,  $p < .05$ .

### Hypotheses 4 and 5: Path analysis

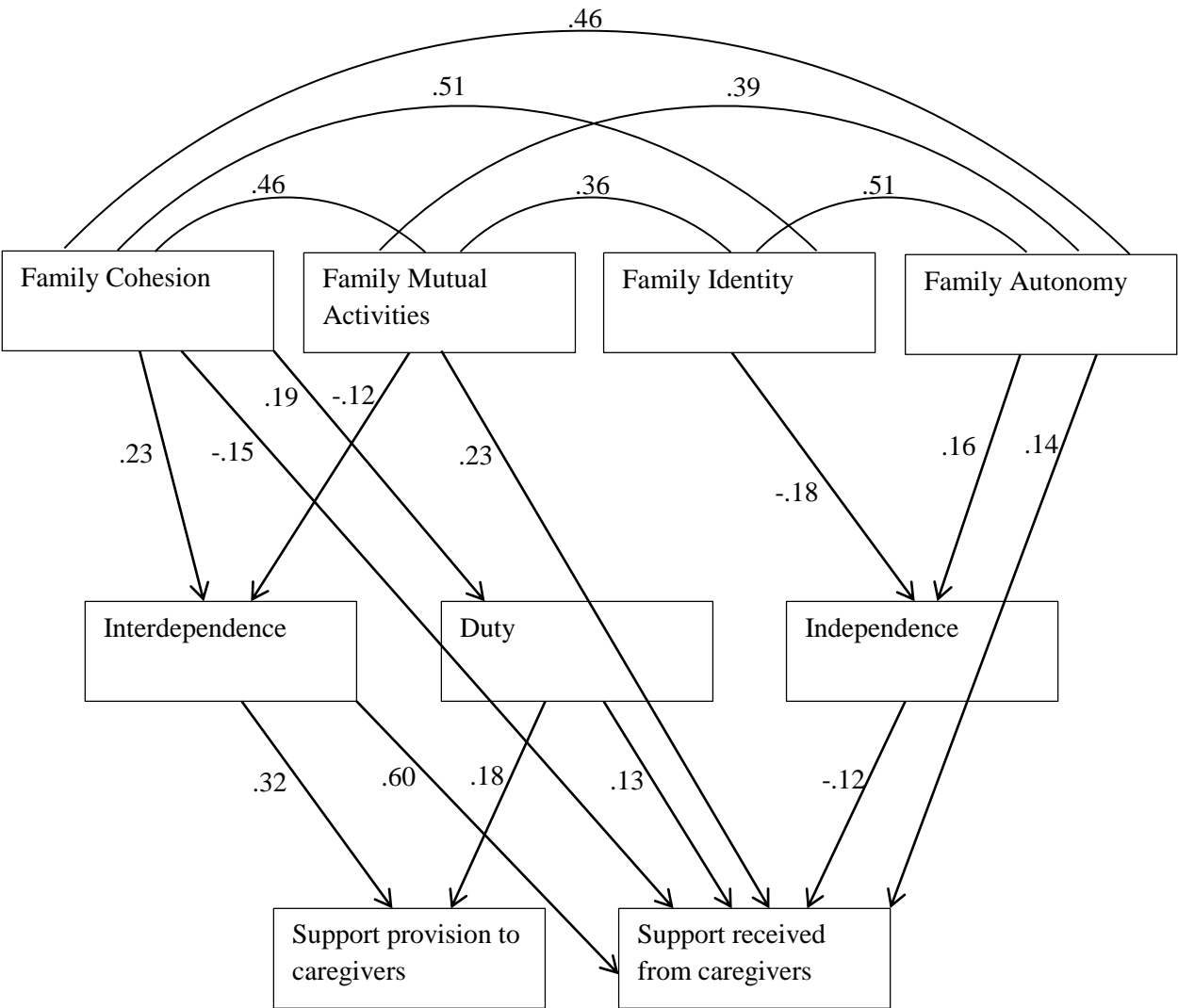
A path analysis was conducted in order to test the predictive relationships over time among family climate in adolescence at Time 3, and filial motives and the provision and receipt of support in emerging adulthood at Time 4. In particular, we predicted that family climate would predict subsequent filial motives, and that these motives would predict levels of the exchange of support. In previous research (Jose & Pryor, 2010), high correlations between the family climate variables have led them to be combined (with the exception of family autonomy) into a single aggregate variable of family connectedness. However, in the present case, it was decided to use the separate family climate variables due to the unique relationships found between them with other variables in the model.

The proposed model (see Figure 3) described indirect relationships whereby filial motives mediated the relationship between the family dynamic variables of autonomy, identity, cohesion and mutual activities measured at Time 3 and the provision and receipt of support to primary caregivers at Time 4. In other words, this model predicted that family dynamic factors from Time 3 would predict filial motives, which would in turn influence the amount of support provided to and received from caregivers.



**Figure 3.** Proposed path model showing Time 4 filial motives mediating the relationship between family dynamic variables at Time 3 and supportive exchanges at Time 4.

The proposed fully saturated path model (see Figure 3) was constructed using structural equation modelling in Amos (Arbuckle, 2011). The model was then pruned by removing all non-significant paths and by allowing covariances between residuals of variables at a given level of the model. The final model yielded excellent model fit indices ( $\chi^2(12) = 15.73$ ,  $p = .20$ , ratio of chi-square/df = 1.31; NFI = .986; IFI = .997; CFI = .996, RMSEA = .030, 90% CI [.000, .067]; and Hoelter’s critical N = 451 at the .05 level). Figure 4 illustrates the pruned path analysis model of the statistically significant pathways. Notably, these model fit indices supported the hypothesis that family climate in adolescence would precede perceived obligation, which in turn would predict support behaviour in emerging adulthood.



**Figure 4.** Path model showing how family dynamic variables at Time 3 were mediated by Time 4 filial values upon support provided and received at Time 4.

**Note.** Only significant ( $p < .05$ ) pathways are shown. Numerical values (beta weights) for each relationship are presented directly to the left of the line.

In order to investigate the relative strength and significance of specific indirect pathways between family dynamic variables and the provision and receipt of support, a bootstrapped maximum likelihood analysis was performed with 300 samples with a 95% confidence interval. Amos estimands (Amos Development Corporation, 2010) were used to calculate the proportional strength of each indirect pathway (see Table 7).

**Table 7.**

Statistical output for all pathways in Figure 3

#	IV	MedV	DV	estimate		a*b	se	95% CI		p
				a	b			Lower	Upper	
1	Cohesion		Receipt	-.146			.057	-.263	-.029	.011
2	Cohesion	Interdependence	Receipt	.230	.601	.138	.035	.069	.207	.005
3	Cohesion	Duty	Receipt	.192	.132	.025	.013	.006	.066	.021
4	Cohesion	Interdependence	Provision	.230	.324	.074	.023	.036	.126	.006
5	Cohesion	Duty	Provision	.192	.176	.034	.013	.015	.065	.003
6	Mutual Activities		Receipt	.229			.056	.116	.344	.007
7	Mutual Activities	Interdependence	Receipt	-.119	.601	-.072	.031	-.138	-.008	.010
8	Mutual Activities	Interdependence	Provision	-.119	.324	-.039	.018	-.087	-.006	.009
9	Identity	Independence	Receipt	-.182	-.119	.022	.010	.006	.046	.005
10	Autonomy		Receipt	.138			.049	.041	.243	.008
11	Autonomy	Independence	Receipt	.160	-.119	-.011	.007	-.028	-.001	.042

**Note.** Estimate 'a' is a measure of the effect from the IV to the MedV.  
 Estimate 'b' is a measure of the effect from the MedV to the DV.  
 The estimate of a direct effect appears in the middle of estimates 'a' and 'b'.  
 Estimate 'a \* b' is an estimate of the size of the indirect effect, if applicable.

**Support Provision.** No significant direct pathways were noted between family climate variables and the provision of support. Instead, filial motives of interdependence and duty played a key role in mediating these relationships. Specifically, filial motives of interdependence and duty at Time 4 were found to mediate the relationship between family cohesion and mutual activities in adolescence and the provision of support by caregivers in emerging adulthood. The indirect pathway from family cohesion to support provision through interdependence was stronger (standardised indirect effect = .074, se = .023, 95% CI [.036, .126]) than the pathway mediated by duty (standardised indirect effect = .034, se = .013, 95% CI [.015, .065]). When the difference between the relative strengths of the two significant pathways was tested using estimands, it was found that despite the observed difference in strength, the strength of these two pathways were not statistically different from each other (95% CI [-.009, .094]). Further, the indirect pathway from family cohesion through interdependence was still statistically significant even after partitioning out the variance of the impact of the predictive relationship between family mutual activities and support provision mediated by interdependence.

**Support Receipt.** Family cohesion evidenced a negative, direct predictive relationship to the frequency that support was received from caregivers (standardised direct effect = -.146, se = .057, 95% CI [-.263, -.029]; see Table 7), indicating that high family cohesion in adolescence predicted less support received in emerging adulthood. Family mutual activities positively predicted the frequency that support was received, such that greater engagement in mutual activities led to receiving more support from caregivers five years later (standardised direct effect = .229, se = .056, 95% CI [.116, .344]).

The relationship between family autonomy in adolescence and support received from caregivers evidenced both positive and negative pathways. A sense of autonomy granting in adolescence was positively predictive of the frequency of support received (standardised indirect effect = .138, se = .049, 95% CI [.041, .243]). However, family autonomy was also



predictive of independence, which decreased the frequency that support was received (standardised indirect effect =  $-.011$ ,  $se = .007$ , 95% CI  $[-.028, .001]$ ). In addition, a stronger sense of family identity in adolescence had a negative influence on the amount of independence desired five years later. It was found that the indirect pathway from family identity to support received was significantly stronger than the indirect pathway from family autonomy to support received (95% CI  $[-.082, -.011]$ ).

Indirect positive predictive relationships were also found between family cohesion and support received. This relationship was mediated by both interdependence (standardised indirect effect =  $.138$ ,  $se = .035$ , 95% CI  $[.069, .207]$ ) and a sense of duty (standardised indirect effect =  $.025$ ,  $se = .013$ , 95% CI  $[.006, .066]$ ). When the strength of these effects was disentangled, it was found that the positive mediated pathway through interdependence was significantly stronger than the mediated pathway through duty (95% CI  $[.037, .192]$ ). Specifically, when the relationship between family cohesion and support provision was mediated through interdependence, this increased the frequency that support was received.

The hypothesis that close affectionate ties in adolescence would foster a sense of the centrality of family (filial motives) in emerging adulthood, and that this would influence the provision of support, was supported. Specifically, the strongest pathway was from family cohesion to support provision through the mediator of interdependence.

### **Discussion**

The major aims of the current study were twofold. The first aim was to investigate the influence of family climate in adolescence on the endorsement of filial motives and on the exchange of support in emerging adulthood. In order to effect this analysis, the second aim was to construct a filial motives measure that tapped the concepts of egalitarianism, familism and the separation of attitudes, values and beliefs from intentions. This thesis reports the results of these two endeavours. This discussion will touch upon the bidirectionality in the exchange of support, discuss the new filial motives measure, and lastly synthesise the

findings on the determinants of supportive exchanges with extant research before reflecting on the generalizability and limitations of the study.

### **The Bidirectional Exchange of Support**

The current results are consistent with past literature indicating that a genuine exchange of support occurs between parents and their children (Rossi & Rossi, 1990). Findings indicated that although parents provided the majority of financial support in this period of emerging adulthood, children provided more practical assistance whilst a similar level of guidance was exchanged (Bucx et al., 2012; Rossi & Rossi, 1990). However, the finding that parents provided more emotional support to their children was inconsistent with past literature (Rossi & Rossi, 1990). These results indicate that there is no firm answer regarding to whom the titles of “net provider” or “net receiver” belong. Instead, it would appear that these titles were largely dependent upon support type.

Additionally, it is pertinent to note that supportive exchanges were identified in the current study to flow bi-directionally within the developmental period of emerging adulthood. In previous literature, this developmental period had typically been associated with increased dependence upon parents for support (Fingerman et al., 2012; Hillcoat-Nallétamby & Dharmalingam, 2006; Johnson & Benson, 2012). In conjunction with this continued dependence, emerging adulthood was also conceived as the age period before support provision was anticipated to occur due to ‘filial immaturity’ (Blenkner, 1965).

However, the finding that intergenerational support is exchanged, albeit at different frequencies across different support types, is in contrast to the impression of emerging adulthood as a period of increased dependence. It appears that the notion of the dependent emerging adult has been so deeply ingrained in societal expectations (Zelizer, 1985) that previous and current indications that supportive exchanges do occur in emerging adulthood have often been overlooked. In line with these ideas, the present findings suggest three important points. Firstly, attention must be drawn to the fact that the exchange of support

between parents and their emerging adult children is not a zero-sum situation, whereby a high level of financial dependence upon parents does not preclude the possibility of offspring providing other types of support.

Following on from this, the results reported here should encourage future researchers to move away from considering ‘support’ as a single faceted dynamic and instead approach the exchange of support from a multifaceted perspective. A multifaceted conceptualisation of support would allow the appreciation that exchanges do not need to be equal and equivalent (Rossi & Rossi, 1990), and instead they appear to be based on the availability of resources one has to share, and the needs of the other (Hillcoat-Nallétamby & Dharmalingam, 2003). This conception of exchange is particularly relevant when considering the exchange of financial assistance. Parents typically have little practical and psychological need for financial assistance from their children, but often are in a position to provide this type of support to their children if required. At the same time, emerging adults are typically yet unable to return this particular class of support. In this case, as the base rate of financial provision from offspring is so low, researchers should consider any financial support provided to parents as being significant. In addition, other types of support which may be more beneficial to parents, and are indeed found to be provided to parents more frequently (such as practical assistance) should be more thoroughly investigated. In light of the findings of the current study, it can be argued that future research must conceptualise supportive exchanges in a way that takes into consideration the synergistic relationship between the upward and downward flow of support between parents and children. Further, the specific resources that each party possesses relevant to the requirements of the other party should be taken into consideration such that complementary exchanges across different support types can be appreciated.

In conjunction with the first two points, the result that supportive exchanges between parents and emerging adult children do occur requires us to re-evaluate what ‘exchange’

entails. Previous indications that parents and children are engaged in a low level of exchange (Hogan et al., 1993) may have been reached due to a poor operationalisation of what is expected in a ‘bidirectional exchange’ of support. Specifically, previous studies have been unclear in regards to whether a bidirectional exchange is only implied when support is reciprocated at an equal rate, or within the same support type. Further, there does not appear to be any study which has specified a “minimum threshold” of support, which, if surpassed, would be indicative of a significant contribution of support. The inadequate operationalization of exchange has meant that the upward flow of support from offspring to parents has been considered trivial in comparison to the downward flow of support from parents to children.

The trivialisation of support provided to parents by their children and poor operationalization of the exchange process lead us to consider other key issues in the literature, in particular the stagnation in pursuing new avenues of research. The present study represents a move towards suggesting links that have not previously been made and to identify pathways of influence in how children come to support their parents from a developmental family systems perspective. The path model and filial motives measure are proposed as ways to highlight important determinants of supportive exchanges rooted in both historical and current filial motives. Further, the filial motives measure offers a novel way from which to consider filial norms from a Western perspective.

### **The Filial Motives Construct**

The filial motives measure drew on the concepts of egalitarianism, familism and the separation of attitudes, values and beliefs from intentions, with the aim to construct a measure that would have construct validity within a Western sample. To this end, we synthesised multiple contemporary Western conceptualisations of filial motives to construct a measure focussed on the endorsement of supportive relationships based on aspects of altruism, affection and contact.

The filial motives measure derived from the present dataset contained three factors composed of: a) interdependence (centrality of the family and the degree that participants perceived the parent-child relationship as egalitarian and mutually supportive); b) duty (obligation and intention to provide particular types of support); and c) independence (the degree to which emerging adults put their own needs first). The path model involving this filial motives measure showed that family cohesion in adolescence appeared to be the family climate variable most strongly predictive of supportive exchanges in emerging adulthood. The interdependence factor, which contained the notion of family centrality, was found to be the strongest mediator of the relationship between family cohesion in adolescence and both the provision and receipt of support in emerging adulthood.

This section will discuss interrelationships between interdependence, duty and independence from a filial maturity perspective, before an argument regarding the temporal proximity of these factors to actual support provision is proposed.

**Interdependence and Independence.** The factor of interdependence appeared to measure the centrality of family and engaging in an egalitarian, mutually supportive and respectful relationship whereas independence appeared to tap the crucial development of autonomy and self-sufficiency that occurs during this part of the life course (Arnett, 2000). Interestingly, there was no association between the development of both interdependence and independence concurrently. One might naively expect a negative relationship, but this type of association was not obtained. The nonsignificant relationship may indicate that these two motives may be able to develop concurrently whereby increases in one does not preclude development of the other, which supports previous conceptualisations of filial maturity.

Blenkner (1965) initially posited that filial maturity was a process that developed across the lifespan, which required offspring to view their aging parent as a human with limitations but also in need of support. Despite creating three items in the current study to

measure the shift in the parent-child relationship from a hierarchical to an egalitarian organisation, the three items used did not cohesively form a single factor of 'filial maturity'.

However, it is notable that these two factors did conform to a previous conceptualisation of filial maturity as proposed by Birditt et al., 's (2008) filial maturity scale. This scale was developed based on Blenkner's (1965) initial conceptualisation which conceived that the factor structure of filial maturity was dyadic in nature, containing aspects of both continuing individuation ('distancing') as well as mutual dependency and affection ('comprehending'). The items and definition of these two factors are similar to how independence and interdependence have been construed in the current study, respectively. Further evidence for a possible congruence between independence and the 'distancing' factor come from Birditt et al., 's (2008) finding that distancing was associated with greater autonomy from parents. Similarly, autonomy granting in adolescence was predictive of independence five years later in this study. Comprehending in their study was associated with a greater degree of closeness and positive relationship quality, similar to the association found in the current study between family cohesion and interdependence.

Therefore, it is suggested that the filial motives measure captures the manifestation of filial maturity within the developmental period of emerging adulthood. As the results indicate that interdependence is strongly and positively linked to the current provision of support it can also be surmised that the interdependence aspect of filial maturity may be a strong indicator of current motivation to provide support from offspring to their parents.

**Interdependence and Duty.** Another notable feature of the filial motives measure is its separation of interdependence from duty. These two concepts have often been confounded in previous measurement instruments due to one factor not having been explicitly measured or due to a lack of differentiation between these two related facets of filial motives (Gans & Silverstein, 2006; Lowenstein & Daatland, 2006; Phinney et al., 2005). These issues may have contributed to the inconsistencies that were often found in regards to the relationship

between attitudinal and behavioural measures in this field of research (Stein et al., 1998). Our findings serve to address these inconsistencies, with the CFA indicating that feelings of interdependence are substantively different from feelings of duty to provide support. Specifically, this separation of factors indicates that the centrality of family and engaging in an egalitarian, mutually supportive and respectful relationship (i.e., interdependence) has a stronger influence on current supportive relationships in young adulthood than merely feeling a sense of duty to provide support.

As a sense of interdependence exerted a stronger influence on support provision and receipt compared to a sense of duty, differences between these two factors were examined and the conclusion was reached that these two factors likely highlighted two different processes pertaining to support provision. The proposed explanation is that interdependence and duty have different temporal proximities to the exchange of support, with interdependence influencing a shorter term cycle of supportive exchanges and duty driving a longer term cycle of supportive exchanges. Evidence for this argument comes from considerations of the methodology used, items within individual factors, and the relationship between filial motives and with other variables.

On the one hand, interdependence yielded moderate, positive relationships with the receipt and provision of support. Levels of interdependence also increased with age, such that the oldest cohort manifested the strongest sense of interdependence compared to the youngest cohort, whilst duty did not evidence such a graduated increase with age. As filial motives were measured at the same time as support provision over the last year, these results may indicate that interdependence was more closely linked to a current judgment of supportive exchanges in comparison to duty. However, it is acknowledged that causation cannot be inferred based on the current cross-sectional findings, and therefore it cannot be discerned whether interdependence is an outcome of having exchanged support over the last year, or

whether it represents the values that are immediately predictive of current supportive exchanges.

On the other hand, the factor of duty may be more highly related to an intention to provide support in the future. Despite a relationship between family cohesion and duty that was similar in strength to the relationship between family cohesion and interdependence, duty had relatively weak effects on both the receipt and provision of support compared to interdependence. On inspection, items within duty appeared to combine a feeling of obligation and future intention to provide support. Therefore, one explanation for these observations may be that a sense of 'duty' is fostered by family cohesion but may be more related to a future-oriented disposition as opposed to being related to current support provision. If this is the case, the factor of 'duty' may be similar to the previously studied 'support bank' construct, which has been defined as an accumulation of indebtedness, namely the provision of resources and services to children during their youth creates accumulating feelings of obligation to provide support to their parents in the future (Silverstein et al., 2006).

**Independence and Duty.** If interdependence and duty are approached as being linked to the exchange of support at different time points, then the factor of independence and its interrelationships may add further support to the temporal proximity explanation. Specifically, the findings indicate a significant correlation between duty and independence, but no significant relationship between independence and interdependence. There did appear to be a weak relationship between duty and independence whereby if an emerging adult was more independent, they were also slightly more likely to feel a sense of duty.

From a temporal perspective, these relationships may indicate that current feelings of independence are unrelated to filial motives to support parents presently, but seem to be related to a sense of duty to support parents in future. Interestingly, this is what would be expected at this point in the lifespan from a developmental perspective (Aquilino, 2006), as



well as by the intergenerational stake hypothesis (Giarrusso et al., 2004) whereby emerging adults currently prioritise their quest for autonomy and independence above supportive exchanges with their parents. Therefore, a drive towards self-sufficiency would dictate that offspring obtain less support from their parents, but are not yet at the stage to provide support. These results seem to be congruent with the notion that duty is a forward-looking construct, as it indicates that emerging adults who currently put their own needs above their parents have an intention to support their parents in the future.

Taken together, the proposed temporal proximity explanation indicates that interdependence is a predictor of current support provision, duty is a forward-looking construct and may predict future support provision, and independence is associated with current autonomy seeking and intention to provide support in future. This explanation fits with previous conceptualisations of how filial motives and norms may operate, in many ways consistent with the developmental literature and the accumulation of a sense of indebtedness over time.

In sum, the filial motives measure is congruent with what would be expected from a Western measure of filial motives as it stresses the importance of egalitarianism, the centrality of family as a source of mutual support, and the continuing individuation process. The association between the factors alongside its' relationship to the Western conceptualisation of filial maturity indicate its utility and applicability for use in the developmental period of emerging adulthood. In conjunction with the temporal proximity perspective, the current measure may also be capable of measuring change across time.

The current explanations offered regarding independence and interdependence in the filial motives construct, as well as the temporal placement of interdependence and duty in relation to supportive exchanges requires further testing and would be a rich source to draw upon for future studies. It would be appropriate to further consider the utility of the proposed factor of duty in a Western conceptualisation of filial motives and to better disambiguate it

from factors like interdependence (the centrality of family and egalitarian relationships). More longitudinal data would be required in order to see if the current measure of duty predicted future supportive exchanges as suggested here. Lastly, the possible overlap of interdependence and duty needs further investigation, especially to examine whether a sense of duty develops concurrently with, or precedes a sense of interdependence as suggested by the temporal proximity explanation proposed.

### **Filial Motives across Cohorts**

The prediction that filial motives to support parents would increase with age was partially supported, and is particularly relevant to a nuanced understanding of how supportive exchanges occur dynamically over time. Of the three filial motives identified, only the factor of interdependence increased with age, such that interdependence was significantly weaker among 17-18 year olds compared to 19-20 year olds and 21-22 year olds. Despite endorsement of interdependence being the strongest indirect predictor of the provision of support, and the fact that endorsement of interdependence increased with age, the total amount of support provided did not significantly differ across cohorts in this study. The lack of evidence for differences in support provided across cohorts supports the synergistic hypothesis put forward by Silverstein et al. (2006) regarding ‘push’ and ‘pull’ factors of support. As Silverstein et al. (2006) posited, this outcome could result from parents of participants in the current study not yet requiring support, despite adequate motivation on behalf of their emerging adult offspring to provide support. Thus, there was no corresponding ‘pull’ factor despite adequate ‘push’ factors.

### **Determinants of the Exchange of Support**

This section will address findings regarding the determinants of the exchange of support as indicated by the path model. The model will first be considered holistically, before the receipt and provision of support are discussed separately. Previous research will be considered alongside the findings of the current study where appropriate.

Holistically, the path model created in the current study drew upon the constructs of affectual, normative and functional solidarity as proposed in the intergenerational solidarity model (Bengtson & Roberts, 1991). The aim was to extend this model by considering the relationships between these three dimensions of solidarity across time. Findings indicated that affectual solidarity measured by family cohesion was a precursor to strong bonds between offspring and their parents as shown by measures of normative and functional solidarity five years later. This indicates that a shared family history does indeed predict the presence of a mutually supportive relationship between children and parents in emerging adulthood. These findings support the intergenerational solidarity model by suggesting that dimensions of solidarity built during a joint developmental history are relevant in the maintenance of bonds between parents and their adult offspring. Further, pathways pertaining to the receipt of support indicate the continuity of the parent-child relationship across the life course by suggesting that parents who offer their adolescents a positive family climate in adolescence continue to be sources of support for their children five years later.

When observing specific pathways it was notable that there were only two significant indirect pathways that influence the *provision* of support whereas there were relatively more pathways leading to the *receipt* of support. This finding is in line with the intergenerational stake hypothesis which suggested that parents and children are differentially invested in their joint relationship. There may be more pathways to the receipt of support as parents may offer more assistance as they are more heavily invested in the wellbeing of their children. Further, the two indirect pathways emphasising the specific development of interdependence as a precursor to support provision may occur because children are more invested in seeking autonomy and independence in this developmental period. The specificity regarding variables that influence the provision of support, especially in this developmental period, only adds to the importance of understanding these unique pathways between family cohesion and provision of support.

**Receipt of Support.** In regards to the receipt of support from caregivers, engaging in mutual family activities and being granted autonomy in adolescence to make independent decisions were both related to a greater frequency of receiving support in emerging adulthood. Family cohesion, a perceived family bond characterised by engagement, co-operation and support evidenced a negative relationship to support received such that increased family cohesion in adolescence led to declines in the frequency that support was received in emerging adulthood. However, two revealing indirect pathways were found in the path model. First, family cohesion indirectly led to increased support receipt through the filial motives of interdependence and duty. The discrepancy between the direct and indirect pathways between family cohesion and the receipt of support may indicate that family cohesion, although an important precursor, may not result in the receipt of support in itself. Instead, the factor most critical in determining the frequency that support was received was the mediating motive of interdependence in the current model.

Family autonomy emerged as a family climate variable with unique associations to filial motives and the receipt of support. Endorsement of family autonomy directly predicted increased receipt of support from parents five years later. In addition, an indirect pathway through the mediator of independence suggested that autonomy granting in adolescence led to increased independence, and resultantly a decrease in the amount of support received from caregivers. The joint presence of a positive direct relationship and a negative indirect relationship to the receipt of support suggests that there may be inconsistencies in the relationship between family autonomy and support received (or a suppressor variable is involved). This paradox may be due to weaknesses in the measurement of the construct itself, but two other explanations for the indirect pathway are also considered.

First, as the model suggests, being given the choice to make your own decisions in adolescence seems to lead to a greater sense of independence and autonomy over time such that emerging adults become self-sufficient and therefore require less support from their

parents. This explanation would be considered typical of the establishment of independence that occurs in the developmental period of emerging adulthood. If this dynamic is to be considered developmentally typical, then this result would indicate that emerging adulthood represents a crucial developmental period that captures the shift from filial immaturity to filial maturity. Likewise, as suggested by the hypothesis regarding different temporal proximities of the filial motive factors, this explanation does not preclude the provision of support from children to parents later in life as so often happens.

The second explanation is that, as filial motives and support exchange were measured at the same time, we cannot infer a cause-and-effect relationship. Therefore it could also be the case that children gain self-sufficiency and independence from their parents due to having received less support from their parents. In conjunction with a possible weakness in the measurement of this construct, the further investigation of the cause-and-effect relationships among these variables is suggested.

**Provision of Support.** In regards to the provision of support to caregivers, it appeared that family cohesion was essential to the development of interdependence and duty, and that these two filial motives were related to the provision of support from emerging adults to their parents. It is important to note that the filial motive of interdependence had a stronger influence upon the frequency that support was provided to caregivers than the motive of duty.

Of note, the two indirect pathways that predicted support provision to parents were in stark contrast to the many different pathways that predicted support receipt from parents. These two pathways indicate the importance of the filial motives of interdependence and duty as intermediaries of the relationship between family cohesion and support provision. Furthermore, this finding is significant in terms of its implications on the pre-existing literature. Firstly, the finding of only two indirect pathways predicting support provision is congruent with previous research which has shown the importance of family cohesion and other variables that signal warmth, affection and closeness specifically in the parent-

adolescent relationship on the provision of support many years later (Aquilino, 1997; Rossi & Rossi, 1990; Silverstein et al., 2002; Whitbeck et al., 1994). Our study builds upon these findings in suggesting family co-operation and happiness in adolescence is the greatest predictor of increased filial motivation as well as support provision from children to parents. Secondly, the current study indicates that emotional intimacy may play an important role in the development of motivation to support parents above and beyond the impact of demographic variables, in contrast to that suggested by Finley et al. (1988). Our findings indicate that filial motives of interdependence and duty in a New Zealand sample were found to develop predominantly due to the effects of family cohesion, which supports the notion that filial motives are, at least to some extent, an outgrowth of a perceived family bond.

The links established between family climate and the development of filial motives five years later should not be underestimated in their importance. Not only does this finding indicate that support provided to parents is the outcome of positive family relationships that occurred much earlier in adolescence, but it is also congruent with and extends the socialisation literature. Specifically, this result stresses the importance of family climate on practices of socialisation of filial values (Xiao, 1999). These findings suggest that when NZ children are raised in a family climate where there is sense of co-operation and mutual support within the family, they very well may internalise and retain these values in the form of filial motives. In this way, it appears that a sense of interdependence and subsequent support provision represents an outgrowth of the internalisation of strong family bonds in adolescence.

The fact that support is typically more strongly motivated by a sense of interdependence than a sense of duty in a NZ sample also has implications for research on the consequential outcomes of support provision for the carer and the recipient. Research indicates that when support is provided out of obligation alone, that caregiver burden increases, relationship quality decreases and the recipient may feel lonely as interactions lack

positivity and may be perceived as hollow (Walker et al., 1990). Therefore, emphasis on fostering a sense of family cohesion in adolescence not only increases the quantity, but perhaps also the quality of support received by parents in future.

### **Generalisability of the study**

When considering the interpretation and generalizability of these results, it must be acknowledged that trajectories of human development are influenced by the historical period and social context within which development takes place (Gans & Silverstein, 2006). Notably, this study has implications for the assertion that the traditional family is in decline. Not only did this study find similar proportions of the different types of support exchanged between parents and children, but children's motivation to provide support for their parents was significantly affected by their family history. Therefore, it is likely that the conclusion regarding family decline is premature, and was aptly referred described by Shanas (1979) as a myth so hard to dispel that it was compared to the 'hydra-headed monster'. Instead, this study indicates that patterns of family interaction change concurrently with changes in the social context, with the hierarchical and self-sacrificial family dynamic proposed by Dinkel (1944) having been replaced by a more egalitarian and mutually supportive stance among family members in recent decades.

In line with the shifts in the historical context within which this study is nested, strengths of the present study include its contemporary nature, being one of the first longitudinal studies to have investigated determinants of supportive exchanges between parents and emerging adult offspring in nearly two decades. Our dataset was also based on a stratified random sample of primary and secondary school students from a range of backgrounds, and so it is likely that the findings are more generalizable to persons residing in New Zealand between the ages of 17-22 compared to previous university student-based samples. While some children now share a residence with their parents for longer periods of time, others find themselves in an era of increased mobility with the potential to move far

away from their family of origin sooner. With exponentially increasing technological advances, it is easier than ever to keep in touch with family and provide all types of support, except possibly face-to-face practical assistance. Some researchers have noted that obligations may become stronger after children leave home, and that children typically begin providing support after this life change occurs (Rossi & Rossi, 1990).

In acknowledgement of the rapidly changing historical context, changing demographic and developmental trends and associated technological advancement, a number of variables must be taken into account in future studies. For instance, the impact of geographical distance from the family of origin may no longer have such a large impact on the amount of support that can be exchanged. Further, as endorsement of filial motives will change over time, it would be beneficial to continue the mapping of filial motives in later development and to examine the dynamic relationship between family climate, filial motives and support provision.

### **Limitations of the study**

A number of limitations in the creation of the filial motives measure, as well as the way the data was collected and analysed may have affected the results of the study. Firstly, although the intention and obligation items formed the forward looking construct of 'duty', intention to provide emotional support items were removed based on results from the pilot study. Therefore, it cannot be ascertained whether intention for all domains would have loaded on the same factor. Secondly, a potential weakness of the measurement instruments were that the filial motive items could have been more distinctive in separating intention and obligation to provide future support from items measuring present motivation to provide support. Specifically, Ajzen and Fishbein (1977) indicated that in order to use items most effectively as predictors of future behaviour, it is necessary to specify the context, location and time frame in which the intended behaviour is to occur. Lastly, the factor of independence obtained only a marginal level of internal reliability, and inconsistency could



signify problems in the construct itself. These limitations suggest that future studies should more robustly test the factor structure of the filial motives measure.

In terms of data collection, a number of studies have suggested that both parents and offspring need to participate in the study so that the accuracy of their responses could be gauged and particular influences of social desirability bias measured. Previous literature has suggested that respondents typically report providing more support than their counterparts report receiving, and that they report receiving less support than their counterparts report providing (Ikkink et al., 1999). Although responses were not obtained from parent-child dyads in the current study, the trends present in the results are similar to those found in previous studies. Still, it will be important for future research to obtain multiple informant data to verify the veracity of these ratings.

In terms of analysis, a number of demographic and static variables were not measured as they were outside the scope of the current thesis. Other studies have shown significant effects of income, education level, gender of child and parent, and geographical proximity (Rossi & Rossi, 1990). As suggested in previous studies, family climate and filial motives may be necessary precursors but insufficient in themselves to account for most of the variance in the exchange of support (Finley et al., 1988). In this way, this study was unable to disentangle the explanatory power of demographic variables compared to family climate in adolescence and filial motives on the exchange of support to more adequately address Finley et al.,'s (1988) findings.

So far, three possible areas have been suggested that would be worthy of further investigation. To this, two other possible areas of research could be considered. As previously stated, more sensitive ways to conceptualise motives should be employed in order to determine whether support is offered as the product of altruism and/or reciprocity. On the surface level, it could be assumed that the motive of interdependence should be more strongly associated with altruistic motivations, whereas the factor of duty should be more strongly

associated with reciprocity. However, these possibilities are tentative and it would be interesting to find out which type of giving is more related to which filial motive, and the relative strength of these relationships.

A second course would be to conduct an even more fine-grained analysis of the path model by associating different types of support in relation to different aspects of family climate and different filial motives. For instance, perhaps a sense of duty is strongly related to the provision of financial support, but they are not provided because the individual lacks current resources to provide this type of support. Additionally, as NZ European adolescents have previously endorsed contact with parents to be more important than functional support, perhaps egalitarian family bonds as measured by interdependence is more strongly related to the provision of emotional support than other types.

## **Conclusions**

The present study investigated the ability of family climate in adolescence to predict filial motives and the exchange of support in emerging adulthood, and it is one of the first studies to empirically evaluate interrelationships amongst these three variables in a path analysis over time. In addition to proposing a new filial motives measure that is applicable to Western samples, the path model indicated that there is considerable continuity in the joint life course of parents and their children. Although many variables predicted the receipt of support from caregivers, the provision of support to caregivers was only influenced by the fostering of co-operative, mutually supportive relationships in adolescence.

The research suggests new avenues of research regarding how filial motives are represented in a Western and contemporary setting, strongly implicating the important construct of filial maturity. Additionally, the propositions regarding the temporal proximity of interdependence and duty to the exchange of support encourages movement of future studies away from a static perspective to one that is dynamic and considers supportive exchanges as fluid across the life course. Despite limitations, the results are supportive of

previous literature as well as theories of intergenerational solidarity, the intergenerational stake hypothesis, and the notion of a synergistic relationship between child's motivation and parents' need.

### References

- Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, 84(5), 888.
- Amato, P. R., & Booth, A. (1996). A prospective study of divorce and parent-child relationships. *Journal of Marriage and the Family*, 356-365.
- Amos Development Corporation. (2010). User-defined estimand. Retrieved 2 December, 2013, from <http://amosdevelopment.com/video/>
- Anyan, S. E., & Pryor, J. (2002). What is in a family? Adolescent perceptions. *Children & Society*, 16(5), 306-317. doi: 10.1002/chi.716
- Aquilino, W. S. (1997). From adolescent to young adult: A prospective study of parent-child relations during the transition to adulthood. *Journal of Marriage and the Family*, 670-686.
- Aquilino, W. S. (2006). Family Relationships and Support Systems in Emerging Adulthood In J. J. Arnett & J. L. Tanner (Eds.), *Emerging adults in America: Coming of age in the 21st century* (pp. xxii, 340). Washington, DC, US: American Psychological Association.
- Arbuckle, J. L. (2011). IBM SPSS Amos 20 user's guide. Armonk, NY: IBM.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469-480. doi: 10.1037/0003-066x.55.5.469
- Belsky, J., Jaffee, S., Hsieh, K.-H., & Silva, P. A. (2001). Child-rearing antecedents of intergenerational relations in young adulthood: A prospective study. *Developmental Psychology*, 37(6), 801.
- Bengtson, V. L., & Roberts, R. E. (1991). Intergenerational solidarity in aging families: An example of formal theory construction. *Journal of Marriage and the Family*, 856-870.

- Birditt, K. S., Fingerman, K. L., Lefkowitz, E. S., & Dush, C. M. K. (2008). Parents perceived as peers: Filial maturity in adulthood. *Journal of Adult Development, 15*(1), 1-12.
- Blenkner, M. (1965). Social work and family relationships in later life with some thoughts on filial maturity. *Social structure and the family: Generational relations*, 46-59.
- Blieszner, R., & Hamon, R. R. (1992). Filial responsibility: Attitudes, motivators, and behaviors. In J. W. D. R. T. Coward (Ed.), *Gender, families, and elder care* (pp. 105-119). Thousand Oaks, CA, US: Sage Publications, Inc.
- Bucx, F., van Wel, F., & Knijn, T. (2012). Life Course Status and Exchanges of Support Between Young Adults and Parents. *Journal of Marriage and Family, 74*(1), 101-115.
- Cicirelli, V. G. (1983). Adult children's attachment and helping behavior to elderly parents: A path model. *Journal of Marriage and the Family, 815-825*.
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310.
- Coleman, M., & Ganong, L. (1999). *Changing families, changing responsibilities: Family obligations following divorce and remarriage*: Psychology Press.
- Dellmann-Jenkins, M., & Brittain, L. (2003). Young adults' attitudes toward filial responsibility and actual assistance to elderly family members. *Journal of Applied Gerontology, 22*(2), 214-229.
- Dinkel, R. M. (1944). Attitudes of children toward supporting aged parents. *American Sociological Review, 9*(4), 370-379.
- Eggebeen, D. J., & Hogan, D. P. (1990). Giving between generations in American families. *Human Nature, 1*(3), 211-232.
- Fingerman, K. L., Cheng, Y.-P., Tighe, L., Birditt, K. S., & Zarit, S. (2012). Relationships between young adults and their parents *Early Adulthood in a Family Context* (pp. 59-85): Springer.

- Finley, N. J., Roberts, M. D., & Banahan, B. F. (1988). Motivators and Inhibitors of Attitudes of Filial Obligation Toward Aging Parents. *The Gerontologist*, 28(1), 73-78. doi: 10.1093/geront/28.1.73
- Freeberg, A. L., & Stein, C. H. (1996). Felt obligation towards parents in Mexican-American and Anglo-American young adults. *Journal of Social and Personal Relationships*, 13(3), 457-471.
- Ganong, L., & Coleman, M. (2005). Measuring intergenerational obligations. *Journal of Marriage and Family*, 67(4), 1003-1011.
- Gans, D., & Silverstein, M. (2006). Norms of filial responsibility for aging parents across time and generations. *Journal of Marriage and Family*, 68(4), 961-976.
- Giarrusso, R., Du, F., & Bengtson, V. L. (2004). The intergenerational-stake phenomenon over 20 years. *Annual review of gerontology and geriatrics*, 24(1), 55-76.
- Hamon, R. R. (1992). Filial role enactment by adult children. *Family Relations*, 91-96.
- Hillcoat-Nallétamby, S., & Dharmalingam, A. (2003). Mid-life parental support for adult children in New Zealand. *Journal of Sociology*, 39(3), 271-290.
- Hillcoat-Nallétamby, S., & Dharmalingam, A. (2006). Solidarity in New Zealand. Parental support for children in a three-generational context. In C. Leccardi & E. Ruspini (Eds.), *A new youth?* (pp. 125-145).
- Ho, D. Y. F. (1996). Filial piety and its psychological consequences *The handbook of Chinese psychology* (pp. 155-165). New York, NY, US: Oxford University Press.
- Hogan, D. P., Eggebeen, D. J., & Clogg, C. C. (1993). The structure of intergenerational exchanges in American families. *American Journal of Sociology*, 1428-1458.
- Ikkink, K. K., Van Tilburg, T., & Knipscheer, K. C. (1999). Perceived instrumental support exchanges in relationships between elderly parents and their adult children: Normative and structural explanations. *Journal of Marriage and the Family*, 831-844.

- Johnson, M. K., & Benson, J. (2012). The implications of family context for the transition to adulthood *Early Adulthood in a Family Context* (pp. 87-103): Springer.
- Jose, P. E., & Pryor, J. (2010). New Zealand Youth Benefit from Being Connected to Their Family, School, Peer Group and Community. *Youth Studies Australia*, 29(4), 30-37.
- Kalmijn, M. (2003). Intergenerational solidarity. A review of three theories and their evidence: Tilburg: Universiteit van Tilburg.
- Kohli, M., & Künemund, H. (2003). Intergenerational transfers in the family: What motivates giving. *Global aging and challenges to families*, 123-142.
- Lee, G. R., Netzer, J. K., & Coward, R. T. (1994). Filial responsibility expectations and patterns of intergenerational assistance. *Journal of Marriage and the Family*, 559-565.
- Lowenstein, A., & Daatland, S. O. (2006). Filial norms and family support in a comparative cross-national context: evidence from the OASIS study. *Ageing and Society*, 26(2), 203-224.
- Mancini, J. A., & Blieszner, R. (1989). Aging parents and adult children: Research themes in intergenerational relations. *Journal of Marriage and the Family*, 275-290.
- Ng, S. H., Loong, C. S., Liu, J. H., & Weatherall, A. (2000). Will the young support the old? An individual-and family-level study of filial obligations in two New Zealand cultures. *Asian Journal of Social Psychology*, 3(2), 163-182.
- Noack, P., & Puschner, B. (1999). Differential trajectories of parent–child relationships and psychosocial adjustment in adolescents. *Journal of Adolescence*, 22(6), 795-804.
- Nydegger, C. N. (1991). The Development of Paternal and Filial Maturity. In K. Pillemer & K. McCartney (Eds.), *Parent-child relations throughout life*: Taylor & Francis.
- Olson, D. H., Sprenkle, D. H., & Russell, C. S. (1979). Circumplex Model of Marital and Family Systems: I. Cohesion and Adaptability Dimensions, Family Types, and

- Clinical Applications. *Family Process*, 18(1), 3-28. doi: 10.1111/j.1545-5300.1979.00003.x
- Parrott, T. M., & Bengtson, V. L. (1999). The effects of earlier intergenerational affection, normative expectations, and family conflict on contemporary exchanges of help and support. *Research on Aging*, 21(1), 73-105.
- Phinney, J. S., Kim-Jo, T., Osorio, S., & Vilhjálmsdóttir, P. (2005). Autonomy and Relatedness in Adolescent-Parent Disagreements Ethnic and Developmental Factors. *Journal of Adolescent Research*, 20(1), 8-39.
- Rossi, A. S., & Rossi, P. H. (1990). *Of human bonding: Parent-child relations across the life course*: Aldine de Gruyter.
- Rossi, A. S., & Rossi, P. H. (1991). Normative obligations and parent-child help exchange across the life course. In K. Pillemer & K. McCartney (Eds.), *Parent-child relations throughout life* (pp. 201-223): Psychology Press
- Schwartz, S. J., Weisskirch, R. S., Hurley, E. A., Zamboanga, B. L., Park, I. J., Kim, S. Y., . . . Greene, A. D. (2010). Communalism, familism, and filial piety: Are they birds of a collectivist feather? *Cultural Diversity and Ethnic Minority Psychology*, 16(4), 548.
- Shanas, E. (1979). The family as a social support system in old age. *The Gerontologist*, 19(2), 169-174.
- Silverstein, M., & Bengtson, V. L. (1997). Intergenerational Solidarity and the Structure of Adult Child-Parent Relationships in American Families 1. *American Journal of Sociology*, 103(2), 429-460.
- Silverstein, M., Conroy, S. J., Wang, H., Giarrusso, R., & Bengtson, V. L. (2002). Reciprocity in Parent–Child Relations Over the Adult Life Course. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 57(1), S3-S13. doi: 10.1093/geronb/57.1.S3



- Silverstein, M., Gans, D., & Yang, F. M. (2006). Intergenerational Support to Aging Parents: The Role of Norms and Needs. *Journal of Family Issues*, 27(8), 1068-1084.
- Silverstein, M., Parrott, T. M., & Bengtson, V. L. (1995). Factors that predispose middle-aged sons and daughters to provide social support to older parents. *Journal of Marriage and the Family*, 465-475.
- Stein, C. H., Wemmerus, V. A., Ward, M., Gaines, M. E., Freeberg, A. L., & Jewell, T. C. (1998). "Because They're My Parents": An Intergenerational Study of Felt Obligation and Parental Caregiving. *Journal of Marriage and the Family*, 611-622.
- Streib, G. F. (1987). Old age in sociocultural context: China and the United States. *Journal of Aging Studies*, 1(2), 95-112.
- Sung, K.-T. (1994). A cross-cultural comparison of motivations for parent care: The case of Americans and Koreans. *Journal of Aging Studies*, 8(2), 195-209.
- Wake, S. B., & Sporkowski, M. J. (1972). An intergenerational comparison of attitudes towards supporting aged parents. *Journal of Marriage and the Family*, 42-48.
- Walker, A. J., Pratt, C. C., Shin, H.-Y., & Jones, L. L. (1990). Motives for parental caregiving and relationship quality. *Family Relations*, 51-56.
- Watkins, M. W. (2000). Monte Carlo PCA for parallel analysis [computer software]. *State College, PA: Ed & Psych Associates*.
- Whitbeck, L., Hoyt, D. R., & Huck, S. M. (1994). Early family relationships, intergenerational solidarity, and support provided to parents by their adult children. *Journal of Gerontology*, 49(2), S85-S94.
- Xiao, H. (1999). Independence and Obedience: an analysis of child socialisation values in the United States and China. *Journal of Comparative Family Studies*, 30, 641-653.
- Zelizer, V. A. R. (1985). *Pricing the priceless child: The changing social value of children*. Princeton University Press.

## Appendix A

*Participant recruitment email*

DATE

Dear NAME,

About six years ago (from 2004 to 2007) you participated in the Youth Connectedness Project led by Associate Professor Paul Jose from Victoria University of Wellington. At that time, you and your parents provided us with contact details so that we could get back in touch with you if we decided to continue this project. We have received further funding, and we are in the process of re-contacting everyone who previously participated in this study so that we can continue the study.

The Youth Connectedness Project has allowed us to gain invaluable insight into how young people view their lives and how these views can change over the course of a few years. The information you provided is still providing us with useful findings about youth development. Now that you are older, we thought that it would be important to find out how you are getting on, and learn more about how your lives have changed since our last survey.

If you would like to continue participating in the YCP, please indicate your interest by clicking the YES link below, and we will send you the link for the online survey in the coming months to your nominated email address. If you are not interested in being contacted further, please indicate this preference by clicking the NO link below.

If you participate in this follow-up on-line survey (which will take about 45-60 minutes), we will give you either a \$20 voucher of your choice. In addition, you will be entered into a prize draw. The winner of the first prize can choose between a 32GB iPad 4 or a 16GB iPhone 5 (\$1000 value). In addition we will give away three 32GB iPod Touches (\$459 value) and five \$200 New World supermarket vouchers.

[Link for Yes](#)[Link for No](#)

Thank you again for your support and participation in the Youth Connectedness Project.

## Appendix B

*Recruitment phone call scripts***For participants**

Hi \_\_\_\_, this is \_\_\_\_ calling on behalf of the Youth Connectedness project, a survey you completed in school about 5 years ago.

Do you have time to speak with me for a minute?

We're just following up people that took the survey 5 years to see if they'd like to take part in a 1 hour follow up survey which we will email to you in the next month. This survey is online and can be completed in your own time. You'll receive a \$20 voucher of your choice and go into a draw to win prizes like an iphone 5.

If you're interested, give me your email address and when the survey is ready we'll email it out to you to complete in your own time.

If voicemail: if you're interested, feel free to give us an email or a text with your email address. You can email us at [youthconnectednessproject@gmail.com](mailto:youthconnectednessproject@gmail.com), or text through your email to 022 320 9612. Thanks for your time

**For Parents and alternative contacts**

Hi \_\_\_\_, this is \_\_\_\_ calling on behalf of the Youth Connectedness project, a survey your specify relationship and name completed at school about 5 years ago.

Do you have time to speak with me for a minute?

We're calling you because this number was provided as an alternative way for us to get in touch with \_\_\_\_.

(Only if details were provided at all): We've tried contacting him/her but the contact info we received 5 years ago isn't working anymore.

Is there any possibility you can give us an email address or contact number for \_\_\_\_ so that we can ask if they would like to participate in a follow up study?

If voicemail: if you could please give us a call back on 04 463 5401, or send a text with their name, and either cell phone number or email to 022 320 9612, that would be great. Thanks for your time

## Appendix C

*Recruitment Facebook message*

Dear NAME,

We are getting in touch with you as you took part in the Youth Connectedness Project, a three wave survey that you completed for us at SCHOOL about 5 years ago. We are messaging you through Facebook as your contact details have changed from 5 years ago, and we wanted to invite you to take part in a follow-up online survey that will take 45-60 minutes to complete.

For your participation you will receive a \$20 voucher of your choice and you will be entered into a prize draw. The winner of the first prize will choose between a 32GB iPad 4 or a 16GB iPhone 5 (\$1000 value). We will also give away three 32GB iPod Touches (\$450 value) and five \$200 vouchers of your choice.

If you would like to participate, click the following link:

[http://vuw.qualtrics.com/SE/?SID=SV\\_0eVuwkne7hrda8l](http://vuw.qualtrics.com/SE/?SID=SV_0eVuwkne7hrda8l)

We will email you the link for the online survey in the next few weeks.

If you are not interested in participating or being contacted further, please paste this web address into your web browser to opt out:

[http://vuw.qualtrics.com/SE/?SID=SV\\_bI3WiHcg4kM2bit](http://vuw.qualtrics.com/SE/?SID=SV_bI3WiHcg4kM2bit)

We look forward to hearing from you!

Paul Jose  
Associate Professor of Psychology  
P.O. Box 600  
School of Psychology  
Victoria University of Wellington  
Wellington 6012  
04-463-6035 (office phone)  
[paul.jose@vuw.ac.nz](mailto:paul.jose@vuw.ac.nz)

## Appendix D

*Invitation to Complete the Survey E-Mail*

29th November 2013

Dear NAME,

We would like to invite you to participate in the fourth part of the Youth Connectedness Project.

Thank you for your patience while we prepared the Youth Connectedness Project Survey over the past few months. **Your unique pass code is PASSCODE**. You will need to enter this at the beginning of the survey.

Link to survey: [http://vuw.qualtrics.com/SE/?SID=SV\\_8fb8wBm1MB3ymfH](http://vuw.qualtrics.com/SE/?SID=SV_8fb8wBm1MB3ymfH)

Before you begin the survey please be aware that completing it will probably take about 60 minutes. You will be able to leave it temporarily unfinished and return to it later to complete it, but please know that you must do so on the same computer. In other words, you cannot link to the survey from two different computers.

To show our appreciation for your time in completing this survey, you will be able to choose a \$20 voucher of your choice once you have finished the survey. If you are living overseas, please email us at [youthconnectednessproject@gmail.com](mailto:youthconnectednessproject@gmail.com) to request your voucher of choice.

In addition, if you complete the survey by the 15<sup>th</sup> of December, you will also be entered into a prize draw, so make sure you do the survey by then to be in the draw to win. The winner of the first prize can choose between a 32GB iPad 4 or a 16GB iPhone 5 (\$1000 value). In addition, we will give away three 32GB iPod Touches (\$459 value) and five \$200 New World or Countdown supermarket vouchers.

You will receive the \$20 voucher and go into the draw only if you finish the survey. Individuals who do not complete the survey will be reminded to finish it, and upon its completion, will receive compensation.

Thank you again for your support and participation in the Youth Connectedness Project.

Paul Jose  
Associate Professor of Psychology  
School of Psychology  
Victoria University of Wellington  
Wellington 6012  
04-463-6035 (office phone)  
[paul.jose@vuw.ac.nz](mailto:paul.jose@vuw.ac.nz)

## Appendix E

*Information Sheet for the Time 4 survey*

## Welcome back to the Youth Connectedness Project! It's great to have you back on board!

### Information Sheet for the Study

#### The Research team:

**Principal Investigator:** Associate Professor Paul Jose, email: paul.jose@vuw.ac.nz  
 Postdoctoral Research Fellow: Dr Magdalena Kielpikowski, email: magdalena.kielpikowski@vuw.ac.nz  
 Postdoctoral Research Fellow: Dr Jaimee Stuart, email: jaimee.stuart@vuw.ac.nz  
 Master's Student: Cissy Li, email: cissy.li@vuw.ac.nz  
 Research Assistant: Nicolette Fisher, email: nicolette.fisher@vuw.ac.nz

#### What is the purpose of this research?

- This research continues the project you took part in between 2006 – 2008. It will allow us to examine what happens in the lives of young people in New Zealand.

#### Who is conducting the research?

- We are a team of researchers from the School of Psychology at Victoria University of Wellington. This research has been approved by the School of Psychology Human Ethics Committee under delegated authority of Victoria University of Wellington's Human Ethics Committee.

#### What is involved if you agree to participate?

- If you agree to participate in this study, you will complete an online survey where you will respond to questions such as "I have a good feeling about what is to come in my life"; "I felt depressed"; "I certainly feel useless at times"; "How many of your Facebook friends do you regularly interact with? ".  
 • During the research you are free to withdraw at any point before your survey has been completed.

#### How long will it take to complete the survey?

- The survey will take around one hour to complete. It is really important that you take the time to think carefully about your answers to all of the questions so that we are able to collect good, reliable information. Please make sure that you have enough time and are in a place where you won't be disturbed when filling out the survey. If you can't complete it all in one go, you can come back later but you must use THE SAME COMPUTER that you started the survey on, you will not be able to complete the survey from a different computer.

#### Privacy and Confidentiality

- We will keep your consent forms and survey for 5 years.
- You will never be identified in this research project or in any other presentation or publication. The information you provide will be coded by number only.
- In accordance with the requirements of some scientific journals and organisations, your coded survey may be shared with other competent researchers.
- Data without identifying names may be used in other, related studies.
- A copy of the data without identifying names will remain in the custody of Associate Professor Paul Jose on a password protected university computer drive.

#### What happens to the information that you provide?

- The data you provide may be used for one or more of the following purposes:
- The overall findings may be submitted for publication in a scientific journal, or presented at scientific conferences.
- The overall findings may form part of a PhD Thesis, Masters Thesis, or Honours research project that will be submitted for assessment.

If you have any further questions regarding this study, please contact any one of us above. If you agree to participate in the present study, tick the 'yes' box provided below. If you do **not** wish to participate in the study, you may log off this site now. If you do not tick 'yes' then you cannot proceed with the survey.

#### I agree to participate in this survey.

☐ Yes

## Appendix F

*Measures***Time 3: Family Climate Measures****Family Cohesion**

1. For my family/whanau spending time together is very important
2. We can easily think of things to do together as a family/whanau
3. My family/whanau likes to spend free time together
4. My family/whanau ask each other for help
5. We like to do things just as a family/whanau

**Family Mutual Activities**

1. Do you and your family/whanau have meals together
2. Do you and your family/whanau spend time going out together (e.g. To the movies)
3. Do you and your family/whanau have holidays together
4. Do family/whanau members watch you play sport or perform in other areas
5. Do other family/whanau come to stay at your place
6. Do you go to stay at other family/whanau member's places

**Family Identity**

1. It means a lot to me to be a member of my family/whanau
2. We are proud to be members of our family/whanau

**Family Autonomy**

1. Someone in my family/whanau encourages me to make my own decisions
2. Someone in my family/whanau encourage me to talk about how I see things
3. Someone in my family/whanau makes me feel that what I have to say is important

**Time 4: Filial Motive Measures****Filial Responsibility**

1. To satisfy my family's needs even when my own needs are different
2. To be available to family members when they need help
3. To spend time with my family
4. To consult with my parents before making decisions
5. I think that it is my duty to take care of my parents
6. If my parents need help, I will always be there
7. To spend time doing what I want, away from my family
8. To make choices for myself regardless of my parents' views
9. To satisfy my own needs when my family's needs are different
10. To live by myself as soon as I can

**Filial maturity**

1. As I grow older, my parents seem less like authority figures and more like equals
2. My parents see me as a person who they can turn to for support
3. My parents increasingly respect what I have to say/my opinion

**Intention to provide support**

1. I feel I should support my parents financially
2. I feel I should offer my parents my advice and guidance
3. I feel I should help my parents out around the house and with running errands.
4. I feel I should comfort my parents if they were upset (removed)
5. I feel like I should spend time with/keep in touch with my parents (removed)

**Time 4: Support Behaviour Measure**

Provision	Receipt
<p>Please indicate how often YOU have provided your <i>primary caregivers name</i> with the following types of support in the last year or so</p> <ol style="list-style-type: none"> <li>1. Given financial help with money, bills, loans, or necessary purchases</li> <li>2. Comforted them when they were upset?</li> <li>3. Been there to listen when they needed to talk</li> <li>4. Given them advice on a decision that they had to make</li> <li>5. Showed them how to do something they didn't know how</li> <li>6. Gave them practical help (housework, maintenance, shopping, yardwork, cleaning, babysitting, running errands)</li> </ol>	<p>Please indicate how often your <i>primary caregivers name</i> has provided you with the following types of support in the last year or so</p> <ol style="list-style-type: none"> <li>1. Given financial help with money, bills, loans, or necessary purchases</li> <li>2. Comforted you when you were upset?</li> <li>3. Been there to listen when you needed to talk</li> <li>4. Given you advice on a decision that you had to make</li> <li>5. Showed you how to do something you didn't know how</li> <li>6. Gave you practical help (housework, maintenance, shopping, yardwork, cleaning, babysitting, running errands)</li> </ol>