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# Family Structures and Children's Behavioral Problems: A Latent Growth Curve Analysis

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**Family Structures and Children's Behavioural Problems:  
A Latent Growth Curve Analysis**

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***Abstract***

The current article analyzes 1994-2000 data from the Canadian National Longitudinal Survey of Children and Youth to examine the relevance of family structures to trajectories of parental reports on hyperactivity - inattention among elementary school aged children. A latent growth modelling approach is used to compare children living in intact families, lone-parent families, stepfamilies, and families where parents divorced or separated. The results highlight the apparent advantages to living in intact families and the slightly greater risks experienced by children living in stepfamilies. Children in lone-parent families, while experiencing an initial disadvantage, displayed a similar trajectory on hyperactivity to children in intact families over the 1994-2000 period. With regard to the children of divorce, the current study finds little evidence of a predisruption effect, as the children whose parents divorce or separate over 1994-2000 appear initially no worse off than children whose parents stay together.

**Key Words:** family structure, hyperactivity, children, developmental changes, latent growth curves

## **Family Structures and Children's Behavioral Problems: An Analysis of Trajectories of Child Hyperactivity**

The relationship between family structure and child development is somewhat unclear, as researchers continue to debate the relative importance of various family forms to the emotional and cognitive development of the young (Moore et al., 2002; Waite & Gallagher, 2000).

Although most Canadian data suggest that children across family types are doing relatively well, some limited evidence supports the idea that children in lone-parent families and in stepfamilies are at greater risk for developing behavioral and emotional difficulties (Lefebvre & Merrigen, 1998; Dooley et al., 1998). Similarly, despite a substantial literature on the impact of divorce on child well-being, no consensus exists as to the relative importance of marital breakdown on child development, both over the shorter and the longer term (Wallerstein, 2000; Amato & Keith, 1991). Some researchers have found evidence of a significant “disruptive effect” of divorce on child development (Popenoe, 1996), whereas others suggest that the available evidence at most provides mixed results regarding the potential negative consequences of this event (Houseknecht & Sastry, 1996).

Unfortunately, international research on such issues has been limited, partially due to the costs of developing national longitudinal datasets. Whereas Canada can be viewed as quite similar to the United States in many respects, a number of important differences can be noted: divorce is a less common event, fertility is significantly lower, women are less likely to give birth as teenagers, and the incidence of lone parenthood is not nearly as high. Nevertheless, relatively few studies have explicitly considered the impact of family structure and/or divorce on child outcomes in Canada with longitudinal data (Offord et al., 1987; Valla et al., 1994). Yet with the release of the fourth cycle of Canada's National Longitudinal Survey on Children and

Youth (NLSCY), a growing number of studies has examined the early life course of a representative sample of young children (Statistics Canada, 2000; Ram & Hou, 2003; Willms, 2002).

According to the first cycle of the NLSCY in 1994, a nontrivial percentage of elementary aged children in Canada could be classified as exhibiting hyperactive or inattentive behavior, which proved to be by far the most commonly observed behavioral problem as reported by the parents participating in the survey (Offord & Lipman, 1996). In addition, there has been a rather substantial climb in the percentage of children diagnosed with hyperactivity-inattention disorders in North America – a major concern to parents, educators, and the general public (Daley, 2004). Nevertheless, relatively little academic research in Canada explicitly examines the extent to which family structures and marital breakdown may contribute to the onset and trajectory of such behavioral problems (Schmitz, 2003). Whereas the etiology of hyperactivity is complex (including genetic and biological factors), sociologists and psychologists have long recognized that many externalizing problems manifested by young children may very well be caused by stressors within the home, at school, or among peer groups. In view of the dearth of Canadian longitudinal research on these issues, the current paper examines the relevance of family structure and marital breakdown on the trajectories on hyperactivity/inattention among children.

For current purposes, latent growth models (LGM) will be used in light of their potential to identify important predictors and correlates of change. The use of LGMs within the latent variable SEM framework has arguably been rather sparse among sociologists, particularly with Canadian datasets (Rogosa & Willett, 1985; Aber & McArdle, 1991; Duncan et al., 1999). Yet the method has a great deal of utility in analyzing child outcomes (especially compared to the standard autoregressive or residual change approach), as two-stage LGM allows for a

simultaneous analysis of both “initial status” (in 1994) and “trajectories” (over the 1994-2000 period). With such an analysis across different subsamples of children, defined through family structure and divorce, LGMs can provide unique insights as to how family forms potentially contribute to or help offset behavioral difficulties over time.

### **LITERATURE REVIEW**

Among Canadian children, the majority continue to be raised in “intact” families, defined here as families whereby all children live with both biological parents concurrently. For the majority of these families, the parents are legally married, although childbearing in common law relationships is becoming increasingly popular in Canada. Whereas clearly not all children living in intact families demonstrate a “healthy” level of adjustment as measured by standardized scales of well-being, much of the research over the years has confirmed the relative advantages of children living in stable, two-parent families as compared with lone-parent or stepfamily situations (Ram & Hou, 2003; Carlson & Corcoran, 2001; Dawson, 1991). Yet in documenting an association between family structure and child outcomes, it is not obvious as to why children in non-intact families appear to be somewhat disadvantaged. For example, the difficulties that parents report may *not* necessarily be primarily the result of being raised in a non-intact family situation, but, more accurately, the by-product of experiences that led to the formation of a lone-parent or stepfamily in the first place.

In emphasizing family structure as a crucial determinant of child well-being, the basic idea here suggests that the presence of both biological parents matters, i.e., that family structure has an effect independent of the many antecedent factors that may have lead to the formation of non-intact families in the first place (Biblarz & Gottainer, 2000). It follows that the increased frequency of lone parenthood has had an impact on the wellbeing of children, as non-custodial

parents frequently lose regular contact with their children (Beaujot, 2000; Marcil-Gratton, 1998; Peron et al., 1999). Children raised in lone-parent families obviously receive, on average, less parental supervision and especially that which might be provided by fathers. To the extent that fathers discontinue the investment of human and social capital in their children, the loss of regular contact and support expectedly will be a net negative for children, except in cases where the absent parent would have been harmful to the child. It has also been suggested that the wellbeing of the children is moderated to the extent that both parents can continue to be involved in a child's life after divorce or separation (Amato & Booth, 1997).

Whereas remarriage often leads to a significant improvement in the financial situation of children, it does not always lead to a significant gain in terms of parental supervision. Although stepparents potentially contribute to children both in terms of their time and financial resources, some evidence indicates that non-biological parents tend to be less involved with stepchildren as compared with biological parents – and may in some cases disrupt relations with the absent parent (Amato, 1998). Indeed, in some situations the concept of stepparent may be too strong, since the adult may be viewed more as the parent's partner rather than a parent (McLanahan, 2000). Children raised in stepparent families appear to fare just about as well (or as poorly) as children raised in single-parent families. That observation holds true in spite of the fact that the economic situation of stepfamilies tends to be significantly better, on average, than the economic situation of lone-parent families.

Certainly the research on the impact of family structure might be reworked in terms of the insights of Coleman (1988), who observed that child outcomes not only depend on the financial capital available to families (i.e. the income, property, and wealth of parents), but also the transfer of human and social capital to children. The financial capital available to children is



largely a function of the income of parents and transfers may be disrupted through parental separation. When one parent does not live with the child, there is the potential of a smaller transfer of human capital, i.e., the absent parent's education and experience may be less useful to the child. The transfer of social capital may be adversely affected as well, for the contacts and social relations that children receive from absent parents may be reduced.

More generally, Amato (1998) emphasizes that fathers are potentially important to meeting the economic and emotional needs of children. Unless one or both parents serve as net negatives for the child (such as through substance abuse or violence), children in intact families can most readily benefit from such transfers. In non-intact families, non-resident fathers can still provide these various forms of capital, but the conditions are often less than favorable. Children benefit less from the father's human capital in the first instance because they receive a lower investment in parental time (Bumpass, 1994). Separated parents have particular difficulties generating co-parenting social capital. Stepparents often have a similar problem, possibly because the child does not "buy into" the co-parenting social capital in the reconstituted relationship (Amato, 1998).

As mentioned previously, one of the difficulties in disentangling the consequences of family structure on children relates to the simple question: To what extent are the difficulties that parents report in lone-parent or stepfamilies the result of antecedent factors, or, more specifically, the by-product of experiences that led to the formation of a lone-parent family or stepfamily in the first place? In shifting our attention to the impact of divorce, the research has suggested that substantial parental conflict prior to marital disruption may in part help explain child behavioral problems, net of the subsequent impact of divorce or separation (Amato, Loomis, & Booth, 1995; Sun & Li, 2001). Although children may simply suffer as a result of the

conflict, they may also model problematic interpersonal styles or make self-attributions as to the causes of family conflict (Furstenberg & Teitler, 1994). In fact, persistently volatile familial contexts have been found to be more detrimental to children than marital dissolution (Hanson, 1999; Jekielek, 1998). As emphasized by Amato and Booth (1997: 238) “perhaps the worst situation for a child to be in is either a high conflict marriage that does not end in divorce or a low conflict marriage that does end in divorce.”

In this context, it is useful to distinguish between the so-called “family structure effect” and the potential “consequences of marital breakdown and conflict.” Whereas cross-sectional research tends to be problematic in terms of disentangling what may be happening in such contexts, prospective longitudinal research can potentially provide useful insights as to the dynamics at play. For example, prospective designs allow us to document how well children are doing both prior to *and* after a divorce, thereby providing evidence of what have been referred to as “pre-disruption effects” in the literature (Block et al., 1986). Indeed, Cherlin et al. (1998) have applied growth curve models to demonstrate how a significant part of the negative effect of parental divorce on a cohort of British children was actually the result of factors that were present before the parents’ marriages dissolved.

The link between family structure and children’s developmental outcomes may be overstated if researchers only focus on static or fixed-state comparisons. Much of the extant research concentrates on the outcomes or apparent impacts of family structure on children’s well-being, such as their educational attainment, cognitive outcomes, depression, labour market status, and deviance (Amato & Fowler, 2002; Biblarz & Gottainer, 2000; Ram & Hou, 2003; Sun & Li, 2001). The fact that many of these studies indicate statistically significant differences for some measures of children’s well-being in comparing, for example, lone-parent and two-parent

families, cannot be disputed. The problem, however, is that childhood development by definition implies a dynamic, interactive, and longitudinal process. The research that captures the complexities of these dimensions of social reality has been relatively sparse.

It has been argued that family processes are fundamentally causal in the development of child behaviors, from hyperactivity to antisocial behavior to delinquency (Paterson et al., 2000; Schmitz, 2003). As already observed, family structure can be considered relevant to the extent that there are differences in the human, social, and financial capital available to children across family types, such as in those situations where non-custodial parents lose regular contact with their children. Yet differences exist too for the custodial parents and stepparents. In particular, non-intact families in Canada are significantly more likely to involve younger and less educated parents, and are more likely to be disadvantaged by lower family income. Regardless of family structure, the prevalence of externalizing problems and hyperactivity is significantly higher among boys than among girls, although there is contradictory evidence as to whether boys or girls are more likely to experience greater declines in hyperactivity as they move toward adolescence (Schmitz, 2003).

In this context, the present study seeks to examine the interrelationships between family structure and hyperactivity among children, first by testing linear trajectories of hyperactivity and then by examining how these differ across subsamples defined in terms of family structure and divorce. It is expected that trajectories of hyperactivity will decline regardless of family structure or whether parents divorce or not, although the children in stable, intact families are expected to experience the greatest decline. In terms of initial levels of externalizing problems in 1994, it is expected that lone-parent families should be particularly disadvantaged, although, to a lesser extent, the same disadvantages are anticipated to affect children in stepfamilies. In

hypothesizing a predisruption effect, it is also expected that the children whose parents divorce or separate over 1994-2000 will be significantly worse off in 1994 (even prior to the event of marital breakdown) and that their trajectory over the 1994-2000 period will differ from children whose parents stay together. In light of financial, human, and social capital differences across family types, part of the initial disadvantage anticipated for children in lone-parent families and stepfamilies in 1994 should be reduced when introducing controls for relevant antecedent variables such as family income, age, and parental education in 1994. In addition, it is expected that a large part of the hypothesized “predisruption” effect for children whose parents divorce or separate over the 1994-2000 period will be reduced when controlling for a variable that explicitly measures the level of family dysfunction and conflict.

Underlying our work is the assumption that children experience stressors and difficulties across the full range of family structures. The many different types of families may experience relatively high levels of dysfunction, even though the parents involved may or may not divorce (cf. Demo & Acock, 1988). Most research studies have demonstrated that serious marital conflict exerts a detrimental influence on children, regardless of whether or not the families remain intact or the parents separate (Bishop & Ingersoll, 1989; Buehler & Gerard, 2002). In fact, serious parental conflict often precedes both child behavioral problems and marital disruption. Thus, under some circumstances, marital dissolution may actually alleviate some of the tension and stress experienced (Amato et al., 1995; Cherlin, 1999), although Spruijt & de Goede (1997) found that children’s well-being suffered slightly more in divorced families as compared with those living in dysfunctional but intact families or stepparent families (cf. Furstenberg & Kiernan, 2001). To examine these issues further, the current paper investigates

the relative importance of different family structures, both independently and in combination with several correlates, upon child behavioral outcomes.

## METHODS

### *Sample*

Human Resources Development Canada and Statistics Canada (1996) designed the National Longitudinal Survey of Children and Youth (NLSCY) to measure child development and well-being. This survey is enacted every two years, with the long-term goal of developing a national database on the life course of Canadian children from infancy into young adulthood. Based on the sampling frame of the Canadian Labour Force Survey, the vast majority of Canadian children are represented in the sample. The small proportion of children *not* represented in the NLSCY includes those who live in Canada's far north, the territories, residents of institutions, and persons living on Indian reserves (less than two percent of Canada's population). Apart from a significant reduction in the size of the longitudinal sample due to unforeseen cost constraints with the second cycle of the survey, the overall level of attrition in the NLSCY has been extremely low. More specifically, of the 15,558 children who were traced across all four cycles of the study (aged initially 0-11 in 1994), some 92% were still in the NLSCY sample in cycle four (aged 6-17 in 2000).

The current study utilized a narrower subsample of children due to the necessity of working with developmentally appropriate indicators on child outcomes that were measured in identical fashion across all four cycles of the NLSCY. Although age appropriate items were asked of all children, we focused on those aged 4-5 in 1994 because the exact same survey items on child outcomes were available for this cohort in 1994, 1996, 1998, and 2000. With extensive efforts to minimize attrition, some 92.1% of the children in the 1994 cohort were traced and

successfully re-interviewed. The final sample therefore included 1,902 children with consistent measures across all four cycles.

### *Measures*

In the NLSCY, researchers interview an adult caregiver for each selected child (typically the mother), identified as the “person most knowledgeable” (PMK) of the child’s experience. The NLSCY has benefited greatly from past efforts to maximize reliability and validity in the measurement of the psychological health of Canadian children (Tremblay, Vitaro, Bertrand, Leblanc, Beauchesne, Boileau, & David, 1992; Offord, Boyle, Racine, & Flemming, 1992; Offord, Boyle, & Jones, 1987). The current paper uses a behavioral scale based on each PMK’s responses to eight items that purport to measure “hyperactivity and inattention problems” – using several items drawn from previous Canadian research on child health (including the Ontario Child Health Study and the Montreal Longitudinal Survey). More specifically, interviewers asked parents whether their child “had trouble sticking to specific tasks,” “had difficulty in maintaining his or her concentration for an extended period,” “tended to act impulsively or without thinking,” “seemed inattentive,” “tended to fidget and have trouble sitting still,” “demonstrated an unwillingness to await his or her turn in games,” and “experienced difficulty in doing things in groups.”

These items formed an additive scale (ranging from 0-18), documenting the extent to which the PMK reported young children as inattentive, non-cooperative, or impulsive in their behavior (Cronbach’s alpha = .84). Measured in a consistent manner across all four cycles, higher scores on the scale indicated more extensive behavioral difficulties. Since the distribution of the scale had a moderate, positive skew, we transformed the scale by taking its natural log. The procedure was necessary to establish a reasonable fit in the subsequent LGM models. As

with other structural equation modelling procedures, the condition of multivariate normality should be satisfied in deriving useful models – a condition not easily met with many behavioral scales available in the NLSCY.

Relying upon a parent to report on his or her child's behavior, while simultaneously reporting on those factors that shape child outcomes, has certain problems – a point that will be considered further in the discussion. Other factors considered relevant in the current analysis include family structure, divorce, and separation over the 1994-2000 period, as well as information on the age and education of parents, the level of economic well-being of families, the reported level of family dysfunction, and gender of child. As will be demonstrated, these latter variables are considered important antecedent controls in clarifying the nature of the relationship between family structure, divorce/separation, and our primary focus on hyperactivity and inattention.

In an effort to address the relevance of family structure, children are classified according to whether they had lived in an intact family across the four cycles of the NLSCY (about 72% of children), had lived with two parents initially in 1994, but experienced divorce or separation prior to 2000 (about 14%), lived in a female-headed, lone-parent family for the full period (about 9%), or had lived in a stepfamily for the same six-year period (about 5%). Excluded from the sample and analyses were the small numbers of children who lived in male-headed, lone-parent families and those who were initially in lone-parent families, only to become reconstituted families by 2000. In an effort to isolate the potential effect of family structure, we selected the intact family to serve as the reference category for much of our analysis, with systematic comparisons made with the three other family types mentioned previously.

In recognizing the relevance of economic conditions in shaping the adjustment of children, an indicator of economic hardship is introduced, as based on Statistics Canada's low income cut-offs. More specifically, we introduce a control for whether or not a child's family is classified as "income poor" in 1994. Similarly, two additional antecedent controls are introduced: the age and education of the PMK (both measured in years) in 1994. In isolating the effect of family change, part of the association observed between family structure and child behavioral problems at cycle 1 is expected to be explained by the simple fact that the financial and human capital of parents in lone-parent and stepfamilies differ from those in intact families. The parents in non-intact families (including stepfamilies) are more likely to be classified as income poor, younger, and less educated than other parents. Children in non-intact families may be disadvantaged from the outset due to factors beyond the fact that they not benefit from the "co-parenting" of both biological parents simultaneously. In the Canadian context, the education and age of parents in stepfamilies is quite similar to lone parents (i.e. they are noticeably younger and less educated than the parents in intact families). On the other hand, in terms of family income, stepfamilies have more in common with intact families than lone-parent families – although again, they are slightly more likely to experience income poverty relative to intact families (Kerr & Beaujot, 2004).

The Chedoke-McMaster family functioning scale is also introduced into our analysis, which measures the degree of constructive and supportive relationships within the family (Epstien, Bishop, Ryan, Miller, & Keitner, 1993). This additive scale, based on a total of 12 items, provides a global measure of family functioning, with indicators for dimensions such as problem solving, communication, affective involvement, affective responsiveness, conflict resolution, and behavior control. The scale varies between 0 – 36, with higher scores indicating



a greater degree of family dysfunction. The unit of reference for the scale was the family, as the selected parent was asked whether family members were capable of making decisions together, resolving problems, whether they confided in each other, expressed feelings, and felt accepted, among a variety of other questions (Cronbach's  $\alpha = .88$ ). Although this scale has its shortcomings (particularly in terms of drawing comparisons between the quality of relationships in dual parent families relative to those headed by lone parents), we include it in this analysis given our interest in the possibility of a "predisruption effect" for children whose parents divorce or separate. Consistent with the literature, we expected family dysfunction (measured at cycle 1) will have a significant effect on reported child behavior – and potentially explain away part of the aforementioned "predisruption effect" anticipated in 1994 for children whose parents divorce/separate over the 1994-2000 period.

#### **ANALYTIC PROCEDURES**

For current purposes, latent growth curve modeling (LGM) procedures were used in the analysis of trajectories on externalizing behavioral problems. The LGM approach has enormous utility in the documentation and analysis of longitudinal change, especially in bypassing several of the inherent shortcomings of typical developmental models (Rogosa & Willett, 1985; Duncan, Duncan, Strycker, Li, & Alpert, 1999). This method is considered to be a particularly useful in the analysis of child outcomes, as two-stage LGMs permit a simultaneous analysis of both "initial status" (in 1994) and "trajectories" (over the 1994-2000 period). Building on the strengths of structural equation models (SEM), growth curve procedures provide a means of modeling development as a factor of repeated observations over time. Despite the potential to identify important predictors and correlates of change, the use of LGMs within the latent variable

SEM framework arguably has been underutilized by sociologists, particularly with Canadian datasets (Rogosa & Willett, 1985; Aber & McArdle, 1991; Duncan et al., 1999).

Since the LGM approach requires relatively large samples and the restrictive requirement of an equal number and spacing of assessments for all individuals (Duncan et al., 1999), the first four biennial cycles of the NLSCY lend themselves well to such an analysis. The availability of these multi-wave data offer important advantages, including the ability to test for the validity of straight line growth as opposed to some form of non-linear change. The LGM methodology typically involves two stages, commencing with efforts to fit the repeated measures on the dependent variable to some form of regression curve (not necessarily linear in nature). The second stage involves the parameters representing each individual's curve, which thereby becomes the focus of analysis. In the current context, this second stage involves two separate analyses. The first considers how the aforementioned family structure and divorce/separation variables influence these parameters, whereas the second includes the antecedent variables as important controls in potentially modifying these relationships.

In working with linear LGMs, two parameters describe the trajectory as observed for each individual child: (a) an intercept term representing initial status on externalizing behavioral difficulties (each child's 1994 score in the current example), and (b) a slope term representing the rate of change on the behavioral scale in moving from one cycle to the next over 1994-2000. The resultant mean and variance of the intercept latent factor represented the overall average and associated variance on the behavioral scale as observed initially among children aged 4 – 5 in 1994. The mean and variance for the slope latent factor represented the overall average of individual rates of change and the associated variance of these rates. Preliminary work with various quadratic terms suggest that the use of non-linear models do not lead to significant

improvements in fit – while potentially complicating our interpretation of change over time. As linear change is well represented in the two-factor LGM, the intercept and slope factors have straightforward interpretations as *initial status* and *change*, respectively.

Using this parameterization, it is possible to study predictors of each latent factor, of change separately from correlates of initial status (Duncan & Duncan, 1995; Schmitz, 2003). For example, in an analysis of the impact of divorce and separation on children's well-being, one could determine whether or not the event of marital dissolution over the 1994-2000 period served to predict the slope latent factor, as well as examine the relationship between such an event and the intercept latent factor. If the effect were found to be particularly pronounced with respect to the slope latent factor and *not* with the intercept, then the result would be consistent with the idea that the event of divorce or separation, as a distinct life course transition, presented particular difficulties for children. If such an event served as a strong predictor of initial status and *not* the slope latent factor, then that would be consistent with the idea that children were already particularly disadvantaged even before the event of divorce or separation – as one might expect in a family context of high levels of conflict and dysfunction.

For current purposes, the central focus was the impact of the family structure variables and marital dissolution on childhood difficulties, with and without controls for the other economic, family, and human capital variables. In examining the pattern of missing data for the current analysis based on a dataset with an attrition of only about eight percent, a reasonable approach involved treating missing cases as occurring at random. We used the maximum likelihood estimation procedure of AMOS 4 for the data analyses. Sample weights were used as recommended in the NLSCY guidelines, with cycle 4 longitudinal weights introduced in generating the necessary covariance matrices and descriptive statistics.

## RESULTS

In examining longitudinal data from the NLSCY, of considerable interest is whether or not childhood difficulties as identified relatively early in the life course should predictably increase or decrease with chronological age. With this in mind, Figure 1 presents the predicted trajectories of change on the hyperactivity-inattention scale by family type across the four cycles of the NLSCY. These results are based on a second-stage LGM that includes exclusively the family structure variables as covariates (Chi square = 154.31; df = 12; CFI=.940; NFI=.936; RMSEA=.068). Although not reported in Figure 1, this builds on a first stage LGM that predicted a linear reduction on the logarithmic scale. In running alternate models, the introduction of quadratic terms did not lead to a significant improvement in fit relative to this relatively straight forward linear model.

**(Insert Figure 1 about here.)**

Figure 1 demonstrates that, without exception, a decline in hyperactivity-inattention is reported across family types. Consistent with available knowledge regarding the age of onset and developmental course of this sort of behavioral problem, on average, children experienced a decline in hyperactivity-inattention as they moved through their elementary school years (Barklay, 1998). It is quite possible that the most serious difficulties that children experience are identified relatively early on, or especially with the child's entrance into the school system. Modest gains in reducing these problems suggest some success as a result of the social capital accessed through the education system (cf. Ryan, 2002). Without exception, in drawing comparisons across family types, children reportedly had fewer problems in 2000 than in 1994.

Consistent with the idea that family structure at least partly shapes child outcomes, the trajectories in Figure 1 differ somewhat by family type in terms of both initial scores and reported changes over the 1994-2000 period. For example, while the children in stepfamilies and lone-parent families both appear to be relatively disadvantaged at the outset in 1994, the slopes as associated with their trajectories differ somewhat, indicating that the children in lone-parent families experienced the greatest decline in hyperactivity over the 1994-2000 period. Whereas all trajectories indicate reduced behavioral problems, there is some variation by family type. For instance, the children in intact families and lone-parent families (for the full 1994-2000 period) appear to have done better than others – at least in terms of the hyperactivity-inattention scale. As a result, although children in lone-parent families had the worst scores initially in cycle 1, the children of stepfamilies reportedly have the most problems by cycle 4. In fact, the children living in lone-parent families in 2000 were not much different from those living in families where the parents separated or divorced.

In benefiting from longitudinal data, it is possible to directly test for the aforementioned predisruption effect by considering how well the children of divorce/separation are actually faring prior to the event of the divorce/separation of their parents. The NLSCY data permit such a possibility, as we can isolate children in 1994 living in intact families prior to the eventual divorce or separation of their parents over the 1994-2000 interval. Counter to expectations, Figure 1 demonstrates how these children in cycle 1 are *not* very different on the behavioral scale from children whose parents stay together over the 1994-2000 period. This is not consistent with our original hypothesis of a significant predisruption effect, as we expected that these children, on average, would have witnessed higher levels of conflict and dysfunction within the home – which would have been translated into higher levels of externalizing behavioral problems.

Whereas Figure 1 presents the predicted trajectories on hyperactivity-inattention by family type, Figure 2 more formally introduces the results from the LGM model upon which these trajectories are based. More specifically, Figure 2 demonstrates how LGMs provide for a systematic analysis of both the child's initial status in 1994 and the changes observed over the 1994-2000 period, working with the same covariates on family structure. In working with the log transformation on the behavioral scale, the mean on the intercept latent factor is 1.549 (with a variance of .256), which translates into a score of 4.7 in 1994. The mean on the slope latent factor is -.151 (with a variance of .030) which translates into a predicted average score of 4.1 in 1996, 3.6 in 1998, and 3.2 by 2000. Not reported in Figure 2 is a significant negative correlation between the intercept latent factor and the slope factor (at -0.271) which implies that, on average, the greater the initial disadvantage, the greater the gains observed over time. The overall fit of this LGM is considered adequate for our purposes, with both the NFI and CIF well above .9 (Bentler & Bonett, 1980) and the RMSEA well below the widely accepted cut-off of .08 (Browne & Cudack, 1993).

**(Insert Figure 2 about here.)**

Figure 2 confirms that children in lone-parent families and stepfamilies had significantly greater externalizing problems in 1994, while the children whose parents eventually divorced or separated were not significantly different from our reference category of intact families. These conclusions stem from an analysis of the intercept latent factor. Thus living in a female, lone-parent family acted as a significant positive predictor (.313) of behavioral problems in 1994, as was also true among those children living in stepfamilies (.200). On the other hand, the lack of significance with regard to divorce or separation directly contradicts our hypothesis of a predisruption effect. Although not reported in the current analysis, we have also considered

alternate models that attempt to be test for the effect of divorce/separation occurring over the 1994-1996 period, the 1996-1998 period, and the 1998-2000 period, on both the intercept latent factor and the slope latent factor. Again, a lack of statistical significance was documenting in predicting the intercept latent variable, which contradicts our hypothesis that these children would have been at an initial disadvantage in 1994.

In shifting the emphasis to the slope latent factor, being raised in a stepfamily acts as a significant positive predictor of externalizing behavioral problems (.090), as did divorce or separation over 1994-2000 period (.046). These results are reflected in the earlier Figure 1, as the predicted trajectory for children in stepfamilies and the children of divorce/separation was not quite as favourable as observed for children living in intact families (i.e. the sub sample selected as a reference category in the current analysis). The non-significant effect of living in a lone-parent family on the slope latent factor is consistent with the idea that these children experienced comparable gains to the children from intact families. It is again emphasized, however, that the children from lone-parent families in the aggregate had much higher average scores on the externalizing behavioral scale initially in 1994.

Table 1 provides the results for the full LGM that also involve the aforementioned antecedent controls, including information on the likelihood of income poverty, family dysfunction, parental age and education (all measured in 1994), as well as the child's gender. In delineating the effect of family structure on the well-being of children, this model controls for some of the differences in the financial and human capital of parents expected across family types – which in turn is expected to explain away at least part of the initial disadvantage of children living in non-intact families. Although we have not documented a significant

predisruption effect, we also introduce our control for level of family dysfunction in 1994.

Although the overall fit of our complete model declines, we consider the goodness of fit measures still acceptable in working with a relatively large sample (chi square = 403.47; df = 47; CFI = .883; NFI = .880; RMSEA = .069). In providing evidence as to the relative importance of these variables in explanation, Table 1 includes both the unstandardized and standardized coefficients along with corresponding standard errors.

**(Insert Table 1 about here.)**

As demonstrated in Table 1, all of the aforementioned controls (with the exception of the likelihood of low income) act as significant predictors of the intercept latent factor, whereas only gender of child acts as a significant predictor of the slope latent factor. As anticipated, the introduction of these controls served to reduce the effect of the family structure variables, although the children of both lone-parent families and stepfamilies continue to be disadvantaged from the outset. Even with the introduction of these controls, the effects of living in a stepfamily and/or in a family that experiences divorce/separation continue to be significant in predicting the slope latent factor, albeit relatively modest in magnitude. The current analysis does not control for change in economic well-being over time, which would likely serve as an important mediating variable in explaining the effect of divorce/separation on children.

With the exception of low income, all control variables were all found to be related to the latent intercept factor in a predictable manner. For example, family dysfunction serves as a positive predictor of childhood difficulties, while both parental age and education of parent act as negative predictors. On the other hand, in turning to the latent slope factor, all variables were found to be non-significant with the exception of sex of child. The results with this latter variable are consistent with expectations, as girls have long been known to have fewer



externalizing behavioral problems than boys. After introducing all of the aforementioned controls, the effect of family structure persists in explaining the initial behavioral scores in 1994, albeit with attenuated effects of these variables. The differences that remain suggest the need for further information beyond the current dataset, requiring data on additional antecedents affecting the life chances of preschoolers (many of whom were already disadvantaged at the age of 4-5 years in 1994).

### **DISCUSSION AND CONCLUSIONS**

In some respects, the results provided clear and unequivocal evidence. The parents from intact families reported that their children were less hyperactive-inattentive than was the case with parents in other family configurations. This was true both at the outset of the study (in 1994) and throughout the six-year period of observation (1994-2000). On the other hand, the differences as observed were not terribly large, particularly after controlling for relevant antecedent controls.

Whereas the family structure variables serve as significant predictors of both the intercept latent factor and the slope latent factor, it is advisable not to overstate their importance as contributory causes to childhood behavioral difficulties. Briefly, children who lived in lone-parent families for the full 1994-2000 period were found to be the most disadvantaged initially (in 1994), although we found that their mean score on hyperactivity-inattention was only about one half of a standard deviation from the mean for intact families. Although our results imply that children from lone-parent families were disadvantaged initially, they tended to improve quite noticeably over time (with their trajectories moving parallel to those of intact families). The reduction in hyperactivity for children raised in lone-parent families over the study period

were greater than those observed for children in stepfamilies, and, to a lesser extent, families that experienced divorce or separation. By the end of their primary schooling, these youngsters did not appear to be having any more difficulties than children whose parents separated or divorced while they attended elementary school. The children who seemed to be having the greatest difficulties were those living in reconstituted families, both at the outset and over time. Adjusting to these types of family transformations, at least in the early years, may have been somewhat unsettling and problematic for some children.

As mentioned previously, one of the obstacles in disentangling the consequences of family structure on children relates to the simple question: to what extent are the difficulties that parents report in lone-parent or stepfamilies the result of antecedent factors, or more specifically, the by-product of experiences that led to the formation of a lone parent or step family in the first place (Amato, Loomis, & Booth, 1995; Sun & Li, 2001). In this context, it is useful to distinguish between the “family structure effect” and the potential “consequences of marital breakdown and conflict.” As demonstrated in the current study, LGMs and prospective data allow us to isolate and document how well children are doing prior to the event of divorce, as well as analyzing their corresponding trajectories over time (Block et al., 1986). Although previous applications of growth curve models have suggested that a significant part of the negative effect of parental divorce is the result of factors present prior to marital breakdown, the current analysis did not disclose evidence of important predisruption effects. Our analysis of the intercept latent factor demonstrates how children whose parents divorced over the 1994-2000 period were not significantly worse off at the outset of our study than children whose parents remained together.

This finding is largely consistent with Amato's (1998) observation that the average level of discord prior to divorce and separation appears to have been declining in recent years, such that children are no longer as likely to experience an intense and extended period of conflict prior to divorce. Several decades ago the legal hurdles in obtaining a divorce were so great and the public attitudes against divorce so persuasive, that typically only the most conflict ridden of marriages ended in divorce. Under such circumstances, one would have expected that children prior to the event of their parent's divorce to be significantly worse off than other children. With the introduction of no-fault divorce in Canada in 1986, a reduction in the level of moral suasion against divorce, and a climb in the number of common-law relationships having children, the characteristics and perhaps the familial dynamics of persons who end their relationships have changed significantly. Amato and Booth (1997) have gone so far as to suggest that a majority of recent divorces in the United States are no longer the result of extended and heightened conflict. If conflict is not intense prior to most divorces, or if more parents manage to shield their children from such conflict, one would not expect a significant predisruption effect – an observation consistent with the current dataset.

In turning to the reported trajectories on child hyperactivity, the current study documented a relatively modest effect of divorce and separation. That finding supports Amato and Keith's (1991) conclusion that the effects of divorce on children have become weaker over time, or at least relative to the situation during 1960s and 1970s. Several changes are considered to be responsible for this development, including the observation that the children of divorce may feel less stigmatized today than was the case historically, particularly now that such a large proportion of all marriages end in divorce (Thornton, 1985). Other changes include the development of school-based interventions to assist children in their adjustments to their parents'

divorce, as well as improvements in mediation for parents undergoing court battles relating to child custody and the division of property (Booth, 1999). A variety of changes arguably may be responsible for reduced stress in families – with direct consequences for the well-being of children.

Other results from the current analysis strongly support existing knowledge about externalizing behavioral problems, including the higher risk among boys both at the outset of our study and over time (Barklay, 1998). Similarly, differences in human capital in 1994 across family types are relevant in explaining the initial disadvantages of non-intact families, as higher educated parents report fewer difficulties for their children, and having children at a relatively young age has also proved to be a risk factor in the current dataset. A higher level of family dysfunction adversely affected children at the outset, though the effects dissipated over time and in conjunction with the other correlates examined. Not expected in the current context was an absence of significance in terms of the effect of low income (in 1994) on both the intercept and slope latent factors. This absence may be explained in part by our simultaneous inclusion of education and age as controls, as younger, less educated parents are also more likely to experience economic hardship and poverty. Nor does the current study explicitly consider “change in family income” over the 1994-2000 period. That factor would expectantly act as an important mediating variable in explaining the effect of marital dissolution on children (Avison & Wade, 2002).

In reading the results from our analysis, one need not assume that children from intact families live in utopian environments, as children across the full gamut of family structures have exposure to marital and family discord. Baseline levels of conflict arguably exist in nearly every family situation, although the dynamics that lead some couples to separate or divorce may not

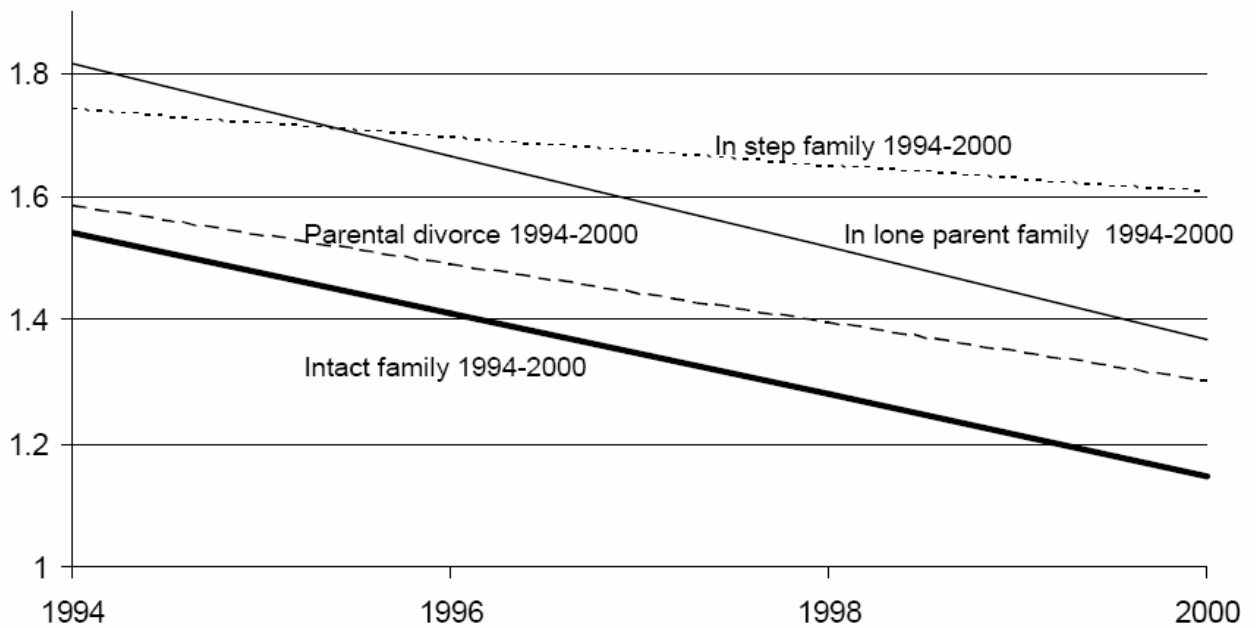
clearly differentiate them from those that continue to maintain intact families. Stated differently, family dysfunction and conflict are by no means limited to couples that end up terminating their relationships. Many adults continue to remain married and raise children regardless of considerable conflict or family dysfunction. While some children experience a great deal of conflict prior to the break up of their parents' relationship, others are obviously shielded from these sorts of difficulties. The evidence from the current study suggests that the majority of the children of divorced or separated parents did not experience the worst of their parents' marital discord. These are just some of the many factors that serve to obscure comparisons across family types, some of which become more apparent through the analysis of the alternative LGM models.

The effect of family structure and divorce/separation on children's behavioral problems over time are not easily disentangled, although the current paper has afforded an opportunity to investigate some of the complexities involved based on NLSCY data. In general, the latent growth modelling approach helped to isolate the relative importance of different family structures both as initial indicators of hyperactivity-inattention and in demonstrating the decline in this type of behavioral problem as children age. On the other hand, apart from the measures of economic and social well-being, the overall results have highlighted the difficulties that children living in stepfamily situations continue to confront. The dynamics associated with stepfamilies require additional research, as children living in reconstituted families displayed the highest levels of hyperactivity at the end of the study period (though once again one should be careful not overstate the differences observed).

The results should be interpreted cautiously as the dataset clearly did not contain the full range of structural factors (e.g., social network support), dynamic measures of family coping

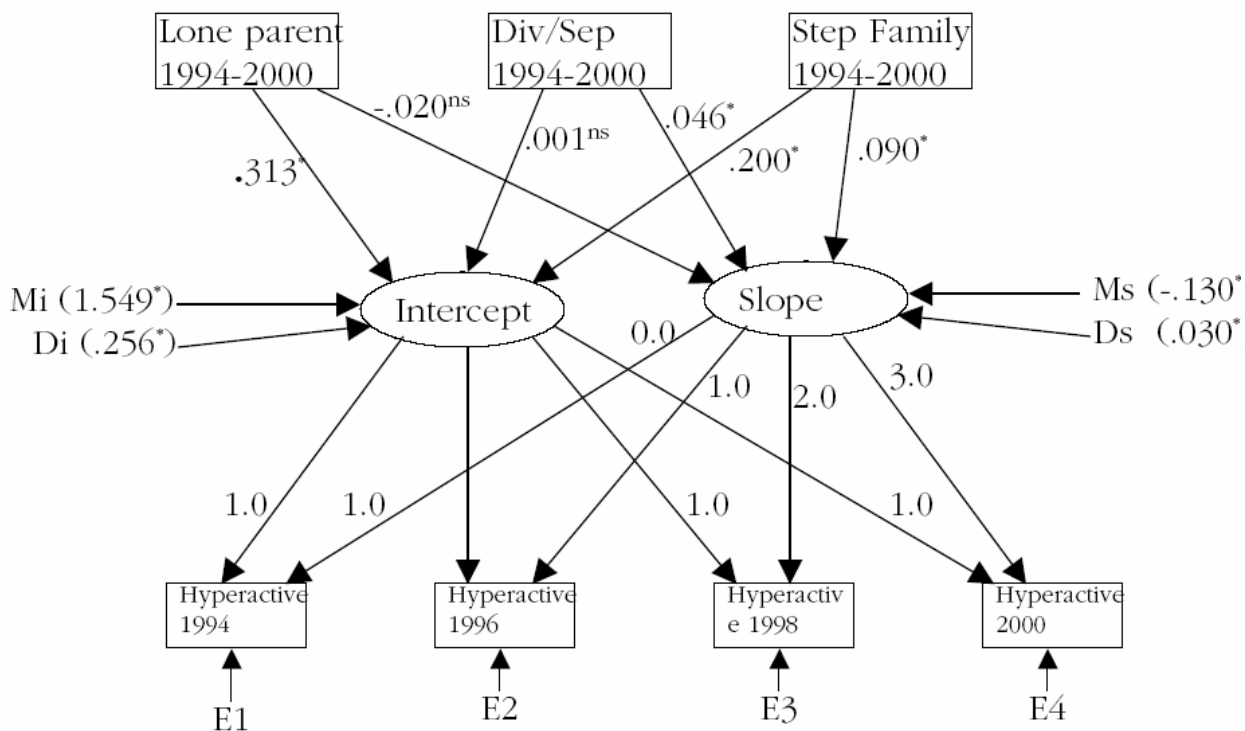
strategies, or personal characteristics that might further shed light on the relationships observed. Indeed, research has shown that parental depression and psychological well-being can adversely affect parenting processes and, subsequently, a range of child outcomes (Carlson & Corcoran, 2001). Furthermore, additional research is advisable as to potential problems in measurement. For example, the stigma associated with divorce, single parenthood, and stepfamily relationships may very well influence the manner in which persons respond to survey research. As suggested by Avison and Wade (2003) in arguing that “single parenthood” act as a “dubious risk factor” for children, it is possible that parents in non-intact families believe their own bad press to some extent – and subsequently overstate the difficulties that their children are perceived to experience. On the other hand, we cannot be sure whether or not the parents in non-intact families understate these very same difficulties, in coping with these same sorts of pressures and stigma.

Figure 1. Linear Growth Model of Hyperactivity – Inattention for Children Aged 4-5 in 1994, by Child's Family Structure 1994-2000 (n=1920)



Chi square = 154.31, df = 12; CFI = .940; NFI = .936; RMSEA = .068

Figure 2. Linear Growth Curve Second Stage Model of Child Externalizing Problems, with Family Structure Variables (Unstandardized) 1994-2000.



Chi square = 154.31, df = 12; CFI = .940; NFI = .936; RMSEA = .068



**Table 1**  
**Linear Latent Growth Curve Second Stage Model on Hyperactivity - Inattention; Unstandardized and Standardized Coefficients**  
**(Standard Errors in Parentheses; N=1920)**

	Initial level of hyperactivity - inattention			Rate of change in hyperactivity - inattention		
	Unstandardized	(SE)	Standardized	Unstandardized	(SE)	Standardized
<b>Family Structure</b>						
Lone Parent Family, 1994-2000	.239**	(.055)	.135	-.022	(.023)	-.037
Step Family, 1994-2000	.157*	(.068)	.066	.086**	(.028)	.106
Divorce/separation 1994-2000	-.017	(.042)	-.012	.034*	(.017)	.068
<b>1994 Variables:</b>						
Income Poverty 1994	-.013	(.038)	-.011	-.001	(-.020)	-.001
Family Dysfunction 1994	.004**	(.001)	.100	.001	(-.643)	-.022
Age of Parent (PMK 1994)	-.013**	(.003)	-.134	.001	(.251)	.009
Education of Parent (PMK 1994)	-.028**	(.011)	-.073	.001	(.173)	.006
Female Child	-.142**	(.029)	-.139	-.043**	(.012)	-.122

Note: chi squared = 403.609; 47 df; NFI = .88; CFI = .883; RMSEA = .069

\* p < .05; \*\* p < .01.

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