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Parental Bonding Attitudes and Loneliness: Testing the Causes and Links Using Conflict Independence as a Mediator

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Abstract

Among the many variables affecting happiness, there are those that arise from emotional factors. In this study, the hypothesis stating that happiness is affected by emotional self-efficacy, emotional empathy and emotional approach coping has been examined using the path model. A total of 334 university students participated in this study, 229 of whom were females and 105 being males. Oxford Happiness Questionnaire-Short Form, Emotional Self-efficacy Scale, Multi-Dimensional Emotional Empathy Scale, The Emotional Approach Coping Scale and personal information form have been used as data acquisition tools. As a result of path analysis, it was determined that the predicted path from emotional empathy to emotional approach coping was insignificant and thus it was taken out of the model. According to the modified path model, it was determined that there is a positive relationship between emotional self-efficacy and emotional empathy, that emotional self-efficacy positively affects emotional approach coping and happiness, that emotional empathy also positively affects happiness and that emotional approach coping also positively affects happiness.

Keywords: Happiness, emotional self-efficacy, emotional empathy, emotional approach coping;

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1. Introduction

Modernisation and advances in transportation, decrease the physical distance between people, whilst at the same time, the psychological distance is increasing. As a result, feelings of loneliness are expected to worsen. Numerous studies verify that loneliness is widespread in modern society and greatly affects the human mind (Bradburn, 1969; Peplau & Perlman, 1982; Jones et al., 1984).

When a person leaves home, becomes independent, and goes to university they encounter many new experiences but are unable to take their previous social relationships and prestige into university. There are big differences between university life and life at home during elementary school. Specifically, in university, students arrange and schedule their own courses each semester, whereas they did not previously do this, and they experience less or no interaction with classmates and teachers. New undergraduates must become accustomed to their new life quickly and build new social networks, to prevent loneliness. This is critical and urgent requiring an immediate solution (Cutrona, 1982).

In terms of the psychological development of an undergraduate, social relationships are of major importance. Based on Erikson's (1950) study, once a social relationship grows positively, closeness and satisfaction follow, once a relationship grows negatively, the people involved will gradually drift apart and become lonely. When studying the social relationships of undergraduates, we should take into account loneliness, and emotional issues.

In addition to social relationships, Hojat & Vogel (1989) suggest parental bonding attitudes have a deep impact on feelings of loneliness. Numerous studies show that individuals who report experiencing warm, close, and careful parental bonding attitudes experience less loneliness than those who depict their parental bonding attitudes as cold, careless, irritable and lacking in trust (Rubenstein & Shaver, 1982). Some studies maintain that there is a significant positive relationship between careless parental bonding attitudes and self-reported loneliness (Chambers et al., 2000). Additionally, if parental bonding attitudes become overprotective, the individual becomes anxious, lonely, and desperate (Biggam & Power, 1998).

Taken together, these studies indicate that the construct of psychological separation-individuation should be investigated further. Psychological separation-individuation occurs when an individual psychologically separates from his main caretaker (e.g., parent) and forms a clear demarcation line between critical persons and other individuals of the same generation, allowing them to learn about mental separation, develop self-identity, independence, and mental consistency (Bloom, 1980; Choi, 2002; McCurdy & Scherman, 1996; Hoffman, 1984; Mattanah et al., 2004). Hoffman (1984) defined individuation as when an individual separates from psychological dependence on parents to independently satisfying their personal needs, emotions, attitudes, and abilities. Based on Hoffman's study, confliction independence was the most predictive dimension of personal adjustment (Hoffman, 1984).

As mentioned, there is a relationship between parental bonding attitudes and loneliness. Previous research finds a relationship between parental bonding attitudes and psychological separation-individuation (Blos, 1979; Kroger, 1996). Research in Asian countries, shows that young Asians have less opportunities to learn separation and independence due to specific aspects of Asian culture, such as high parental control of children and dense family networks (Wu, 2002), making psychological separation-individuation a challenge for most Asian families. If parental bonding attitudes consist of high care or low protection, the confliction independence of the child will be high, meaning that they will be capable of handling negative emotions among parents. Where parental bonding attitudes consist of high protection and low care, the confliction independence of an individual will be low (Shun, 1997; Tsai & Wu, 1998, cited in Chen, 2010). In short, there is a relationship between confliction independence and parental bonding attitudes.

There is plenty of research to indicate that an individual of low psychological separation-

individuation has poor psychological adaptation, a trait compatible with several aspects of loneliness (Kerr, 1992; Moroi, 1985). When students in the university population experience difficulties in psychological separation-individuation most of them reveal loneliness and anxiety symptoms instead of asking parents for assistance (Fulmer, 1982). Whereas those with high confliction independence, adapt more easily to university life and cope better with negative emotions such as anxiety and loneliness (Rice et al., 1990). In addition, parental bonding attitudes of high control or low care may predispose an individual to several negative personality traits such as low self-esteem, loneliness, melancholy, and low individuation (De Man et al., 1993). This indicates that parental bonding attitudes influence both confliction independence and loneliness and that, additionally, confliction independence is related to loneliness. Taken together, we can assume that parental bonding attitudes influence loneliness both directly and indirectly through the mediating effect of confliction independence, because the main agent of parental bonding attitudes is parents. Confliction independence is shaped by learning and experiencing, and loneliness is based on an individual's subjective perception, from which we can infer that parental bonding attitudes influence the degree of confliction independence, and the degree of confliction independence further affects an individual's loneliness. Because studies of the relationship between parental bonding attitudes and loneliness are rare, especially in Taiwanese higher education, in this study we aim to discover a link between parental bonding attitudes and loneliness by utilising confliction independence as a mediator.

I have organised my paper as follows; I have provided a literature review of parental bonding attitudes, psychological separation-individuation, and loneliness in section two. I present my empirical study, in section three, discuss the results in section four, and present my conclusion in the last section.

2. Literature Review

2.1 Parental bonding attitudes

We classify parental bonding attitudes in one of three ways: unilateral, bilateral, or multilateral. In the unilateral approach, parental bonding attitudes of both parents are combined into a single classification (Baldwin et al., 1945; Baumrind, 1971). In the bilateral parental bonding attitude classification, we separate each dimension into high and low dimensions, which we express on the x-axis and y-axis to form four quadrants (Williams, 1958; Bronfenbrenner, 1961; Parker et al., 1979; Baumrind, 1980; Maccoby & Martin, 1983; Fisher et al., 1998). We rarely use the multilateral approach in research, due to its complexity.

When compiling findings of related studies we can see that researchers typically use the continuous scores of care and protection dimensions as the principal axes and not the types of parental bonding attitudes in their analyses. The main reasons for this are twofold. First, it is necessary to divide the continuous data and separate the four types of parental bonding attitudes. There is no accepted norm in Taiwan of dividing the dimensions of care and protection and using the continuous scores allows for the measurement of relationships between parental bonding attitudes and other variables of interest. Therefore, in this study, we used care and protection to assess parental bonding attitudes and their relationship to individuation and loneliness.

2.2 Psychological separation-individuation

We can divide psychological separation-individuation into two concepts, individuation, and separation, based on the development process. Separation refers to the process of separating after an individual is born and building a symbiotic relationship with the mother (Tam, 2001). There may be anxiety or guilt upon separation, particularly when there is excessive resistance to it (Mattanah et al., 2004). Individuation, in the process of psychological separation-individuation,

gradually defines ego quality (Tam, 2001).

Bowen (1978) and Bray et al. (1987) believe that psychological separation-individuation indicates an individual that cannot be controlled by others, and does not require others to take responsibility for them. This develops independence whilst maintaining links through feelings, constructing the ability to form stable relationships. Individuals who successfully complete this process have more courage to face challenges and eventually enter the real world successfully (Schneider et al., 1992).

Based on this previous research, psychological separation-individuation indicates an individual's psychological development that is separate from their main caretaker (e.g., parents), and a creation of boundaries with other important peers. They start to learn to separate themselves psychologically, to maintain boundaries between themselves and others, to create their own ego identity, and to gain gradual independence and consistency (Bloom, 1980; Choi, 2002; McCurdy & Scherman, 1996; Hoffman, 1984; Mattanah et al., 2004).

Hoffman (1984) follows the research of Mahler et al. (1975) and Blos (1979) regarding psychological separation-individuation by incorporating their viewpoint of structural family theory to form the concept of teenager psychological separation-individuation. This concept provided the individual with an operational definition, leading to the development of the Psychological Separation Inventory (PSI), based on this definition. This instrument has already passed the reliability and validity inspection of relevant researchers in Taiwan.

Although many findings are reported using related evaluation tools, the PSI is specifically designed for college students, and indicates that confliction independence consistently predicts the effects of adjustment. Hoffman's incorporation of structural family theory into the formation of the PSI matches the context of this research, so we used PSI as a measurement tool for psychological separation-individuation.

2.3 Loneliness

Sullivan first investigated loneliness in 1953, and said, it is a strong and unpleasant experience that occurs when one's personal need for intimacy has not been satisfied. We can divide the construct of loneliness into cognition, emotion, and behaviour. The cognition part means recognising and firmly believing in relationships with others. Research on children (Fordham et al., 1999; Hymel et al., 1990; Kirova-Petrova, 2000), teenagers (Larson, 1999; McWhirter et al., 2002; Prinstein & La Greca, 2004), and adults (McWhirter, 1997; Olmstead et al., 1991) all indicate that low esteem is the main cognitive characteristic of lonely people. Researchers discovered an inseparable interaction between esteem and loneliness. Rubenstein and Shaver (1982) found that loneliness is also associated with self-deprecation. Lonely individuals depreciate themselves and feel they are unattractive, stupid, and insecure. As a result, they appear isolating, hostile, and unwilling to interact with others, and such negative attitudes are obstacles to the formation of interpersonal relationships.

The emotional part refers to the negative emotions brought on by loneliness, these include; despair, frustration, helplessness, weakness, fear, difficulty, sadness, and gloom (Rokach, 1990; Rokach & Brock, 1997; Rubenstein & Shaver, 1982). As psychodynamics implies, when loneliness occurs, it links the unpleasant feeling of not being satisfied with an earlier need for intimacy. Rokach (1990) proposed that when loneliness occurs, individuals feel alone, misunderstood, unable to contact or understand the feelings of others, refused, rejected, a lack of belonging and they miss and desire others who are important to them. The behaviour part includes deficiency in socialisation, experienced as shyness, cowering, unwillingness to express themselves, and self-centeredness in social interactions (they focus on themselves and rarely respond to the questions of others). When they interact with others, they generally feel uneasy or anxious.

There are several inventories for measuring loneliness, including the University of California, Los

Angeles (UCLA) Loneliness Scale (Russell et al., 1978), the short version of the Social and Emotional Loneliness Scale for Adults (SELSA-S), (Ditommaso et al., 2004), the Emotional vs. Social Loneliness Scale (Russell et al., 1984; Wittenberg & Reis, 1986), the Emotional-Social Loneliness Inventory (ESLI), (Vincenzi & Grabosky, 1987), the Social and Emotional Loneliness Scale for Adults (SELSA), (Ditommaso & Spinner, 1993), and the undergraduate loneliness inventory (Ma & Chen, 2010). The undergraduate loneliness inventory is based on most of the previously mentioned inventories, and specifically designed for use in an Asian context. Medora et al. (1987) indicated that an individual's culture influences important factors of loneliness (Cited in Rokach & Neto, 2002). In this research, we use the undergraduate loneliness inventory to measure loneliness.

2.4 The relationship between parental bonding attitudes and psychological separation-individuation

Parents interact most frequently with children in the early stages of their lives and this relationship influences their future development and adjustment. The level of individuation is mainly influenced by the parents' bonding attitudes. Hoffman (1984) proposed that individuation is the separation from the psychological dependence on one's parents to independently satisfying one's own personal feelings, attitudes, functions, and needs. Related research (Rice et al., 1990; Choi, 2002) found that, of the four dimensions measured, confliction independence was the best and most consistent predictor of a person's own adjustment. We focus on confliction independence in this research, and how it represents the ability to cope with negative emotions of parents. As mentioned, even though the definitions used by each scholar regarding researching parental bonding attitudes vary, they are mainly divided into the two dimensions of care and protection. Care dimension includes warmth, acceptance, and cherishing with emotion. It also includes indifference, refusal, negligence, and ignoring. The protective dimension includes positive autonomy and the encouragement of independence, and negative psychological control, over-protectiveness, strictness, excessive authority and the demand for high levels of obedience.

On the care dimension, many studies show that if parents possess a warm, accepting, and cherishing attitude, their children usually accept themselves and are pleasant and emotionally stable (Symond, 1949; Erikson, 1950; Becker, 1964; Siegleman, 1965, 1966; Medinnus, 1961; Bollman, 1967). Jong (1992) studied the individuation development of suicidal and dangerous teenagers and discovered that most of them experienced indifference and neglect from their parents during childhood, and their levels of psychological separation-individuation were the lowest.

In the protective dimension, studies indicate that if parents display refusal and control, this causes their children to become anxious, cowering, lonely, submissive, insecure, and have low self-esteem (Symond, 1949; Erikson, 1950; Becker, 1960; Bandura & Walters, 1959; Medinnus, 1961). Among these traits, low self-esteem is one of the main characteristics of low individuation.

Previous research shows that levels of psychological separation-individuation are related to parental bonding attitudes. When parents adopt a bonding attitude of care and acceptance, teenagers actively and confidently venture outwards and engage in fewer conflicts with their parents, leading to successful individuation. When parents display bonding attitudes of indifference, refusal, control, and over-protection, the relationship between the individual and parent can be more conflicting and contradictory, further hindering the development of individuation.

2.5 The relationship between psychological separation-individuation and loneliness

We know from previous research, that the main characteristic of individuals with low psychological separation-individuation and high levels of loneliness is long-term low self-esteem (Herrick, 1992), therefore, there must be a relationship between psychological separation-individuation and loneliness. Past research has shown that, of the four dimensions of psychological separation-individuation measurements, confliction independence is the best and most consistent predictor of adjustment, which is the focus of this research.

The dimension of confliction independence regarding the predictive power of adjustment should be consistent. Hoffman and Weiss (1987) discovered that conflict independence is negatively correlated with emotional problems, anxiety, and loneliness. When an individual has poor abilities to handle negative emotions between themselves and their parents, they are lonelier and experience more problems of an emotional nature. Rice et al. (1990) indicated that higher levels of confliction independence in college students help them to adjust to college and experience less anxiety, loneliness, and other negative emotions. Rice (1992), in researching college students' psychological separation-individuation and life adjustments, proposed that higher levels of confliction independence were associated with better life adjustment. This means that those with no negative emotional conflicts with their parents adjust better. Clauss (1995) discovered that the emotional adjustment of individuals to college and society are related to confliction independence. Choi (2002) found that adjusting to college and confliction independence are positively correlated: those who had negative emotions and lower psychological separation-individuation from their parents, found adjusting to life in college easier.

Based on the literature, individuation has considerable influence on loneliness, and confliction independence and loneliness are strongly connected. Hence, we designed my this research to investigate the connection between psychological separation-individuation and loneliness through the confliction independence of Taiwanese undergraduates.

2.6 The relationship between parental bonding attitudes and loneliness

Rubinstein et al. (1979) discovered that participants who do not feel lonely often remember their parents as warm, intimate, caring, and helpful; however, when lonely adults recall their childhood, they often describe the bonding attitudes of their parents as indifferent, careless, distant, untrusting, or ill tempered. Shaver and Rubinstein (1980) found that participants who received more support and care from their parents displayed lower levels of loneliness. Chambers et al. (2000) indicated that experiencing a lack of caring from parents is associated with mental distress, gloom, and loneliness.

Biggam and Power (1998) discovered that if the parental bonding attitude is too over-protective, it causes the teenager to become anxious, lonely, gloomy, and hopeless. Parker (1979) developed the Parental Bonding Instrument (PBI) to measure parental bonding attitudes and conducted their empirical study on the development of parental bonding attitudes and individuation development. This instrument has been used abroad for the past two decades with normal groups, teenagers, and with individuals who have Schizophrenia, depression, anxiety, or other mental disorders. All the past research points to a relationship between parental bonding attitudes of over-protection and low caring with loneliness, gloom, and anxiety (Biggam & Power, 1998; Canetti et al., 1997; Martin & Waite, 1994; Parker & Power, 1982). It follows that parental bonding attitudes affects loneliness in children, particularly when they are overprotective and display low levels of care.

Considering this review, we designed the research structure for this study as shown in figure one, and propose seven hypotheses:

Hypothesis one: The care-bonding attitude of parents affects the loneliness of an individual.

Hypothesis two: The protection bonding attitude of parents affects the loneliness of an individual.

Hypothesis three: The care-bonding attitude of parents affects the confliction independence of an individual.

Hypothesis four: The protection-bonding attitude of parents affects the confliction independence of an individual.

Hypothesis five: Confliction independence affects the loneliness of an individual.

Hypothesis six: Confliction independence has a mediating effect on the relationship between the care-bonding attitude of parents and loneliness.

Hypothesis seven: Confliction independence has a mediating effect on the relationship between the protection-bonding attitude of parents and loneliness.

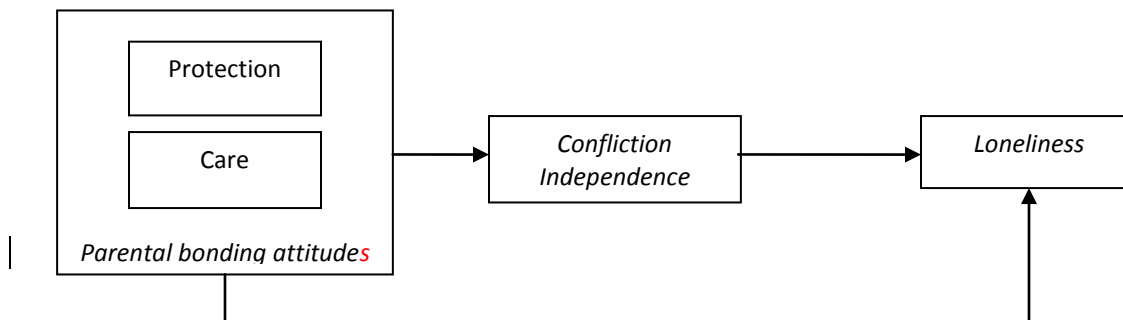


Figure 1 - Research structure.

3. An Empirical Study

3.1 Sample

We tested the hypotheses by surveying undergraduates (i.e., from freshmen through seniors) from a private university in northern Taiwan. Participation was voluntary. 140 questionnaires were issued and returned; 21 questionnaires were discarded for statistical reasons, yielding a response rate of 85%, or 119 questionnaires for analysis. Among the 119 students, 42.8% of the respondents were male ($N=51$).

3.2 Measures

We appraised *Parental bonding attitudes* through items assessing paternal bonding attitudes, maternal bonding attitudes, and parental bonding attitudes constructed by Parker et al. (1979). I rated every item on a six-point scale (*one* = *very suitable*, *six* = *not suitable at all*). Cronbach's α range was 0.65-0.74.

We measured *psychological separation-individuation* on a six-point scale (*one* = *no satisfaction*, *six* = *high satisfaction*) of the Psychological Separation Inventory (PSI) (Hoffman, 1984). In this study, We used the dimension of confliction independence only. Cronbach's α was 0.89.

We evaluated *Loneliness* by adapting Ma and Chen's (2010) 21-item Undergraduate

Loneliness Inventory. We rated each item on a six-point scale (*one =disagree, six =very much agree*). Cronbach's α was 0.94.

3.3 Results

3.3.1 Descriptive analysis

The *Parental bonding attitude scale* consists of two sub-scales: care and protection. On the care sub-scale, the participants' average score was 4.51 ($SD=0.79$), where the male participants' average score was 4.47 ($SD=0.68$), and the female participants' average score was 4.53 ($SD=0.87$). This data indicates that Taiwanese undergraduates commonly report positive parental bonding attitudes, and most of their parents interact with them in a caring and open-minded way. On the protection sub-scale, the participants' average score was 2.56 ($SD=0.85$), the male participants' average score was 2.57 ($SD=0.81$) and the female participants' average score 2.57($SD=0.89$). This data indicates that Taiwanese undergraduates commonly report positive protection in their parents' bonding attitudes and that most parents adopt encouraging and self-disciplined attitudes.

The confliction independence sub-scale of the *Psychological separation-individuation* (PSI) showed an average score of 2.86 ($SD=0.59$), where the male participants' average score was 2.77 ($SD=0.60$) and the female participants' average score was 2.91 ($SD=0.59$). These results show that Taiwanese undergraduates have lower levels of confliction independence and weak ability to handle negative attitudes arising from parental bonding.

The average score on the *Undergraduate Loneliness Inventory* was 2.40 ($SD=0.69$), where the male participants' average score was 2.50 ($SD=0.70$) and the female participants' average score was 2.26 ($SD=0.68$). This data indicates that Taiwanese undergraduates exhibit less loneliness in general. We summarise the descriptive analysis results in table one.

Table 1 - Descriptive statistical analysis for each variable.

	Male (N=51)		Female (N=68)		Total (N=119)	
	M	SD	M	SD	M	SD
Parental Bonding Scale						
Care	4.47	0.68	4.53	0.87	4.51	0.79
Protection	2.57	0.81	2.57	0.89	2.56	.85
Psychological Separation Inventory (PSI)						
Confliction Independence	2.77	0.60	2.91	0.59	2.86	0.59
Undergraduate Loneliness Scale						
General Scale	2.50	0.70	2.26	0.68	2.4	0.69

3.3.2 Hypotheses verification

The aim of this research was to analyse how confliction independence, caused by the two factors of "protection" and "care" within parental bonding attitudes, interacts with loneliness. We examined the modelling fit performance for this part of the research using structural equation modelling. We describe the model fit performance of the hypothetical models adopted in this study below.

The "Parental Bonding Attitudes Scale" we adopted in my research is composed of two sub-scales. We used the total scores of all questions in each sub-scale as the indicator variables;

higher scores represent higher tendencies of perception. To understand how “Parental Bonding Attitudes,” “Confliction independence” and “Loneliness” interact with each other, I examined all three of these variables together to explore whether they are consistent with the proposed hypotheses. We show the causal modelling diagram for this theory in figure two.

In hypothesis one, we stated, “The care bonding attitude of parents affects the loneliness of an individual”. The standard-solution values derived from first-phase path analysis in figure two indicate that the β value for “Care” \rightarrow “Loneliness” is 0.03 with an absolute value less than 0.05. Therefore, the interaction among all three variables is not significant. The path coefficient, t value, for “Care” \rightarrow “Loneliness” did not reach the alpha level of 0.05.

In hypothesis two, we stated, “The protection bonding attitude of parents affects the loneliness of an individual”. The standard solution of the path analysis in figure two indicates that the β value for “Protection” \rightarrow “Loneliness” is 0.13 with an absolute value more than 0.05. Changing one unit of “Protection” causes a change of 0.13 units of “Loneliness”. However, the path coefficient, t value, for “Protection” \rightarrow “Loneliness” did not reach the alpha level of 0.05.

In hypothesis three, we stated, “The care bonding attitude of parents affects the confliction independence of an individual”. The standard solution of the path analysis in figure two indicates that the β value for “Care” \rightarrow “Confliction independence” is 0.36 with an absolute value more than 0.05. Changing one unit of “Care” causes a change of 0.36 units of “Confliction independence”. The path coefficient, t value, for “Care” \rightarrow “Confliction independence” is significant at $p < 0.05$.

In hypothesis four, we stated “The protection bonding attitude of parents affects the confliction independence of an individual”. The standard solution of the path analysis in figure two indicates that the β value for “Protection” \rightarrow “Confliction independence” is 0.24 with an absolute value more than 0.05. Changing one unit of “Protection” causes a change of 0.24 units of “Confliction independence”. The path coefficient, t value, for “Protection” \rightarrow “Confliction independence” is significant at $p < 0.05$.

In hypothesis five, we stated, “Confliction independence affects the loneliness of an individual”. The standard solution of the path analysis in figure two indicates that the β value for “Confliction independence” \rightarrow “Loneliness” is 0.23 with an absolute value more than 0.05. Changing one unit of “Confliction independence” causes a change of 0.23 units of “Loneliness”. The path coefficient, t value, for “Confliction independence” \rightarrow “Loneliness” is significant at $p < 0.05$.

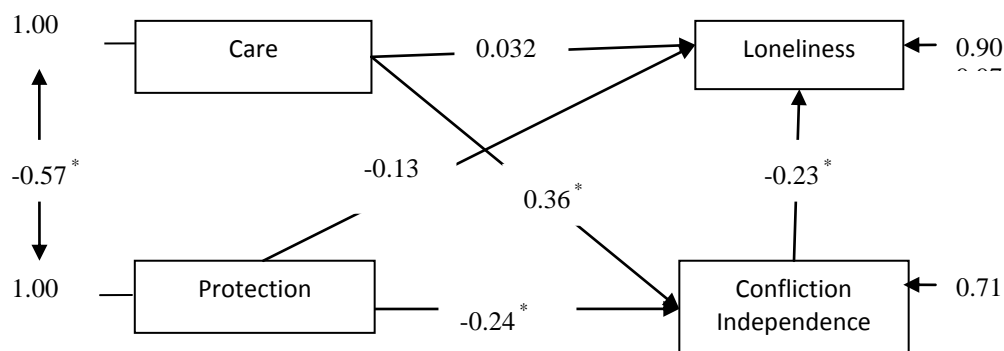


Figure 2 - Undergraduate loneliness interpreted by the causal modelling diagram derived from standard-solution values of first phase path analysis for ($p < 0.05$).

This research model indicates that “the fit is perfect”, meaning that it is eligible for model fit performance criteria, and the adopted theoretical model is consistent with the actual data.

Figure two shows the causal modelling diagram derived from first phase path analysis for "Undergraduate Loneliness". For the "Care" → "Loneliness" path, the t value was 0.26. For the "Protection" → "Loneliness" path, the t value was -1.15. The estimated values of these two parameters are not significant. Among the standard-solution values derived from path analysis, one path coefficient failed to reach the significance level (standardised regression coefficient). However, the absolute value derived from the "Care" → "Loneliness" path ($\beta=0.03$) was less than 0.05, representing a very small interaction among all variables.

In the first phase path analysis examining the main variables of interest, some paths demonstrated non-significant interactions. Therefore, it is necessary to amend the causal modelling diagram in figure two.

According to the path analysis, results derived from the construct variables paths with extremely low levels of significance should be removed, and three other hypothetical models should be proposed. The first model eliminated the "Care" → "Loneliness" path because it yielded an absolute value less than 0.5 and a t value lower than 1.96. The second model eliminated the "Protection" → "Loneliness" path because it yielded a t value lower than 1.96. The third model eliminated both of these paths simultaneously. We adopted competition modelling to confirm which of these three models yields the best assessment of undergraduate loneliness. Bagozzi and Yi (1988) and Hair et al. (1998) asserted that overall model fit performance can be measured by three criteria, absolute model fit performance, incremental model fit, and parsimonious model fit performance.

Table two shows the fit performance of each of the three models. In terms of absolute model fit, the χ^2 values of two models are significant at $p < .05$. In terms of other model fit measurements, all indicators of model fit performance are significant except the RMR value, which failed to reach the standard model fit performance criteria. goodness of fit index (GFI) and adjusted goodness of fit index (AGFI) indicators both represent a model's interpretation capacity of researched objects. A value greater than 0.9 indicates that a model adequately fits the variables of interest. Table two shows that all three models are eligible for fit performance criteria. However, the model in which the analysis path "Care" → "Loneliness" was eliminated yielded better data interpretation than the other two models. In terms of the standardized root mean square residual (SRMR) indicator, these three models are all smaller than 0.05, so all three models are eligible for model fit performance criteria.

In terms of parsimonious model fit, the Critical Number (CN) values of all three models are greater than 200, representing model fit standard. However, the parsimonious normed fit index (PNFI) and parsimonious goodness-of-fit index (PGFI) values of all three models are less than the model fit criteria value of 0.05.

In the analysis of incremental model fits, the five indicators, normed fit index (NFI), relative fit index (RFI), incremental fit index (IFI), non-normed fit index (NNFI) and comparative fit index (CFI), are calculated by comparison with an independent model. Values greater than 0.90 indicate that the model fit criteria has been met. The five indicators of all three models are greater than 0.90 and therefore demonstrate excellent incremental model fit performance. However, the model with the "Care" → "Loneliness" path eliminated demonstrates better model fit performance than the other two models.

To summarise, in terms of the three criteria (absolute model fit, incremental model fit, parsimonious model fit), all three models demonstrate adequate model fitting capacity for the research variables. However, the model with the "Care" → "Loneliness" path eliminated seems to have the better model fit. Therefore, we decided to adopt the model with the "Care" → "Loneliness" path eliminated as the hypothetical model for this research. Figure three shows

the causal model derived from second phase construct variables with the elimination of the path "Care" → "Loneliness".

Table 2 - Comparisons on performance of three-model fitness

Model Fit Indicators	Eliminating Care→Loneliness	Eliminating Protection→Loneliness	Eliminating Care→Loneliness combined with Protection→Loneliness	Model Fit Decision-Making
Absolute Model Fit Measurement Index				
χ^2 value	0.05($p=0.82$)	1.45($p=0.23$)	2.18($p=0.34$)	Yes
RMR value	0.52	3.35	5.07	No
SRMR value	0.00	0.0	0.0	Yes
RMSEA value	0.0	0.0	0.0	Yes
GFI value	1	0.99	0.99	Yes
AGFI value	1	0.94	0.95	Yes
				Yes
Incremental Model Fit Measurement Index				
NFI value	1	0.99	0.98	Yes
RFI value	1	0.92	0.94	Yes
IFI value	1.01	1.00	1.00	Yes
NNFI value	1.05	0.98	0.99	Yes
CFI value	1	1.00	1.00	Yes
Parsimonious Model Fit Measurement Index				
PNFI value	0.17	0.16	0.33	No
PGFI value	0.10	0.10	0.20	No
CN value	15622.08	540.61	498.88	Yes

The analysis paths indicate that "Care" directly influences "Confliction independence," that "Confliction independence" directly influences "Loneliness," and that "Care" and "Protection" indirectly influences "Loneliness" due to the involvement of "Confliction independence". The t value of each model was greater than 1.96, indicating that all models' estimated values reached the significance criteria value of 0.05. The "Protection → Loneliness" path yielded a t value of less than 1.96, but it was close to the significance criteria of 1.96. This path also demonstrated a standard-solution value of 0.14 and an absolute value more than 0.05, indicating that "Protection" influenced "Loneliness" directly.

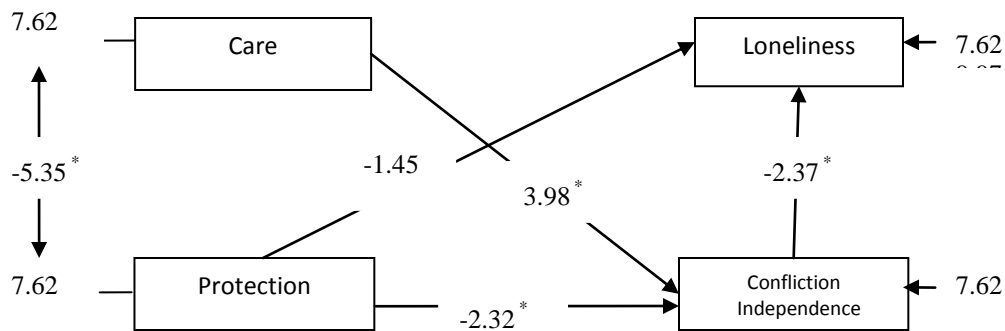


Figure 3 - Undergraduate Loneliness interpreted by the causal modelling diagram derived from standard-solution values of second phase path analysis for $p < 0.05$.

The measurement results of overall model fit performance in table three indicate that RMR=0.52, PNFI=0.17, and PGFI=0.10, fail to reach the model fit criteria, although all other values reached it. Overall, the unsaturated path analysis we adopted for this research is highly consistent with the obtained data; representing excellent model fit performance and feasibility.

Table 3 - second phase measurement results of the overall model fit performance for evaluating Undergraduate Loneliness

Testing Statistics	Model Fit Criteria or Threshold Limit Value	Measurement Statistics	Model Fit Decision-Making
Absolute Model Fit			
Measurement Index			
χ^2 value	$p > 0.05$	P=0.82	Yes
RMR value	< 0.05	0.52	No
SRMR value	≤ 0.05	0.0048	Yes
RMSEA value	< 0.08 (< 0.05 excellence)	0.0	Yes
GFI value	More than > 0.90	1	Yes
AGFI value	More than > 0.90	1	Yes
Incremental Model Fit measurement index			Yes
NFI value	More than > 0.90	1	Yes
RFI value	More than > 0.90	1	Yes
IFI value	More than > 0.90	1.01	Yes
NNFI value	More than > 0.90	1.05	Yes
CFI value	More than > 0.90	1	Yes
Parsimonious Model Fit Measurement Index			
PNFI value	More than > 0.50	0.17	No
PGFI value	More than > 0.50	0.100	No
CN value	> 200	15622.08	Yes

We summarise the comprehensive-effect values and indirect-effect values derived from the SIMPLIS statement in table four. The direct effect indicates how external variables (independent variables) interact with internal variables (dependent variables). The indirect effect indicates

how external variables interact with the internal variables indirectly. We can validate the proposed hypotheses from the data shown in figure three and table four.

Hypothesis one: "The care bonding attitude of parents affects the loneliness of an individual". When the first-phase path analysis was conducted, the β value for "Care" \rightarrow "Loneliness" was 0.03, representing non-significant interactions among all variables. The path coefficient did not reach the significance criteria of 0.05. Therefore, when the value of "Care" was high, it did not improve "undergraduate loneliness". The research measurement results indicate that hypothesis one is incorrect.

Hypothesis two: "The protection bonding attitude of parents affects the loneliness of an individual". Figure three and table four both indicate that "Protection" directly influenced "Loneliness", yielding a direct-effect value of 0.14. This means that there is a positive interaction between "Protection" and "Loneliness". Changing one unit of "Protection" will cause a change of 0.14 unit of "Loneliness". Hypothesis two is supported by the current study.

Hypothesis three: "The care bonding attitude of parents affects the confliction independence of an individual". Using the data in figure three and table four we can say that "Care" directly affects "Confliction independence", yielding a direct-effect value up to 0.38 and a t value greater than the significance criteria. This means that there is a positive interaction between "Care" and "Confliction independence". Changing one unit of "Care" will cause a change of 0.38 unit of "Confliction independence". Therefore, hypothesis three is supported by the current study.

Hypothesis four: "The protecting bonding attitude of parents affects the confliction independence of an individual". The data I show in figure three and table four confirms that "Protection" directly influences "Confliction independence", yielding a direct-effect value up to 0.22 and a t value greater than the significance criteria. It means there is a reserve interaction tendency between "Protection" and "Confliction independence". Changing one unit of "Protection" causes a change of 0.22 unit of "Confliction independence". Therefore, hypothesis four is supported.

Hypothesis five: "Confliction independence affects the loneliness of an individual". The data in figure three and table four shows that "Confliction independence" can interact directly with "Loneliness", yielding a direct-effect value up to 0.23 and a t value greater than the significance criteria. Changing one unit of "Confliction independence" will cause a change of 0.23 unit of "Loneliness". Therefore, hypothesis five is supported.

Hypothesis six: "Confliction independence has a mediating effect on the relationship of the care bonding attitude of parents and loneliness". From figure three, and table four we can deduce that "Care" directly influences "Loneliness", yielding a direct-effect value up to 0.09. This means that "Care" causes "Confliction independence", and "Confliction independence" subsequently causes "Loneliness". Hypothesis six is supported.

Hypothesis seven: "Confliction independence has a mediating effect on the relationship of the protection bonding attitude of parents and loneliness". We can deduce from figure three and table four that "Protection" directly influences "Confliction independence", yielding a direct-effect value up to 0.05. This means that "Protection" causes the outbreak of "Confliction independence", and subsequently, "Confliction independence" influences "Loneliness". Hypothesis seven is supported.

Table 4 - Interacting effects among all variables

Interaction Path	Direct Effect	Indirect Effect	Total Effect
Care → Loneliness	0.03	0.09	0.09
Protection → Loneliness	0.14	0.05	0.19
Care → Confliction independence	0.38		0.38
Protection → Confliction independence	0.22		0.22
Confliction independence → Loneliness	0.23		0.23

We can conclude that “Care” has a significant positive effect on “Confliction independence” ($\beta=0.38$, $p<0.05$) and “Confliction independence” has a significant negative effect on “Loneliness” ($\beta=0.23$, $p<0.05$). Accordingly, this means that personal perception of parental care can enhance “Confliction independence”, and increasing “Confliction independence” will relieve individual “Loneliness”. We can interpret such an interaction path as parental “Care” indirectly interacts with “Loneliness” because of the meditation effect of “Confliction independence”.

“Protection” demonstrated a significant negative influence on “Confliction independence” ($\beta=.22$, $p<.05$) and “Confliction independence” has a significant negative effect on “Confliction independence”, so there is a reverse interaction between “Confliction independence” and “Loneliness”. We can interpret such an analysis as perception of parental “Protection” interacts indirectly with “Loneliness” because of the meditation effect of “Confliction independence” on “Loneliness”.

4. Discussions

4.1. Interaction between parental bonding attitude and loneliness

In hypotheses one and two, we examined the influence of “Parent bonding attitudes” on “Loneliness”. Current research shows that the parental “Care” attitude did not significantly influence “Loneliness”. This means that we cannot relate the tendency for undergraduates to feel “Loneliness” to their parents behaving with positive care attitudes (such as offering caring, acceptance, and loving, or negative care attitudes, such as apathy, rejection, ignorance, or negligence). Researchers deduced that the phenomenon could result from the trend towards both parents working (double incomes) in our ever-changing society, leaving less time for parents to communicate with their children. The increasing development of the internet, means that individuals try to obtain care from alternative sources, to relieve their loneliness. Research by McKenna et al. (2004) indicated that 47% of interviewees thought that surfing the internet could relieve loneliness. Dittmann (2003) stated that there is a positive association between the duration of undergraduate internet usage and their relief from loneliness. The duration of internet usage indicates just how much undergraduates use the internet to seek objects or other people that offer care. Further research is required to test and validate these assumptions.

In this study, we found that “parental protection attitudes” significantly influence “Loneliness” which means that when parents adopt positive protection attitudes, such as self-discipline and encouragement for independence, there is less undergraduate loneliness. And, on the contrary, when parents adopt negative protection attitudes, such as excessive mental interference, strict requirements for obedience, and excessively restrictive and authoritative attitudes, there is a greater frequency of failure by children to meet these requirements which

causes more symptoms of loneliness, such as low self-esteem, hopelessness, and sadness. These findings comply with most previous research (Biggam & Power, 1998; Canetti et al., 1997; Martin & Waite, 1994; Parker & Power, 1982).

4.2 The interaction between parental bonding attitudes and individualisation

In hypotheses three and four, we examined how two major mental factors of parental bonding attitudes affect "Confliction independence" in terms of psychological separation-individualisation. We found, "parental care attitudes" significantly influenced "Confliction independence", which is consistent with previous research (Symond, 1949; Erikson, 1950; Becker, 1964; Siegleman, 1965, 1966; Medinnus, 1961; Bollman, 1967). This indicates that when parents adopt positive care attitudes, such as offering care, acceptance, and love, this cultivates well-developed self-perception and stability. The individual understands that each parent recognises the need for independence, which avoids emotional confusion and increases willingness to confide in each other. This higher level of "Confliction independence" decreases the tendency to bear negative emotions, such as anger or guilt, toward one's parents. When parents adopt negative attitudes, such as apathy or negligence, this precludes an environment in which parents and children communicate to cultivate individual understanding of proper relationship standards and expressions of negative emotions. This results in lower levels of "Confliction independence", causing impediments to handling mental apathy against parents (Tsai & Wu, 1998, cited in Chen, 2010).

"Parental Protection attitude" also significantly influenced "Confliction independence" in this study, as evidenced in past research (Symond, 1949; Erikson, 1950; Becker, 1960; Bandura & Walters, 1959; Medinnus, 1961). This indicates that when parents adopt positive protection attitudes, such as encouraging independence, and displaying positive affection, it can result in children understanding that their parents are stable and strong supporters and increase their self-confidence, which prevents insecurity or anger caused by short-term separation from parents and higher levels of "Confliction independence". On the contrary, when parents adopt negative protection attitudes, such as excessive mental domination, unreasonable protection, abusive obedience requirements, and overly strict and authoritative behaviour, it prevents development and the learning of proper interpersonal relationship skills, and causes negative attitudes towards parents without the means to express and handle such feelings (Shun, 1997, cited in Chen, 2010).

4.3. The interaction between Psychological Separation-Individuation and Loneliness

In this study, "Confliction independence" was significantly negatively associated with "Loneliness". This means that bearing excessive guilt, anger, and hatred towards parents during the development of psychological separation-individualisation, leads to incompetency in maintaining stable, harmonious, positive relationships and in avoiding stressful situations with parents. Most research results show that the inability to handle negative attitudes towards parents worsens loneliness and increases emotional problems (Hoffman & Weiss, 1987). In contrast, competency in handling negative attitudes towards parents increases the ability to adapt to life at university (Rice et al., 1990; Rice, 1992; Clauss, 1995). Well-developed psychological separation-individualization is beneficial because it integrates past, present and future experiences and increases the likelihood of successful participation in each phase of life (Sabatelli & Mazor, 1985).

4.4. The interaction between parental bonding attitudes, psychological separation-individualisation, and loneliness

To interpret the development and subsequent influence of undergraduate loneliness and to test hypotheses six and seven, I established a theoretical model of loneliness to examine the mediating effect of "Confliction independence" between "Parental bonding attitudes" and "Loneliness". The result of the Structural Equation Model Analysis showed that model fit performance was excellent, indicating that "Confliction independence" was a significant mediator between "Parental bonding attitudes" and "Loneliness".

One of the leading psychodynamics scholars, Sullivan (1953), said that loneliness results from a failure to cultivate sufficient care and love due to insufficient interaction, leading to the development of self-negation, a lack of confidence around others and isolation. Object Relation Theory assumes that individual internal subject and object manifestations originate from interactions with supportive caretakers, mainly during childhood, and become the internal foundation for an individual's perception of their status, other people and the external environment. Based on this theory, when parents adopt positive care attitudes, such as giving care and love, or positive protection attitudes, such as developing intimate relationships and encouraging independence, the child learns to develop stable interpersonal concepts about themselves and others (Mahler et al., 1975). This also results in the ability to perceive oneself and others as individuals, and to conquer the fear of losing independence and suffering loneliness.

In contrast, when parents adopt negative care attitudes, such as apathy or negligence, or negative protection attitudes, such as excessive domination or unreasonable authoritative educating, the child fails to learn how to set proper interpersonal separation between themselves and others. They also lack stable concepts of themselves and others and are subject to influence, sensitive to criticism, and desperately pursue praise, recognition, love, and care. They attempt to love others but get frustrated due to the quantitative or qualitative gap between the expected and actual feedback from interpersonal relationships (Peplau & Perlman, 1982) and thus frequently suffer from loneliness.

5. Conclusions

5.1 Promoting positive "Feasible" parenting education

From this research, we can conclude that excessive parental domination and unreasonable parental protection attitudes prevent the development of psychological individualization-separation. The reason is that the individual growth phase requires both the learning of proper interpersonal relationships with parents, and experiences in the external world. Boszormeny and Spark (1973) said that both excessive parental affection and unreasonable authoritative parenting impedes the child from learning self-perception and competency in establishing intimate relationships, and prevents children from achieving successful individualisation, leading to feelings of guilt and suffering in the desire for independent authority.

First-phase individualisation develops in childhood and second-phase during adolescence (Blos, 1979). Blos proposes that "regression" and "association support" provide impetus to the adolescent to develop individualisation. Regression support can enable the adolescent to re-live a past experience and correct interpersonal experiences with the help of "association groups" that foster competency for defining clear interpersonal relationships (Blos, 1979); and cultivate a more practical perception of self and parents (Lapsley et al., 1989). Taiwanese case studies show that there is higher individual autonomy in a student's first year at university and higher probability of and a tendency for conflict with parents with restrictive protection attitudes. Current research suggests that parents should be more attentive to children's opinions and offer encouragement and care during the two developmental periods, reduce protective attitudes,

replace rejection and apathy with concern and care and encourage self-responsibility instead of excessive parental domination. If they follow these suggestions, they can achieve healthy "Feasible" parental bonding attitudes for children.

5.2. Consultancy courses for promoting self-exploration

Fulmer et al. (1982) emphasised that most of the problems for which undergraduates seek help from the consultancy centre for, indicate difficulty in developing separation and individualisation during adolescence. Students develop symptoms of loneliness and anxiety but claim they are due to studying, career concerns, or interpersonal disturbances instead of directly blaming their own families. Choi (2002) proved that there is a positive interaction between undergraduate adaptation and confliction independence. This means that the more positive attitudes derived from psychological separation-individualization the better the undergraduate adapts.

This study shows that higher levels of Confliction independence performance can provide relief from loneliness. Confliction independence performance consists of stable interpersonal concepts of oneself and others, the capacity to regard oneself and others as individuals and conquering the fear of losing individual independence. University mental consultancy centres should offer more courses educating students about the benefits of self-analysis, so they can better understand themselves and their parents' expectations of them. This would help them to define their own role and status, enhance individualisation and reduce loneliness.

5.3. Suggestions for future research

5.3.1 Sampling expansion

As the participants of this study consisted of undergraduates from two universities in Northern Taiwan, the conclusions are restricted. We suggest that future studies use nation-wide sampling, such as stratified random sampling in four districts (northern, central, southern, eastern) to ensure nation-wide representation and get a broader view. Blos (1979) asserted that second-phase psychological separation-individualisation develops during adolescence; therefore, we could expand the age range of the sample to include the entire adolescent age range. Future studies could include junior and senior high school students and examine differences in psychological separation-individualisation between and among the different age groups, and how parental bonding attitudes affect loneliness.

5.3.2. Exploring the interaction between "Parental care attitudes" and "Parental protection attitudes"

Some researchers proposed that the most feasible parental bonding attitude portfolio is composed of high care and low protection attitudes. Excessive parental protection attitudes combined with low parental care attitudes increase children's susceptibility to disease (Clifford, 1959; Maccoby & Martin, 1983; Gittleman et al., 1998). Li (1992) indicated that excessive parental care, "authoritative" or "excessive parental care but low authoritative attitudes" results in high levels of mental instability in children (cited in Chen, 2010).

After conducting a survey of 82 male soldiers with an average age of 22, Hsieh and Lon (2005) documented that excessive discipline attitudes results in poor adaptation (cited in Chen, 2010). Hsu (2002) discovered that high school students suffering depression commonly perceive their parental bonding patterns as "low affection control pattern", featuring insufficient parental care and excessive protection attitudes. Ching (2004) also asserted that excessive parental protection (domination) could damage the child's personality development, based on a survey of men above the age of 18. Insufficient parental care is clearly relevant to children's susceptibility to

melancholy and loneliness.

In summary, only sufficient parental care coupled with low protection is eligible as a “Feasible” parenting bonding pattern, and the other three patterns (excessive protection with low care, low protection with low care, and excessive protection with abusive care) cause poor mental development. This proves that a mutual interaction effect exists between the two factors of “parental care attitude” and “parental protection attitude”. Results from my research lead me to conclude that in order to explore whether there is a mutual interaction effect between “Confliction independence” and “Loneliness” we require more comprehensive research on “parental care attitude” and “parental protection attitude”.

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