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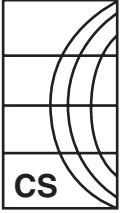
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The Interlocking Trajectories between Negative Parenting Practices and Adolescent Depressive Symptoms

Chyi-In Wu

Academia Sinica, Taipei

abstract: Previous studies have shown strong evidence of the association between negative parenting practices and adolescents' depressive symptoms. However, most of these findings are based on cross-sectional data, which can only detect the association from a static perspective. They are not able to detect the dynamic relationship between parents' harsh parenting and adolescents' depressive symptoms. The interlocking trajectories between negative parenting practices and adolescent depressive symptoms may serve as the core of a theoretical framework that can better capture the origins of adolescents' behavioural development. This article incorporates a life course perspective to discuss how mothers' negative parenting practices and depressive symptoms among the adolescent generation interlink. Using data from a panel design longitudinal study across a three-year period, and employing latent growth curve (LGC) analysis, which was used to estimate trajectories of change in adolescents' depressive symptoms and their mothers' harsh parenting, this study traces the links between negative parenting practices and adolescents' depressive symptoms in a dynamic manner. In general, the findings of this study support the hypothesis that there is an interlocking relationship between mothers' negative parenting practices and adolescents' depressive symptoms.

keywords: adolescent ♦ depressive symptoms ♦ interlocking trajectories ♦ latent growth curve analysis ♦ parenting practices

Introduction

Studies on the escalating prevalence of depression during adolescence have been conducted worldwide (Compas et al., 1993; Ge et al., 1994; Overbeek et al., 2001; Radloff, 1991). Similarly, the rapidly rising rates of depression among adolescents in Taiwan have attracted increasing

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academic attention (Mu et al., 2001; Wu and Lei, 2003). Adolescence is recognized as a period of great change for adolescents and their families alike. This stage in the family life course is usually one characterized by emotional outbursts and tension, where there exist more exceptions than rules (Coleman, 1993; Steinberg, 2001), a period of countless challenges. Of all the challenges, the most important is for adolescents to renegotiate their own position in the family, while being able to maintain a warm and supportive relationship with their parents (Laible et al., 2000). A vital aspect determining the successful resolution of this challenge is the quality of adolescents' attachment to their parents. Interestingly, attachment has transformed from a concept used primarily to describe the affectionate bonds between infants and their mothers to a broader concept, considered now to be influential throughout the entire life span (Bowlby, 1982; Lopez and Gover, 1993).

It is theorized that during early childhood children form an internal working model of attachment according to attachment experiences with important others (Colin, 1996). According to this internal working model, if an individual experiences a high quality of attachment, he or she is likely to view him- or herself as worthy of love, and to think of the world as dependable and predictable. In contrast, an individual who has a low quality of attachment is more likely to deem him- or herself as unlovable and to see his or her social environment as untrustworthy and unpredictable. Specific attachment relationships and affective bonds have an influence over an individual's entire life span, and their impact is particularly salient when the individual is under strain or during periods of intense life change (Lopez and Brennan, 2000). As a period of much potential stressful change and turbulence, attachment relationships are thus particularly relevant during adolescence.

Several studies have shown that adolescents who experience warm, loving and intimate relationships with their parents are less likely to exhibit problem behaviour (Barnes and Farrell, 1992; Deković, 1999). On the other hand, a low quality of attachment has been associated with higher incidences of problem behaviour among youths (Laible et al., 2000). Furthermore, Rutter (1985) has argued that competent parenting involving the provision of a sound family environment was conducive to adolescents' healthy cognitive, emotional and social development. Nevertheless, the developments of adolescence may impose upon the family environment, and affect the quality of adolescents' attachment to their parents. Apparently, parenting practice is the most critical factor in the quality of adolescents' attachment to their parents since parenting affects the parent-child relationship. The type of family environment that has been created is an indication of the affectionate bonds between adolescents and their parents.

Based on the assumption that a low quality of attachment is associated with views of oneself as unlovable, one would expect a negative relationship between attachment and internalizing problem behaviour, such as anxiety and depression. Indeed, empirical studies have indicated that adolescents with a low quality of attachment to their parents report higher levels of depression (Laible et al., 2000). From a theoretical point of view, one would also expect a negative association between the parent-child relationship and an adolescent's externalizing problem behaviour, such as aggression and delinquency, since an adolescent with a low quality of attachment would view the social world as untrustworthy and undependable, resulting in an acting out against this unsympathetic environment. Empirical studies have indicated the importance of attachment during adolescence and take it as a concomitant of psychosocial adjustment. Usually, associations between attachment and internalizing or externalizing problem behaviour were inferred as showing the influence of attachment on psychosocial adjustment. However, there are several reasons to expect that a reverse effect also exists. For example, internalizing problems could influence the perception of an adolescent's quality of attachment with parents. An anxious and depressed adolescent may not regard the relationship with parents as very constructive. Besides, having a delinquent child could make such demands on the family that the relationship between adolescent and parent deteriorates to a very serious degree (Barnes and Farrell, 1992).

In addition, based on various empirical evidence, it is widely accepted that an adolescent's exposure to physical abuse is related to a mass of negative outcomes. Some of the problems associated with abuse include alcoholism and depression (Carlin et al., 1994; Kolko, 1992), aggressive and violent behaviour (Patterson, 1986) and academic and interpersonal difficulties (Malinosky-Rummell and Hansen, 1993). Although such undesirable outcomes of child abuse are well established, not many studies have focused on children's exposure to a less severe and more normative form of violence, i.e. corporal punishment. We define corporal punishment as 'the use of physical force with the intention of causing a child to experience pain, but not injury, for the purpose of correction or control of the child's behavior' (Straus, 1994: 193-218). Corporal punishment is an acceptable childrearing practice in Taiwan, as it is in most other countries. For instance, Wu and Chen (2001) found that more than 70 percent of parents in Taiwan employed some form of corporal punishment to discipline their children. In the US, it is reported that about two-thirds of parents agree that, 'It is sometime necessary to discipline a child with a good hard spanking' (Straus and Mathur, 1996: 91-105).

It has been suggested, however, that corporal punishment should be considered as a form of violence towards children. Although 'legitimate'

corporal punishment does not result in injury, it is possible that some of the same negative outcomes associated with abuse will be displayed by those who are exposed to corporal punishment. Indeed, there is convincing empirical evidence that corporal punishment is a risk factor for later spousal abuse, child abuse, depression, suicide and alcohol abuse (Turner and Muller, 2004). For example, Turner and Finkelhor (1996) found positive associations between the frequency of corporal punishment and psychological distress and clinical depression. Furthermore, although children who were frequently exposed to corporal punishment had the highest levels of distress and depression, even moderate or low exposure to corporal punishment was found to have a negative impact on children's well-being. Nonetheless, a more recent study, surprisingly, found that the frequency of other forms of parental discipline was more strongly related to adolescents' depression than was corporal punishment (Turner and Muller, 2004). This finding provides some support for the theory that it is frequent discipline rather than corporal punishment per se that in general is the most problematic for children.

Whether it is the issue of attachment or corporal punishment, both are related to an even more essential factor, namely the quality of parenting practice per se. Corporal punishment is considered a typical indication of negative parenting practice, while adolescents' attachment to parents is considered as the primary measure of the parent-child relationship and is largely determined by the quality of parenting. Many studies have indicated that effective parents are warm and supportive, able to set standards and monitor their child's behaviour, are consistent in enforcing rules and avoid harsh punishment (Amato, 1990; Maccoby, 1992). At the same time, research has indicated that adolescents are at risk of developing problems and psychological distresses if their parents fail to engage in these kinds of parenting practices (Baumrind, 1991; Maccoby and Martin, 1983).

As mentioned earlier, adolescence usually corresponds to a vulnerable era of development in the pre-adult years, characterized by rapid physical growth and psychological change. It is also manifested by an expansion of these individuals' roles into a more complicated social world, which exposes them for the first time to a wide range of stressors and life-shaping choices. While many empirical studies have found that most adolescents pass through this transitional period without significant difficulties, a variety of children will experience a maladaptive response to the biological, psychological and social changes during their adolescent years (Ge et al., 1994; Rutter, 1986). Other extensive evidence has indicated that both intra-personal and interpersonal factors serve as sources of an adolescent's psychological distress (Downey and Coyne, 1990; Phares and Compas, 1992). Among these factors the family context is often thought to be crucial (Conger and Elder, 1994), since adolescents and their families are bound

together by shared experiences and consequences. With committed and nourishing parents, the likelihood for family relations of a similar quality will be increased. Conversely, self-destructive, unstable parents frequently have unstable relationships with their offspring (Elder, 1984). This mutual interdependence can be expressed in a dual perspective of life course dynamics: that people are changed by changing families, and that families are changed by changing the behaviour and developmental course of family members (Elder et al., 1986). Nonetheless, the extent and nature of the links appear to be quite complicated and have still not yet been fully explored. Several issues need to be addressed further regarding the family context and, in particular, the interdependence between parenting practice and emotional well-being of adolescents.

In the present study, I investigate the interdependence between two generations to test the hypothesis that harsh parenting signifies mutually reinforcing dynamics across adolescence, and persists from one adolescent time period to the next through a pathway of interlocking trajectories. Theoretically, both the dynamics and their continuation across the generations are subject to wide variation in relation to life circumstances. In this research, I am more interested in both the conditions of stability (or persistence) and of variation (or change) whereby the interdependent chain is altered. This study, accordingly, employs a life course theoretical framework, which emphasizes behavioural continuities and discontinuities, the history of behaviour patterns, personalities and social relationships throughout the life span of an individual (Elder et al., 1986).

Interlocking Trajectories across the Generations

Previous studies on the individual life course have often overlooked the broader context, such as the life trajectories of family members and relatives. This individualistic bias is all too visible in the rapidly growing field of life event studies. Judging from measurements and research done thus far, the life events that count are those that occur within a person's life (Barrett, 1979). Death, divorce, redundancy, severe illness, disability and so on were only taken into account when they occurred in the individual's life course but not when they happened in the lives of important others such as parents, children and grandchildren. However, empirical reality reflects a far different perspective, viewing life courses of each generation as interlocking trajectories. Life events such as divorce, unemployment, illness or death happening to one's children, parents or grandparents all have consequences for an individual's own life experiences. The interweaving of generational trajectories implies a temporal convergence with remarkable implications for each life course. The strengths and vulnerabilities of older and younger generations may offset or reinforce one another.

A major issue in recent years concerns the extent to which adolescent trajectories are determined by the course of their early life experiences. Brim and Kagan (1980) stress, with regard to the flexibility of life span development, that many individuals possess great capacity for change, and the consequences of events in early childhood are continually transformed by later experiences, making the course of human development more 'uncertain' than anyone could envision. Consistent with this standpoint, studies show that various forms of problem behaviour through adolescence do not necessarily predict a problematic future (Vaillant, 1983). Self-regulating mechanisms set a ceiling on behavioural continuity (Elder et al., 1986). Nevertheless, questions about continuity are plagued by methodological difficulties. Rather than seeking to provide overall estimates of continuity in behavioural development, this study adopts a more useful strategy by asking what parts of one's life sustain this continuity and under what conditions.

Often the continuity of behavioural development is the actual mechanism by which the adolescent initially acquires problematic characteristics. Most theoretical frameworks locate the origins of problem characteristics with the family. This study, however, tries to focus on the dynamic of intergenerational linkages, enquiring into the process that bears directly upon the puzzle of how such continuity is possible. Intergenerational linkages, then, represent a potential source of continuity and integration amid the ever-fluid convergence between family members. Elder (1995) has pointed out that the life of one generation is linked to another. For instance, parents make decisions on available options, which will later become the building blocks of their children's evolving life course. Coleman (1988, 1990) has discussed how families provide financial, human and social capital for their later generations. Cooksey et al. (1997) has stressed that adults provide social capital through the relations that they build with their children. Knoester (2003) has indicated two main issues with regard to the interlocking trajectories of generations. One is the effect of life events on the parent-child relationship. The other is how the relationship between parent and child influences the psychological well-being of both generations. The latter argument involves research into linkages between parent and adolescent depressive symptoms. Ge et al. (1994) has shown that warmth and involvement in parenting were negatively related to adolescents' depressive symptoms, whereas harshness and disciplinary inconsistency in parenting were positively related to adolescents' depressive symptoms. Downey and Coyne (1990) measured the efficacy of parents' ability and found it to be decreased by depression. Conger et al. (1992) found that parents' harsh disciplinary practices are increased by depression, with negative adolescent outcomes. Based on these theories, this study investigates these linkages to formulate a better understanding of

family trajectories, and aims to evaluate more accurately the independent causal mechanism of the interlocking of these trajectories.

In sum, this article incorporates a life course perspective, stressing that the two generations are interdependent, and discussing how the relationship between negative parenting practices and depressive symptoms of the later generation are intertwined. Usually, the younger generation lives in the shadow of the parent generation, a shadow marked perhaps by violent tendencies. This study examines the circumstances under which adolescent maladjustment occurs and discusses how its influence persists across the course of adolescence.

Method

Sample and Procedures

The data used in this study come from a long-term project funded by the Taiwanese National Health Research Institute on adolescent drug abuse. The project started in 1996. Its subjects are students of public and private junior high schools in Taipei. It is a follow-up study, tracking subjects over a three-year period. A two-stage cluster approach was used to generate a sample of seventh graders. The first stage involved selecting two to four schools from each of the 12 Taipei school districts. The number of schools selected from each district was proportional to the number of schools in the district. In the second stage, one or two classes were selected from each school, with the number of classes selected being dependent on the size of the school. All of the students in the selected classes were included in the sample. The initial sample consisted of 1343 male and female adolescents selected from the seventh grades of 33 junior high schools in and around Taipei.

Interviewers visited the adolescents and their families in their homes. The parents responded to questionnaires that included items regarding the behaviour of their children, and the adolescents completed questionnaires that included items regarding the behaviour of their parents as well as their own situation with regard to depressive symptoms. Furthermore, the target students and their parents completed questionnaires focusing on issues such as parenting, psychological adjustment, self-concept, health, social support and economic status.

According to the data, the average age of the mothers was 41 and the fathers, 45. Twenty-five percent of fathers and 15 percent of mothers have completed at least some college education. Occupational classification indicated that 50 percent of the fathers held a professional, managerial or technical position. Consistent with this finding, the reported monthly income for the target families ranged from US\$1500 to US\$20,000, with an average of US\$2494.

The following measures were employed.

Adolescent Depressive Symptoms. The study employed the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1983) to measure adolescents' depressive symptoms. It includes 47 behaviour items measuring how frequently various depressive symptoms such as headache, trouble falling asleep and sadness have occurred during the past week, on a five-point scale from 1 (never) to 5 (often). The 47 items were summed to create a depression symptom score. Cronbach's alpha for this scale is .96.

Harsh Parenting. Harsh parenting consisted of four items for adolescents' self-reporting. The items were adapted from Straus et al. (1980) and asked the respondents to indicate how their parents interacted with them. The four items were as follows: (1) 'When you have done something wrong, how often has your mom lost her temper and yelled at you?' (2) 'When you have done something wrong, how often has your mom spanked or slapped you?' (3) 'When punishing you, has your mom ever hit you with a belt, stick, or something else?' (4) 'When you have done something wrong, how often has your mom told you to get out or locked you out of the house?' Response categories ranged along a five-point scale, with 1 = never, 3 = about half the time and 5 = always. Cronbach's alpha for adolescents' report is .75.

Data Analysis

Because the analytic strategy employed in this study is not normally used in social-epidemiological studies, it is described here in some detail. This study is devoted to an analysis of a three-wave panel data set of adolescents' depressive symptoms and their mothers' harsh parenting practices to investigate the probability of an 'interlocking' relationship between the two issues. The study used latent growth curves (LGC) to estimate the trajectories of change in adolescents' depressive symptoms and their mothers' harsh parenting using a structural equation modelling program (Mplus 2.22; Muthén and Muthén, 2001). These trajectories describe intra-individual change over time by estimating the initial levels (the intercept) and rates of change (a slope). To investigate the trajectories of individual change in a variable, two latent constructs corresponding to the initial level and the slope are defined in an SEM (structural equation model). Measurements of the variables at different time points are used as multiple indicators of the two latent constructs in the LGC model (see Figure 1). Measurements of the variables of adolescents' depressive symptoms and mothers' harsh parenting at different points in time (dep. [depressive symptoms] t1, dep. t2, dep. t3; par. [harsh parenting] t1, par. t2, par. t3) are used as indicators of the two constructs. The model is used to generate maximum-likelihood estimates. Cases with missing values were deleted listwise.

Table 1 *Descriptive Statistics of Research Variables*

Variable	N	M	SD
Adolescents' depressive symptoms at time 1	1434	61.31	17.02
Adolescents' depressive symptoms at time 2	1354	62.82	19.15
Adolescents' depressive symptoms at time 3	1304	65.48	21.80
Mothers' harsh parenting at time 1	1414	5.82	2.62
Mothers' harsh parenting at time 2	1342	5.67	5.54
Mothers' harsh parenting at time 3	1293	5.52	2.30

Note: N = number of cases; M = mean; SD = standard deviation.

LGC allows one to investigate both developmental change and stability over time. The parameters of intra-individual change, initial level and rate of change are expected to be different from person to person. Furthermore, LGC allows the researcher to examine systematic intra-individual differences at both the initial level and slope for a latent construct. In brief, the choice of an appropriate mathematical function to represent true individual change is a crucial initial step in growth curve modelling (for more detail, see Wickrama et al., 1997: 148–9). In the following analyses, this study hypothesized that intensification in mothers' harsh parenting would lead to an upsurge in adolescents' depressive symptoms; however, this study did not predict the exact rate of change since there is no pre-existing theory or empirical work available as a guide.

Results

Table 1 indicates that, overall, adolescents' scores of depressive symptoms increased steadily during the three-year panel study period (i.e. from seventh grade through ninth grade). In particular, there is a significant increase between time 2 and time 3 (corresponding to eighth and ninth grade). Part of the reason is that most of the respondents had to participate in the highly competitive high school entrance exam to qualify for general high school (Yi and Wu, 2004). Interestingly, overall levels of mothers' harsh parenting decreased slightly for the three-year survey period, though the differences are not significant. However, the accumulation of differences at mean level over three time periods cannot reflect

Table 2 Correlation Matrix of Study Variables

	Dep. t1	Dep. t2	Dep. t3	Par. t1	Par. t2	Par. t3
Dep. t1	1.00					
Dep. t2	.51**	1.00				
Dep. t3	.43**	.61**	1.00			
Par. t1	.24**	.17**	.08**	1.00		
Par. t2	.21**	.25**	.12**	.53**	1.00	
Par. t3	.15**	.21**	.17**	.49**	.61**	1.00

* $p < .05$, ** $p < .01$, $N = 1273$.

Dep. t1: Adolescents' depressive symptoms at time 1.

Dep. t2: Adolescents' depression symptoms at time 2.

Dep. t3: Adolescents' depression symptoms at time 3.

Par. t1: Mothers' harsh parenting at time 1.

Par. t2: Mothers' harsh parenting at time 2.

Par. t3: Mothers' harsh parenting at time 3.

the exact changes at the individual level (Wickrama et al., 1997). From Table 1, one can only detect information about long-term change at the aggregate level. Table 1 also shows that mothers' harsh parenting is more stable than adolescents' depressive symptoms.

Table 2 presents the zero-order correlations between adolescents' depressive symptoms and mothers' harsh parenting across the three panel survey periods. Table 2 shows that both depressive symptoms and harsh parenting are reliable measures across time since the correlation coefficients among those measures are reasonably strong (.51, .43 and .61 for depressive symptoms across three waves; .53, .49 and .61 for harsh parenting respectively). Furthermore, the correlation coefficients between depressive symptoms and harsh parenting along the three waves are also all significant at $p = .01$ level. Table 2 suggests that there exists a mutual relationship between adolescents' depressive symptoms and mothers' harsh parenting, and this relationships lasts for a rather long time period.

Based on the information presented in Tables 1 and 2, this study went on to do a series of analyses using the LGC model, with the intention of revealing the 'latent trait' of the relationship between adolescents' depressive symptoms and mothers' harsh parenting practices. Table 3 shows that adolescents' depressive symptoms fitted very well in an independent LGC model (i.e. a model only including level and slope, the two latent constructs of adolescents' depressive symptoms). The mean and variance of the level for depressive symptoms are both statistically significant (.45 for mean and .29 for variance). It indicates that the initial average status of depressive symptoms for all respondents is .45 with a .29 variance. On the other hand, the mean and variance of the

slope for adolescents' depressive symptoms are also statistically significant (14.72 and 8.04 respectively). This indicates that the average rate of change of depressive symptoms for the whole sample is 14.72 with an 8.04 variation. In terms of statistics, the chi-square with 1 degree of freedom for this model is 2.07 and is not significant, which means the data fit the model pretty well. The phi coefficient is equal to $-.04$ and is not significant, which means the initial status of adolescents' depressive symptoms did not correlate with the velocity of change in adolescents' depressive symptoms. In other words, adolescents with a higher initial score of depressive symptoms did not necessarily get worse than any others at a more accelerated pace, and nor did those with a lower initial score.

Second, for mothers' harsh parenting, Table 3 shows that the empirical data also fitted the LGC model well (chi-square with 1 degree of freedom is .01, and not significant). The mean and variance of level for mothers' harsh parenting are both statistically significant (.07 for mean and .03 for variance). This indicates that the average initial standing of harsh parenting for the whole mother sample is .07 with a .03 variance. Alternatively, the mean and variance of the slope for mothers' harsh parenting are also statistically significant (.32 and .13 respectively), which implies the average change rate of harsh parenting for the mothers is .32 with a .13 variation. The phi coefficient for the basic mothers' harsh parenting LGC model is $-.36$ and is statistically significant, which means the initial standing of mothers' harsh parenting did correlate with the changing pace of their negative parenting practices. This denotes that mothers with higher initial intentions of harsh parenting usually retain a more stable pattern in parenting practices than others (mothers with a lower initial standing of harsh parenting are more likely to get 'harsher' towards their children). This finding is interesting in that it indicates that Taiwanese mothers of young adolescents seem to treat their offspring rigorously. Actually, it fits with the Chinese 'spare the rod, spoil the child' cultural tradition.

Figure 1 presents the analytic results of an integrated simultaneous LGC model. The model reflects that the data also fitted the model very well, although the p value is $<.05$, the rest of the indices of model fitting are all on a reasonable range (chi-square = 24.113, with 7 degrees of freedom, RMSEA = .04). Figure 1 indicates that the initial status (level) of adolescents' depressive symptoms is highly correlated with the initial intention (level) of mothers' harsh parenting practices ($\phi = .45, p < .05$), which means adolescents with higher depressive symptoms at the seventh grade (first wave survey) are more likely to have a mother who habitually practises harsh parenting. Consistent with Table 3, Figure 1 also illustrates that the initial status of adolescents' depressive symptoms

Table 3 Summary of Independent LGC Models

	Factor loading			Level		Slope		N	$\chi^2_{(1)}$	phi
	t1	t2	t3	Mean	Variance	Mean	Variance			
Adolescents' depressive symptoms	0	1	2	0.45*	0.29*	14.72*	8.04*	1300	2.07	-.04
Mothers' harsh parenting	0	1	2	0.07*	0.03*	0.32*	0.13*	1273	0.01	-.36*

Note: All intercept factor loadings are setting = 1, * $p < .05$.

did not correlate with the changing velocity of adolescents' depressive symptoms ($\phi = .10, p > .05$). Conversely, Figure 1 indicates that the initial status of mothers' harsh parenting negatively correlates with the changing pace of harsh parenting practices ($\phi = -.23, p < .05$). Further, the level (initial status) of adolescents' depressive symptoms has a negative direct effect upon mothers' slope (changing pace) of harsh parenting ($r = -.25, p < .05$), which means adolescents with a higher initial status of depressive symptoms tend to have mothers whose harsh parenting style remains stable. On the other hand, mothers' initial status of harsh parenting also has a directly negative impact on adolescents' changing rate of depressive symptoms ($r = -.23, p < .05$), which implies that an adolescent with a mother who habitually practises harsh parenting is more likely to stay at a higher level of depressive symptoms. In other words, one can expect that a household with a harsh-parenting mother puts the children at risk of staying at a higher level of depressive symptoms for a long time and it will not change dramatically. The most significant finding of this simultaneous LGC model shown in Figure 1 is that of the interrelationship between the slope of adolescents' depressive symptoms and the slope of mothers' harsh parenting ($\phi = .42, p < .05$). It suggests that the changing pace of mothers' harsh parenting parallels the changing velocity of adolescents' depressive symptoms in a very significant way. It signifies that any change in mothers' harsh parenting practices could 'cause' a parallel change in adolescents' depressive symptoms, although it was not the intention of this study to analyse the possible causal mechanism between these two critical issues. All in all, Figure 1 indicates that the growth curve of adolescents' depressive symptoms is clearly interlocked with the change in mothers' harsh parenting practices.

This study has addressed some of the methodological insufficiencies in previous research on parenting practices and adolescents' internalized

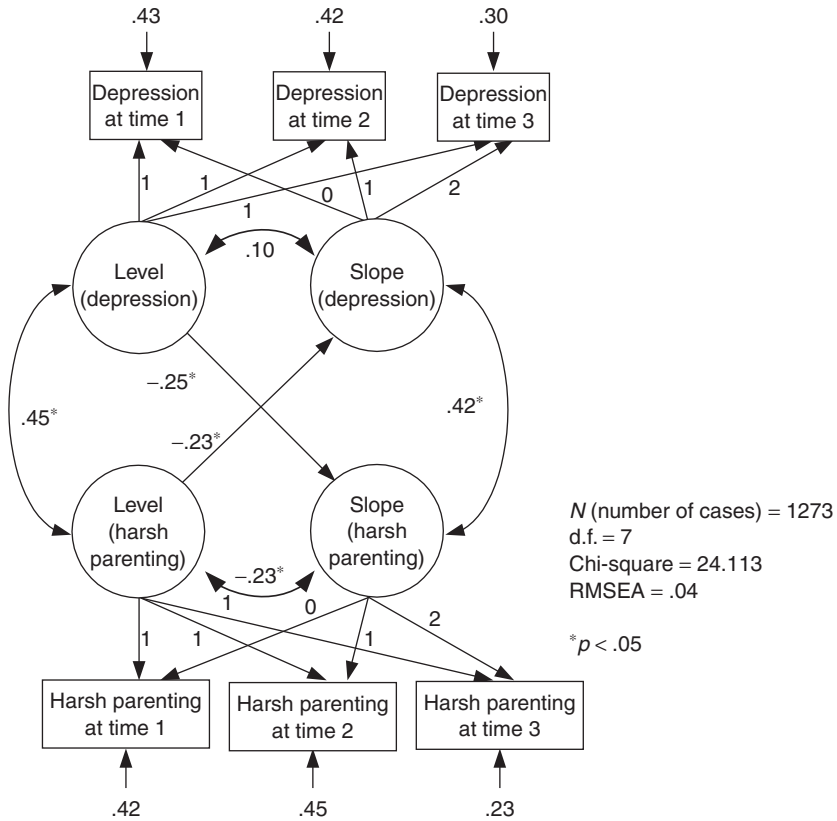


Figure 1 Simultaneous Latent Growth Model for Theoretical Framework

symptoms. LGC analysis allows researchers to investigate changes in negative parenting practices and changes in adolescents' internalized symptoms and the correspondence between the two constructs. The correspondence between individual trajectories of change in negative parenting practices and change in adolescents' internalized symptoms provides more convincing evidence of the systematic association between these two attributes than could be derived from autoregressive models such as cross-lagged panel analyses, since individual trajectories are the appropriate focus for the analysis of change (Rogosa et al., 1982). Consistent with the hypothesis, LGC results denote that inter-individual differences in changes in negative parenting practices were strongly associated with intra-individual differences in changes in adolescents' internalized symptoms. The findings suggest that an escalation of

harsh parenting over time is associated with an escalation of adolescents' internalized symptoms.

Summary and Discussion

There has been some debate about the relative contribution of parenting behaviour versus child individual differences to the development of childhood symptomatology (Dodge, 1990; Lytton, 1990). Rather than simply comparing parenting effects against child effects, transactional and goodness of fit models recognize that both are influential, and that integrating parent and child effects into one theoretical model may better explain the development of symptomatology (Sameroff, 1995; Thomas and Chess, 1977). An abundance of empirical evidence suggests that poor parenting practices are associated with depressive outcomes in children. Parental neglect and rejection, lack of positive reinforcement and involvement and extreme control have been associated with childhood depression (Burbach and Borduin, 1986; Cole and Rehm, 1986; Stark et al., 1990). Furthermore, children with parents who are uninvolved and unsupportive and children who are subjected to intense negative experiences (such as harsh discipline) may develop a negative schema of the self world, resulting in selective attention to negative events, avoidance, social withdrawal and, more seriously, depression (Rehm, 1977; Stark et al., 1990).

In a convincing way, these empirical findings have already indicated the possible association between parenting practices and adolescents' depressive symptoms. However, most of these findings are based on cross-sectional data, which can only detect the association in a static perspective since they refer to one time period only. In the technical terminology of LGC modelling, these findings only specify the links between the 'level' stages of harsh parenting and depressive symptoms (i.e. the left-hand section of Figure 1). They are not able to detect the dynamic relationship between mothers' harsh parenting and adolescents' depressive symptoms. In other words, the interlocking trajectories between parenting practices and adolescent depressive symptoms were overlooked by most previous studies. The interlocking trajectories between negative parenting practices and adolescent depressive symptoms may serve as the core of a theoretical framework better able to capture the origins of adolescents' behavioural development.

Using data from a panel design longitudinal study across a three-year period, this study has been able to demonstrate the linkages between negative parenting practices and adolescents' depressive symptoms in a dynamic manner. Parallel to previous findings, this study captures the static association (in mean level) between negative parenting practices and adolescents' depressive symptoms. In addition, using an LGC model, this study is also able to capture the dynamic association (in terms of

slope) between negative parenting practices and adolescents' depressive symptoms. One question might be raised here as to how the dynamic interlocking trajectories should be interpreted. It is not an easy question to answer; nonetheless, from the perspective of life course theory, I would argue that an adolescent's depressive symptoms and a mother's harsh parenting can serve as an ongoing life event for each of them. The life event is a critical factor in changes in an individual's daily life (Wu and Lei, 2003). One can envision that under the condition of stable harsh parenting on a daily basis, an adolescent might develop an accumulation of depressive symptoms. Later, at a crucial moment, he or she might become depressed and this could turn out to be a negative life event for the parents. Conversely, faced with a depressed child, a mother might need to alter her parenting practices in order to adapt to (to improve or worsen) her child's depressive symptoms. The scenario can be initiated by either side, and can be reversed. In any case, a change in one side could cause a change in the other in a continuous manner and this is the basic relational dynamic between adolescents and their mothers. This scenario is one of the possible outcomes of the interlocking trajectories between parenting practices and adolescents' depressive symptoms.

Such an association between individual changes provides stronger evidence to support the hypothesis that the trajectories of mothers' negative parenting practices and adolescents' depressive symptoms are interlocked in a dynamic manner. Furthermore, these associations remain significant even after controlling for time-invariant variables, such as education, and initial levels and changes in time-varying variables, such as family income. As a matter of fact, the history of research into adolescents' depressive symptoms within the family context strongly suggests that the influences are bidirectional. Life stress affects depression in both parents and children, and depressed mood leads to cumulating family problems and chronic strain (Hammen, 1991). Moreover, parental emotional distress increases the risk of inept parenting, which exacerbates the possibility of adolescent developmental problems, such as depressive symptoms. Intertwined in this complex web is the adverse influence that chronic family strains have on adolescents. All these findings suggest a complex series of causal processes in which distressed families experience greater vulnerability to the sort of life stresses that intensify adolescents' internalized emotional problems.

In general, the findings of this study are consistent with the hypothesis of an interlocking relationship between mothers' negative parenting practices and adolescents' depressive symptoms. Despite this empirical support, several factors limit the generalizability of the results. These analyses must be replicated with cross-cultural samples, with longer-term observation periods and with a broader cross-section of the population to increase the confidence in their general applicability.

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Chyi-In Wu is associate research fellow at the Institute of Sociology, Academia Sinica, Taipei, Taiwan, and affiliated associate professor at the Graduate Institute of Social Medicine, Taipei Medical University, and at the Graduate Institute of Social Informatics, Yen-Zu University, Taipei. Areas of research interest include: life course studies, adolescent mental health and healthy behaviours, adolescent friendship networks and social informatics.

Address: Institute of Sociology, Academia Sinica, Ian-Jio-Yan Rd, Second Section No. 128, Nankang, Taipei, Taiwan 115. [email: sss1ciw@gate.sinica.edu.tw]