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## Economic Pressure, Parent Personality and Child Development: An Interactionist Analysis

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**Abstract:** »*Ökonomische Belastungen, elterliche Persönlichkeit und Entwicklung der Kinder: Eine interaktionistische Analyse*«. The current economic downturn in the U.S. and around the world has refocused attention on the processes through which families and children are affected by economic hardship. This study examines the response to economic pressure of a cohort of youth first studied 20 years ago as adolescents and now grown to adulthood. A total of 271 of the original G2 adolescents (*M* age = 25.6 years) participated in the study with their young child (G3, *M* age = 2.31 years at the first time of assessment) and the child's other parent in 81% of the cases. Data analyses were guided by the *interactionist model* which proposed that positive G2 personality attributes during adolescence would predict lower economic pressure during adulthood and would diminish the negative family processes related to economic pressure expected to disrupt competent G3 development. The findings were consistent with this social selection aspect of the interactionist model. The model also predicted that economic pressure and other aspects of the related family stress process would affect G3 development net of earlier G2 personality. This social causation aspect of the interactionist model also received support. The findings suggest that the relationship between economic conditions and child development reflect a dynamic process of selection and causation that plays out over time and generations.

**Keywords:** Economic Pressure, Personality, 3-Generations, Child Development.

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This research is currently supported by grants from the National Institute of Child Health and Human Development, the National Institute on Drug Abuse, and the National Institute of Mental Health (HD047573, HD051746, and MH051361). Support for earlier years of the study also came from multiple sources, including the National Institute of Mental Health (MH00567, MH19734, MH43270, MH59355, MH62989, and MH48165), the National Institute on Drug Abuse (DA05347), the National Institute of Child Health and Human Development (HD027724), the Bureau of Maternal and Child Health (MCJ-109572), and the MacArthur Foundation Research Network on Successful Adolescent Development Among Youth in High-Risk Settings.

The first decade of the new millennium (i.e., 2000-2009) has been one of economic uncertainty and instability in the United States and the rest of the world. In the U.S., economic growth has averaged slightly over 2% per year since 2000, compared to 3% per year during the previous two decades and 4% in the 1960s (U. S. Department of Commerce, 2009). Following the mid-1990s, housing prices soared, increasing on average nearly 50% after two decades of stability. Since then, the twelve-month change in nominal house prices has turned negative nationwide for the first time since the Great Depression, and mortgage loan foreclosures have soared (OECD, 2008), underscoring the significant economic distress in the U.S. as the decade draws to a close.

In addition, the total *unemployment rate* among those aged 16 years and over rose from 4% in 2000 to 5.8% in 2008, reaching 9.7% during June and July of 2009 and increasing to over 10% at year's end (U.S. Bureau of Labor Statistics, 2009). Also significant, the underemployment rate in the U.S. – that is, the proportion of people in the general population who would like a job but have been so discouraged by their inability to find one that they have given up looking – is around 16% (U.S. Bureau of Labor Statistics, 2009). Important as well, the 2000s saw continued growth in the inequity of *income distribution* established in the 1990s which strongly benefited the upper classes. The top five percent's share of total income in the U.S. grew from 14.6% in 1980 to 20.5% in 2008. At the same time, the lowest quintile's share has fallen from 5.3% in 1980 to its current share of around 4% (U.S. Bureau of the Census, 2009). Most remarkable, the top 20% of families account for almost 50% of aggregate income in the U.S. The current historical period, then, poses a great deal of economic risk for the average family in the U.S. and the parents and children who live in those families.

The present report focuses on the circumstances of a cohort of over 500 adults and their families currently facing these difficult economic times in the U.S. Cohort members and their families are participants in a 3-generation study of rural Iowa families that began 20 years ago in 1989. The Family Transitions Project (FTP) is a community-based panel study of over 500 early adolescents now grown to adulthood (G2), their close-aged siblings, their parents (G1), their romantic partners, and their oldest biological child (G3). The FTP originally began as a study of rural family response to the severe recession in the agricultural economy in the U.S. during the 1980s (Conger & Elder, 1994; Conger & Conger, 2002). The G2 youths from the original study are now in their 30s with families of their own and they face a recession in national and local economies similar to the one experienced by their parents 20 years ago. Consistent with trends for the nation as a whole, a recent telephone interview with the G2s (September and October, 2009) showed that 39% of them experienced a decline in financial assets during the past year, compared to only 13% of them reporting such a decline in 2007. Similarly, 17% reported reduced income during the past year compared to 5% in 2007. Thus, these families

appear to be reasonably representative of average American families being buffeted by the current downturn in the economy.

## Economic Hardship, Family Processes and Child Development

Results from our program of research so far, and from other studies, suggest that the relationship between economic hardship and human development reflects a reciprocal process involving both social causation and social selection (Martin et al., in press; Schofield et al., in press). Our current research integrates these perspectives in a combined interactionist model which proposes that G2 financial circumstances, family stress processes, and investments in children are dependent in part on circumstances in G2's family of origin and on personal characteristics of G2 before entering the adult years (Conger & Donnellan, 2007; Conger, Conger, & Martin, in press). That is, these earlier attributes of children and families are expected to predict later socioeconomic success and family functioning when children (e.g., the G2s in this study) grow to adulthood. This hypothesis is consistent with the social selection perspective. The model also proposes, however, that G2 socioeconomic status (SES) and family functioning will have a direct influence on G3 development, consistent with the social causation perspective. This interactionist model provides a guide for the proposed research. In particular, we are interested in evaluating the degree to which specific G2 personality characteristics during adolescence affect the experience of economic pressure for parents and children during the adult years.

In our earlier examination of these ideas, we have aggregated family stress processes into a broad index that does not look at specific details about how childhood and adolescent experiences or characteristics of G2s might affect their current response to economic pressure (Martin et al., in press; Schofield et al., in press). The primary purpose of the present analysis is to disaggregate particular components of family and parent response to economic problems in order to see how each aspect of this hypothesized sequence might be affected by these earlier attributes of the members of the G2 cohort. We begin the analysis by building on the *family stress model* (FSM), which assumes a process of social causation through which economic pressures have a disruptive influence on family relationships and on the competent development of children (Conger & Conger 2002; Conger & Elder 1994; Conger et al., 2002). This theoretical framework focuses on the mechanisms through which economic dimensions of socioeconomic status (SES) are associated with significant developmental difficulties for children, especially when poverty is severe or persistent (Dearing, McCartney, & Taylor, 2001; Duncan & Magnuson, 2003; Magnuson & Duncan, 2002; McLoyd, 1998).

## The Family Stress Model and Social Causation

The model proposes that economic pressure in the family can have serious detrimental consequences for parent psychological functioning and family relationships which, in turn, may jeopardize the successful development of children. Economic pressures include unmet material needs such as adequate food and clothing, the inability to pay bills or make ends meet, and having to cut back on necessary expenses (e.g., health insurance and medical care). The model predicts that when economic pressure is high, parents are at increased risk for emotional distress (e.g., depression, anxiety, and anger) and behavioral problems (e.g., substance use and antisocial behavior; Conger, 1995; Conger et al., 2002). These emotional or behavioral problems are expected to lead to: 1) increased marital or romantic relationship conflict, 2) greater harsh parenting, and 3) reduced parental nurturance. That is, parents distracted by their personal problems and marital distress are expected to demonstrate less affection toward their spouse and children, be less involved in their children's daily activities, and be more irritable, harsh and inconsistent in their disciplinary practices. These family stress processes, in turn, threaten the social, emotional, cognitive, and physical well-being of children.

Empirical support for the FSM was first demonstrated with the rural Iowa G1 and G2 generations from the present study when G2s were adolescents (Conger et al., 1992, 1993). Since then these initial findings have been replicated in whole or in part with several different types of study populations including: (1) African American families living in urban and rural locations (Conger et al., 2002; Scaramella, Sohr-Preston, Callahan, & Mirabile, 2008), (2) a poor urban sample of primarily minority families headed by a single-parent (Mistry, Vandewater, Huston, & McLoyd, 2002; Mistry, Lowe, Benner, & Chien, 2008), (3) a nationally representative sample of families with preschool-aged boys and girls (Yeung, Linver, & Brooks-Gunn, 2002), (4) adolescents and their parents living in the Mississippi Delta region (Yoder & Hoyt, 2005), (5) European American and Mexican American families living in urban areas of Southern California (Behnke et al., 2008; Parke et al., 2004), (6) an ethnically-diverse, low-income sample of families with young children (Mistry et al., 2008), and (7) a nationally representative sample of young children and their families (Gershoff, Aber, Raver, & Lennon, 2007). Other studies have successfully applied the model to diverse racial groups and to families living outside the U.S. (e.g., Aytaç & Rankin, 2009; Borge, Rutter, Cote, & Tremblay, 2004; Dodge, Pettit, & Bates, 1994; Gutman, McLoyd, & Tokoyawa, 2005; Solantaus, Leinonen, & Punamaki, 2004). Thus, a wide range of studies have found support for the mediating processes proposed by the FSM.

### The Social Selection Perspective

An alternative explanation to the social causation argument proposed by the FSM comes from the social selection perspective (e.g., Lerner, 2003; Mayer, 1997; Rowe & Rodgers, 1997), which argues that the relationship between family economic circumstances and child development results from individual differences in genetics (e.g., Costello, Compton, Keeler, & Angold, 2003; Rowe & Rodgers, 1997), personality, values, and/or competencies that facilitate the accumulation of social advantages and are directly transmitted from parents to children (see Mayer, 1997). Critical to the selection perspective is the assumption that the observed associations between parental SES and child developmental outcomes are spurious because they are caused by a third variable. That is, both parental SES and children's development are proposed to emanate from certain personal characteristics that are directly transmitted from the parent to the child. Consistent with this view, there is evidence from longitudinal studies that individual differences in personality, aggressiveness, and cognitive ability during adolescence predict income, occupational status, and unemployment in adulthood (e.g., Feinstein & Bynner, 2004; McLeod & Kaiser, 2004; Shiner, Masten, & Roberts, 2003). Results from these studies provide support for the selection argument that early emerging individual differences will lead to later socioeconomic circumstances during the adult years.

### The Interactionist Model

Because earlier research has generated findings consistent with both the FSM and the selection perspective, these results suggest that the processes that explain the relationship between economic pressure and child development may be more complex than proposed by either a social causation or selection approach. For this reason, we have developed the interactionist model (IM) which incorporates both perspectives (Conger & Donnellan, 2007; Donnellan et al., 2009). We believe that neither social selection nor social causation explanations alone reflect the complexities of human development as it is played out over time and generations. On one hand, a strict social selection perspective minimizes the role that socioeconomic circumstances, such as economic hardship, economic catastrophes or financial windfalls, may play in the lives of parents and children. On the other hand, a strict social causation explanation places too little emphasis on the role of individual differences and human agency. The IM attempts to incorporate both of these perspectives and is broadly consistent with transactional models of human development (e.g., Sameroff, 2000; Sameroff & Chandler, 1975), or the notion that "developmental outcomes are neither a function of the individual alone nor a function of the experiential context alone" (Sameroff & MacKenzie, 2003, p. 614).

Two recent studies have generated findings consistent with the IM. First, Schoon et al. (2002) showed that low SES in the family of origin predicted

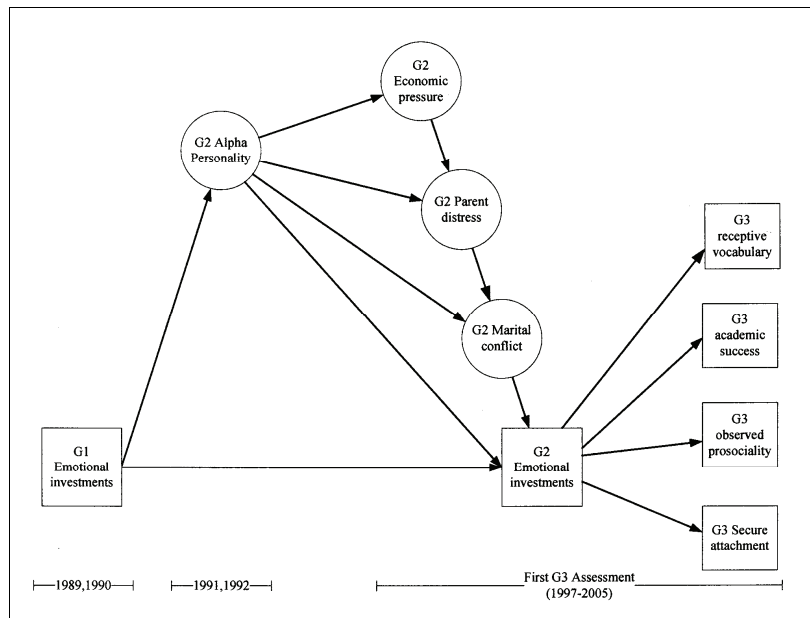
lower academic achievement and continuing life stress throughout childhood and adolescence. Children's lower academic competence and higher life stress, in turn, were associated with lower SES in adulthood. In the second study, Wickrama, Conger and Abraham (2005) found that low SES in the family of origin predicted adverse economic circumstances during adolescence, which increased risk for both mental and physical health problems during the transition to adulthood. Poor health, in turn, predicted economic problems and illness during the early adult years. Thus, both studies suggest a reciprocal process in which economic conditions predict personal characteristics of children and adolescents that influence their SES in adulthood. A problem with both of these studies, however, is that G1 parental characteristics may have led to SES in the family of origin and to the course of G2's development, an effect consistent with the selection argument. The plausibility of this alternative interpretation for the findings cannot be determined, however, because these studies lacked data on the parents during their childhoods, before they had children or entered the work force. We overcome this problem in this study by analyzing three generations of family members that have been followed prospectively over time. Using data on G2's development during adolescence, we are able to test whether G2 economic pressure affects G3 development, either directly or through hypothesized mediating processes, after including G2 pre-adult characteristics in the prediction equations.

### The Present Study

Figure 1 provides the proposed theoretical pathways from the IM to be tested in the following analyses. Beginning on the right side of the figure, our interest is in determining the degree to which economic pressure experienced by the G2 cohort in the FTP during their early adult years (1997 to 2005, from around 20 to 28 years of age) predicts important developmental outcomes for their G3 children in terms of language (vocabulary) use, academic success, prosocial behavior, and attachment security. These markers of general competence in young children predict long term success in education, work, and the establishment of close and supportive social relationships (Sroufe, Egeland, Carlson, & Collins, 2005). Consistent with the FSM as described earlier, we predict that economic pressure will increase parent emotional distress which then leads to greater conflicts between parents. These disruptions in the lives of parents are expected to impair effective parenting practices, which we label G2 emotional investments in G3. Emotional investments involve behaviors such as parental warmth, involvement, care, concern, and restraint from harshness in interactions with G3. These types of parental investments are a complement to material investments such as providing adequate food, clothing, and medical care for a child (see Schofield et al., in press). Consistent with the FSM, we predict

that this economic stress process will affect the developing child through its adverse impact on parental emotional investments.

Figure 1: The interactionist model



The truly unique aspect of this study, however, is provided by the availability of information about the G2s when they were adolescents, during the time period from 1989 to 1992 when they ranged in age from about 12 to 15 years, the period of early to middle adolescence. The selection perspective argues that the family stress process just described is likely spurious, dependent on earlier individual characteristics during childhood or adolescence. These characteristics of future parents, then, are expected to affect them as adults in terms of both their economic achievements and the developmental success of their children. For example, based on the results of her research Mayer argues that

parental income is not as important to children's outcomes as many social scientists have thought. This is because the parental characteristics that employers value and are willing to pay for, such as skills, diligence, honesty, good health, and reliability, also improve children's life chances, independent of their effect on parents' income. Children of parents with these attributes do well even when their parents do not have much income (1997, pp. 2-3).

If this argument from the selection perspective is correct, then the predicted relationships among G2 economic pressure, family stress processes, and G3



development should not be statistically significant once these types of earlier G2 personality traits are taken into account.

To evaluate the selection argument we employ the construct of “alpha” personality in the theoretical model. Alpha personality reflects a set of positive attributes of the type Mayer (1997) proposes will lead both to G2 SES and to the healthy development of G3. This personality construct includes attributes such as prosociality, social competence, persistence, planfulness, and emotional stability (Digman, 1997). Digman proposed that: “...Factor  $\alpha$  is what personality development is all about...if all proceeds according to society’s blueprint.” (p. 1250). That is, alpha personality describes a healthy and well-functioning individual. As illustrated by the paths in Figure 1, these personality traits are expected to reduce the probability that during adulthood G2 will experience economic pressure, emotional distress, and marital conflict. G2 alpha personality also is expected to increase the likelihood that G2 will make emotional investments in G3. The basic argument is that people who care about others, invest effort in the goals they pursue, and remain emotionally stable even in stressful times will be more successful in raising their children, establishing intimate relationships, and securing an adequate income.

Thus, the interactionist model illustrated in Figure 1 includes predictions from both the social causation view in terms of the FSM and also from the selection perspective in terms of the expected relationships between G2 personality and the set of constructs that describe the FSM. The interactionist element in the model derives from the fact that we do not expect that G2’s earlier personality characteristics will directly predict G3 development and explain away the stress process predicted by the FSM; rather, we predict that G2 personality will predict these stress processes which, in turn, will affect G3 adjustment. In this sense, the IM describes a dynamic process through which individual agency observable in adolescence affects social and economic outcomes during the adult years. These social and economic events and conditions then affect the development of the next generation of children. Simply put, processes of both social selection and social causation are expected to operate. We complete the model in Figure 1 by adding a final exogenous variable involving G1 emotional investments in G2 during adolescence. Our earlier research has demonstrated that parenting behaviors of these types by G1 tend to be replicated by G2 (Neppel, Conger, Scaramella, & Ontai, 2009); therefore, we predict that both G1 parenting and G2 alpha personality will predict G2 emotional investments in their G3 children. In addition, we expect that G1 parenting will promote positive traits in G2, as indicated in the model and as demonstrated in earlier studies (see Conger & Donnellan, 2007). The following analyses test these predictions from the interactionist model.

## Method

### Participants

Data for the present study were drawn from the Family Transitions Project (FTP), an ongoing, longitudinal study of 558 target youth (51% female) and their families. Interviews were first conducted with members of this cohort of adolescents (G2) and their parents (G1) between 1989 and 1991, when they were in either the seventh (1989) or ninth (1991) grade. Participants were interviewed annually in their homes through 1995 (with the exception of 1993), and thereafter they were interviewed in alternating years, with an average retention rate of almost 90% through 2005, when they averaged 29 years of age. Of the original 558 families, 107 adolescents came from single-mother families and the remainder of these youth lived with both their biological parents. Participants lived in rural counties in north central Iowa, and thus were all European Americans from primarily lower-middle and middle-class families. Additional information about the initial recruitment and the families involved is available in Conger and Conger (2002).

Beginning in 1997, the oldest biological child (G3) of the G2 target was recruited for study. To be eligible for participation the child had to be at least 18 months of age and the G2 target parent must have been in regular contact with the G3 child. The current study focuses on the 271 G2 targets (112 males, 159 females) that had a G3 child eligible for participation by 2005. Our study used data from the G2 targets' adolescent years, prior to their becoming parents, as well as data from the annual assessments of each G3 child. A total of 90% of the G2 target parents with eligible children agreed to participate. The G2 targets averaged 25.6 years of age at T1, the first assessment during which G3 entered the study. Almost 81% of the G2 targets were living with the other biological parent of the G3 child at T1. The average age of the G3 children across annual assessments ranged from 2.31 years at T1 to 6.58 years at T5. There were 149 G3 boys and 122 G3 girls.

### Procedures

G2 targets and their G1 parent(s) were recruited from public and private schools in rural areas of Iowa during G2's adolescent years. Letters explaining the project were sent to eligible families, who were then contacted by telephone and asked to participate. Seventy-eight percent of the two-parent families, and over 90% of the single-parent families agreed to be interviewed. During each assessment period, professional interviewers made home visits to each family for approximately 2 hours on two occasions. During the visits, each family member completed a set of questionnaires covering an array of topics related to work, finances, school, family life, mental and physical health status, and social relationships. In addition, G1 and G2 participated in videotaped structured

interaction tasks which were coded by trained observers. The first task consisted of the family members (mother, father, the target adolescent, and a sibling) discussing issues raised by task cards, including when problems usually come up, what happens, and why particular problems exist for that family. The family members were given 30 min to complete this task. The second task, 15 min in length, also involved the same four family members. For this task, the family was asked to discuss and try to resolve issues and disagreements they had cited as most problematic in a questionnaire they had completed earlier in the visit.

Beginning as early as 1997 the G2 target and G3 child were visited at home once each year by trained interviewers. Data were collected from G2 targets and their G3 children, as well as from the romantic partners (married or cohabiting) of the G2 targets (when they had one), following procedures similar to those described for G2's family of origin. The G2 target and participating partner (when applicable) completed a series of questionnaires on parenting beliefs and behaviors, the characteristics of the G3 child, social relationships, economic circumstances, and mental and physical health status.

During the annual visits, the G2 parents and G3 child engaged in two separate videotaped interaction tasks. The first was a *puzzle task*, which lasted 5 minutes. This task was also completed separately with G2's partner and G3 when applicable. In the puzzle completion task, G2 and G3 were presented with a puzzle that was too difficult for children to complete alone. G2 parents were instructed that children must complete the puzzle alone, but parents could provide any assistance necessary. Puzzles varied by age group so that the puzzle slightly exceeded the child's skill level. Only the G2 target and the G3 child participated in the *clean up task*, which always followed the puzzle task and lasted 5 minutes for 2 year olds and 10 minutes for older children. The clean up task began with the child playing alone with various developmentally appropriate toys. An interviewer then joined the child in play. The interviewers were instructed to dump out all of the toys in order to set up the task. Interviewers then retrieved the parent and instructed the parent that their child needed to clean up the toys alone, but parents could provide any assistance necessary.

Both interaction tasks created a stressful environment for both parent and child and the resulting behaviors indicated how well the parent handled the stress and how adaptive the child was to an environmental challenge. We expected that skillful, nurturing and involved parents would remain warm and supportive toward the child whereas less skillful parents were expected to become more irritable and short-tempered as the child struggled with the puzzle or cleaning up the toys. Trained observers coded the quality of the behaviors between participants using the Iowa Family Interaction Rating Scales (Melby & Conger, 2001). Each interaction task (puzzle and clean up) was coded by an independent observer.

## Measures

*G2 Alpha Personality.* G2 self-reported personality during adolescence using the self report form of the NEO Five Factor Inventory (NEO-FFI), a short form of the NEO, which consists of 12 items tapping each of the five personality factors: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness to Experience. Digman (1997) proposes that high levels of agreeableness and conscientiousness and a low level of neuroticism generate a second order factor he calls alpha personality, and recent work is consistent with Digman's proposal (DeYoung, 2006; Jang et al., 2006; Markon, Krueger, & Watson, 2005). To minimize respondent burden, NEO-FFI items were distributed across two assessments (1991 and 1992) when the G2 youth were in the ninth and tenth grades, and were available for 81% of the sample. Previous studies have demonstrated and described the convergent and discriminant validity of the NEO-FFI (Costa & McCrae, 1992). In the current study, the data demonstrate high levels of internal consistency for the three scales used in analyses (Agreeableness,  $\alpha = .75$ ; Conscientiousness,  $\alpha = .84$ ; Neuroticism,  $\alpha = .85$ ).

*G2 Economic pressure.* As noted earlier, economic pressure involves the kinds of stresses and strains families experience when their income is not adequate to meet their needs. The measure of G2 economic pressure used in this report was also used to evaluate the same construct for their G1 parents during G2's adolescence (Conger & Elder, 1994) and it has also been shown to be equally valid for minority families in urban and rural settings (e.g., Conger et al., 2002). Two indicators were used in the present analysis to estimate the latent construct at T1. The first indicator, *can't make ends meet*, assessed each family's ability to pay monthly bills. The indicator was composed of two items. One item asked if the family could pay its bills at the end of each month and the second item asked if the family had any remaining money at the end of each month. These two items were standardized and observed scores ranged from  $-3.71$  to  $5.03$ , with higher scores indicating greater economic pressure. The second indicator for the construct, *financial cutbacks*, assessed whether families made significant cutbacks in daily expenditures because of limited financial resources. For example, respondents indicated whether they had or had not made cutbacks in food or medical expenditures. There were a maximum of 15 possible financial cutbacks and the higher the score, the more cutbacks the family had made.

*G2 Parent distress.* To assess dimensions of parent distress, we used T1 measures of parental anxiety and depression using the *Symptom Checklist-90-Revised*, which has been shown to be a valid and reliable measure of emotional distress in earlier research (*SCL-90-R*; Derogatis, 1983). Ten items were used to evaluate anxiety which included symptoms such as having excessive worries or physical responses indicative of anxiety. Thirteen items were used to evaluate depression and included symptoms such as feeling sad and feeling blue.

The Anxiety subscale had a mean of 1.17 and a standard deviation of 0.43. The Depression subscale had a mean of 1.39 and a standard deviation of 0.47. Both scales had acceptable reliabilities ( $\alpha > .80$ ). Each symptom scale was used as a separate indicator for the latent construct.

*G2 Marital conflict.* To assess marital conflict, we used T1 measures of marital hostility as reported by both parents using 13 items from the *Behavioral Affect Ratings Scale* (Conger & Elder, 1994). Although the construct is entitled “marital conflict,” it also was completed by cohabiting couples who were raising the G3 child together. Respondents completed items that indicated how often during the prior month the participant’s partner did things such as “get angry at you,” “hit, push, grab or shove you,” and “insult or swear at you.” The conflict subscale had a mean of 2.10, a standard deviation of 0.78, and acceptable reliability ( $\alpha > .80$ ). Mother and father reports of conflict were used as two separate indicators for the latent construct.

*G1 and G2 emotional investments.* To measure parental investments we used information from both G2 and G2’s partner when available. We included partner data for two reasons. First, spouses may influence each other’s parenting, and to the degree G2 targets and their partners collaborate in parenting like monitoring the activities of their child, including only one parent may create bias in our estimate. Second, given that G2 selected his or her spouse, any effect G2 has on G3 is partially due to G2’s selection of a spouse.

For *G2 emotional investments*, we constructed an index to assess the G2 target’s, and when applicable, their partner’s emotional investments toward the G3 child. Each family’s score on the emotional investments index was calculated by averaging across 10 dichotomous positive parenting domain scores: childrearing enjoyment, parental monitoring, consistent discipline, punitive parenting (reversed), observed harshness (reversed), observed warmth, time spent with child, belief that people need to learn how to be good parents, cooperative coparenting, and parental happiness. For each item, 75% of the sample was assigned to the high emotional investments category – those families making the most emotional investments in the G3 child (coded 1). Some measures, however, did not allow for this 75% split, which resulted in 63.1% to 80.8% of the sample being assigned to the high emotional investments category across all measures. The G2 emotional investments index had a mean of .73 and a standard deviation of 0.19. About 10% of the sample was categorized as highly invested on all parenting items; none fell into the low emotional investments category on all 10 items. One-hundred percent of the sample had valid scores on the G2 emotional investments index. Details regarding construction of the index are provided in the Appendix.

For *G1 emotional investments*, we constructed an index to parallel as closely as possible the index created for G2 by averaging across nine dichotomous emotional investment items: parental monitoring, consistent discipline, punitive parenting, observed harshness, observed warmth, time spent with child, belief

that people need to learn how to be good parents, cooperative coparenting, and parental happiness. These data were collected in 1991 when the G2 targets were still in high school, before becoming parents themselves. The G1 positive parenting index had a mean of .57 and a standard deviation of .23. About 4% of the sample was categorized as highly invested on all items; 18 families (2.7%) fell into the low emotional investments category on all nine items. One-hundred percent of the sample had valid scores on the G1 emotional investments index.

*G3 developmental outcomes. Secure attachment* was assessed using the Attachment Q-sort (Waters, 1987), which was completed by the G2 target as well as a spouse/partner at T1 (when present), when the G3 child was on average 2.30 years old. Their Q-sort profiles of the G3 child were both correlated with a criterion profile reflecting a securely attached child. The correlations between this criterion profile and each caregiver's profile of the child were then averaged and used as an index of the degree to which the child was securely attached to their primary caregiver or caregivers. The attachment Q-sort has been shown to have good reliability and validity (Vaughn & Waters, 1990; Waters, 1987) and was available for 93% of our sample.

*Observed prosocial behavior* by the G3 child was assessed by trained raters who watched the child during videotaped interactions with primary and secondary caregivers during T1. Children were rated on the degree to which they were prosocial, communicative, positively assertive, and responsive. Separate ratings were made for interactions with mother and interactions with father. The eight items were then combined into a composite scale of child's prosocial behavior, which had good reliability ( $\alpha = .85$ ) and was available for 96% of our sample. With regard to interrater reliability, intraclass correlations were .63 for prosocial, .64 for communicative, .61 for positively assertive, and .58 for responsive. Because ratings were taken from each child's first assessment, and there were mean differences in observational ratings across assessment points, the scores were standardized within time points before being merged into the final scale.

*Academic competence* was assessed using teacher reported perceptions of the G3 child's behavior and efficacy in the school setting, using an 11-item inventory created for this study. Teacher reports were taken from the first available assessment; for the teacher reports, this was generally T4 when the G3 child was on average between five and six years old. Questions were asked on a scale from 5 = strongly agree to 1 = strongly disagree. Sample items include, "He/She does most of his or her schoolwork without help from others" and "He/She tries hard at school." Items were combined into a single scale, which had good reliability ( $\alpha = .94$ ), and was available for 61% of our sample.

*Receptive vocabulary* was assessed using the Peabody Picture Vocabulary Test (revised: PPVT-R; Dunn & Dunn, 1981) which was administered yearly from T3 to T5. During this period the G3 child was on average 4.35, 5.43, and

6.58 years of age. The PPVT-R has good psychometric properties (Williams, 1997; Williams, & Wang, 1997) and was available for 82% of our sample. For these analyses, the standardized scores were averaged across the three assessments.

## Results

### Descriptive Findings

The measurement model for the latent constructs used in the analyses is presented in Table 1.

Table 1: Measurement Model: Unstandardized and Standardized Coefficients

Latent Factor	Manifest	$\lambda$	SE	Std. $\lambda$
Personality	Conscientiousness	.387	.036	.773
	Neuroticism	.444	.043	.750
	Agreeableness	.229	.030	.569
Econ Pressure	Make ends meet	1.373	.216	.832
	Financial cutbacks	2.386	.387	.707
Distress	Anxiety	.357	.043	.805
	Depression	.432	.057	.934
Marital conflict	Mother report	.382	.034	.894
	Father Report	.401	.401	.918

The results demonstrate acceptable loadings for all latent factors. For example, consistent with Digman's (1997) characterization, G2 alpha personality had significant loadings for conscientiousness, (standardized  $\lambda = .77$ ,  $SE = .05$ ), neuroticism (reversed; standardized  $\lambda = .75$ ,  $SE = .05$ ), and agreeableness (standardized  $\lambda = .57$ ,  $SE = .06$ ). Standardized loadings for the other latent constructs were acceptable and ranged from .71 for the financial cutbacks indicator for economic pressure to .93 for the depression indicator for parent distress. Correlations among all study variables are presented in Table 2.

Table 2: Correlations Among Variables Used in Analysis

Variable	1	2	3	4	5	6	7	8	9	10
1. G3 secure attachment	-									
2. G3 observed prosociality	.20*	-								
3. G3 academic success	.35*	.18*	-							
4. G3 receptive vocabulary	.28*	.27*	.55*	-						
5. G1 emotional investments	.27*	.09	.24*	.14*	-					
6. G2 emotional investments	.38*	.16*	.23*	.21*	.26*	-				
7. G2 personality	.34*	.22*	.18*	.22*	.28*	.34*	-			
8. G2 economic pressure	-.28*	-.25*	-.26*	-.26*	-.10	-.26*	-.27*	-		
9. G2 distress	-.09	-.08	-.22*	-.06*	.10	-.14*	-.21*	.31*	-	
10. G2 marital conflict	-.31*	-.06	-.18*	-.13	-.18*	-.34*	-.36*	.29*	.49*	-

Note: \* $p < .05$ .



Consistent with theoretical expectations, G2 alpha personality was negatively associated with later G2 economic pressure ( $r = -.27$ ), parent distress ( $r = -.21$ ), and marital conflict ( $r = -.36$ ) and positively associated with G2 emotional investments ( $r = .34$ ). G2 economic pressure was negatively associated with all four G3 developmental outcomes. The patterns of associations were generally supportive of the theoretical model, and justified the formal model testing that follows.

### Structural Equation Modeling

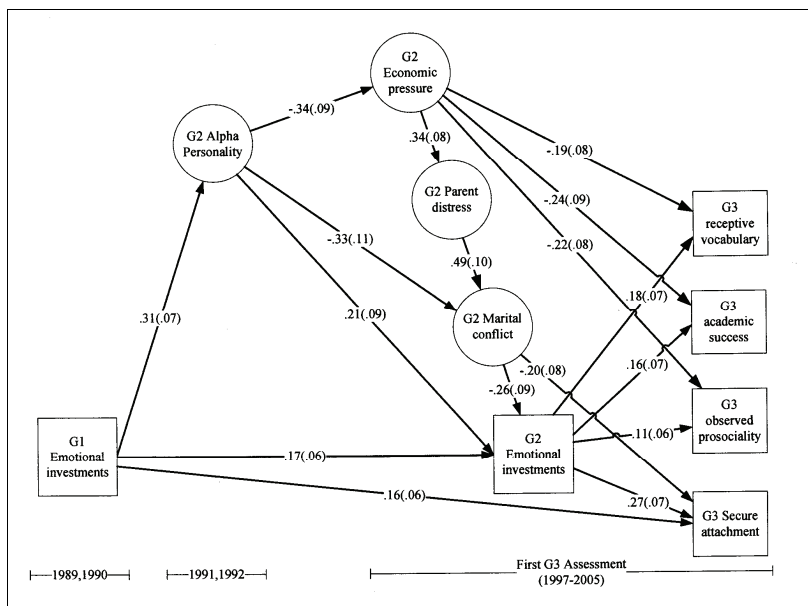
We used Mplus Version 4 (Muthén & Muthén, 2006) to evaluate predictions from the interactionist model (Figure 1) using full information maximum likelihood estimation. Results of the model test are provided in Figure 2. The fit of the final model to the data was acceptable,  $\chi^2 = 95.49$ ,  $df = 60$ , TLI = .925, RMSEA = .047 (90% CI = .028 - .064); however, several adjustments had to be made in the predicted pathways to achieve adequate model fit. Among the unexpected results, G2 economic pressure had a number of unpredicted direct relationships with G3 developmental outcomes and G3 secure attachment was directly related to G1 emotional investments and G2 marital conflict in the final model.

Figure 2 provides the standardized regression coefficients and standard errors (in parentheses) for the statistically significant paths ( $p < .05$ ) in the final model. We hypothesized that G2 positive personality during adolescence would be related to later elements of the family stress model during adulthood, and this prediction was generally supported. G2 positive personality predicted less economic pressure in adulthood ( $\beta = -.34$ ), less marital conflict ( $\beta = -.33$ ), and more emotional investments in children ( $\beta = .21$ ). Although the zero-order correlation between positive personality and later parent distress was significant (see Table 2), this association became statistically insignificant with G2 economic pressure as a predictor in the equations. Positive personality did show an indirect effect on parent distress, however, through economic pressure ( $\beta = -.12$ , SE = .04,  $p = .006$ ), which remained significant when additional analyses were conducted using bootstrapped confidence intervals.

Consistent with the FSM, we also hypothesized that the cascade of family difficulties generated by G2 economic pressure would reduce G2 emotional investments and only these investments would directly affect G3 developmental outcomes. The results are consistent with these expectations in several ways. First, there was support for the general mediating process proposed by the FSM. That is, economic pressure was related to greater parental distress which, in turn, predicted greater marital conflict. Although economic pressure demonstrated a significant zero-order association with marital conflict (see Table 2), there was no direct path from economic pressure to marital conflict with parental distress in the model, consistent with the mediating process

proposed by the FSM. Next, marital conflict predicted lower levels of G2 emotional investment, and despite the fact that both economic pressure and parent distress demonstrated significant zero order relationships with investments (see Table 2), these direct relationships were not present with marital conflict in the regression equations. This set of findings supports the basic set of mediating processes proposed by the FSM.

Figure 2: Empirical evaluation of the interactionist model; standardized regression coefficients with standard errors in parentheses; all paths statistically significant ( $p < .05$ )



Also important, G2 emotional investments promoted G3 language development (receptive vocabulary), academic success, prosocial behavior, and secure attachment after taking other constructs in the interactionist model into account. Unexpectedly, however, economic pressure predicted lower levels of G3 receptive vocabulary, academic success, and observed prosocial behavior even after considering the mediating variables proposed by the FSM. That is, the relationship between economic pressure and these developmental outcomes was not fully explained by G2 emotional investments, marital conflict, and parent distress as proposed by the model. Parent distress did not account for unique variance in any of the G3 outcomes, despite having significant zero-order associations with both academic success and receptive vocabulary. Mari-

tal conflict accounted for variance in G3 secure attachment to primary caregiver.

As expected and consistent with the interactionist model, G2 personality was indirectly related to all four G3 developmental outcomes. Omnibus tests of indirect paths were all significant, though none of the tests of specific indirect paths were significant, with a single exception. The test of a specific indirect path from G2 personality to G3 prosocial behavior through G2 economic pressure was significant,  $\beta = .07$ ,  $SE = .03$ ,  $p < .05$ . These results suggest that while G2 personality is indirectly related to all four G3 developmental outcomes, no single family stress variable completely accounted for the majority of this indirect association. To strengthen the degree of confidence in any associations between G2 personality and later G2 parental investments, the model also included a path from G1 emotional investments to G2 emotional investments. G1 emotional investments were significantly associated with G2 personality and G2 emotional investments. An unanticipated finding was that G1 emotional investments also uniquely predicted G3 secure attachment.

## Discussion

Economic downturns of the type being experienced in the United States and around the world prompt special attention to the relationship between family economic problems in particular or socioeconomic status more generally and the development of children (Conger & Elder, 1994). Some researchers have argued that family financial distress can have a devastating impact on parents and children; adverse consequences that might seriously jeopardize the long-term emotional, behavioral and social adjustment of all family members. Others have proposed that income has little direct influence on the lives of children and, rather, specific personality traits of parents affect both the social and economic success of individual adults and also the adjustment of their children. The first assumption is known as the social causation argument and in this paper we have evaluated predictions from the family stress model (FSM) that are consistent with this assumption. The second view represents the social selection perspective which was also evaluated in this report.

Rather than assuming that these two perspectives on the relationship between family economic hardship and child development are mutually exclusive, however, we have argued that these two processes coexist over time and generations, as proposed by the interactionist model (IM, Figure 1). The IM hypothesizes that early characteristics of children and adolescents that reflect a high degree of emotional stability, impulse control, planning, and sociability – as captured by the concept of alpha personality – will influence later economic standing. That is, children with these characteristics are expected to do better in school, attain more education, and have greater success in the workplace. As such, they should experience less economic pressure as adults (see Conger &

Donnellan, 2007). They should also be less prone to emotional problems or to conflicts and difficulties in close relationships. In addition, these personality traits are expected to promote greater time and effort in the care of children, and these emotional investments are predicted to enhance the positive adjustment of the next generation of children in terms of their social and academic success or competence. Especially important, the pathways from early personality to later economic problems and family stress processes are consistent with the assumption of social selection. On the other hand, the expectation that family stress processes and investments in children will affect G3 development, net of earlier personality traits, is consistent with the social causation perspective. The findings in this report evaluated the degree to which the IM accurately predicted how these seemingly divergent views of the association between SES and human development come together across time and generations.

In general, these results demonstrated significant support for the IM. G2 alpha personality was significantly correlated with all four G3 developmental outcomes: receptive vocabulary, academic success, prosocial behavior, and secure attachment. Once the family stress mediators (G2 economic pressure, parent distress, marital conflict, and emotional investments) were added into the prediction equations, though, there was no longer a direct relationship between G2 personality and G3 adjustment. Thus, we are safe to conclude that the proposed selection and causation processes hypothesized by the IM were operating for the participants in this study. That is, the selection view was supported by showing that personal traits appearing early in development do predict eventual success or difficulties in economic circumstances and family relationships. The selection argument is incorrect, however, in its prediction that these economic stress processes have no influence on child development once parent personality is taken into account. Instead, the disruptive cascade initiated by economic pressure has detrimental consequences for the development of childhood competence. Based on these findings, one can reasonably argue that individuals who enter adulthood with the types of personality traits evaluated here will be more resilient to the sorts of economic downturns currently being experienced in the U.S.; but when financial problems do occur, these parents and their children are at risk for family disruptions that imperil successful child development.

In addition to the overall findings which were supportive of the IM, there were some unexpected findings that require further study and evaluation. First, contrary to the FSM aspects of the tested model, economic pressure directly predicted three of the child outcome variables: receptive vocabulary, academic success and prosocial behavior. Economic pressure did not directly predict secure attachment. These results are contrary to most research evaluating predictions from the FSM (see Conger, Conger, & Martin, in press). However, most of that research has addressed development during adolescence, and it may be that younger children of the type studied in this report are more vulner-

able to economic pressures in the home. Another possibility is that the current economic downturn in the U.S. has exacerbated higher than average levels of economic pressure across all families. In these circumstances, it may be that extremes in economic pressure have a direct impact on children that would not be present during a less volatile economic period. These possible explanations for the unexpected direct effects of economic pressure on G3 development will require additional study to determine if, in fact, they have merit.

Second, G3 secure attachment was directly predicted by both G2 marital conflict and G1 emotional investments. In the theoretical model for this study, we proposed that only G2 emotional investments would directly predict G3 developmental outcomes. Interestingly, secure attachment is generally considered a product of the quality of close relationships (see Sroufe et al., 2005). It may be that G2 marital conflict reflects general distress in close family relationships and this distress spills over into the development of attachment by the young child. It may also be the case that G1 grandparents who made greater emotional investments in G2 during adolescence also have closer relationships with their G3 grandchildren than do grandparents who were not as involved with G2 during adolescence. These closer connections between highly invested G1 grandparents and their G3 grandchildren may also promote greater security of attachment. These findings suggest the value of additional research on the quality of grandparent and grandchild relationships.

Of course, this study is not without its limitations. It involved a community sample of White participants from rural areas of the Upper Midwest in the U.S. Most of the families included both biological parents of the G2 adolescents. The results require replication with different ethnic and national groups from both rural and urban locations. In addition, the findings need to be replicated with children and adolescents coming from a variety of family structures, such as single parent and step parent. Fortunately, earlier research has shown that findings from the family transitions project related to economic conditions, family functioning and child developmental outcomes do tend to replicate with families of different ethnicities and from different geographic locations, thus increasing confidence in the results presented here (see Conger et al, 2002; Conger & Donnellan, 2007; Conger, Conger, & Martin, in press). Despite the noted limitations, the findings presented here provide significant evidence that processes of both social selection and social causation operate in producing the relationship between economic conditions and child development and that these processes are consistent with predictions from the interactionist model.

## Appendix

### The G2 Emotional Investments Index

Percent of the Sample in the High Emotional Investments Category on Each Emotional Investments Item and Mean Scores for the High and Low Investments Groups on Each of the 11 Measures

Measure of emotional investments	%	High investments		Low investments		
		high invest.	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1. Childrearing enjoyment	75.1		4.43	0.29	3.58	0.37
2. Parental monitoring	63.1		3.16	0.29	2.31	0.33
3. Consistent discipline	73.4		2.67	0.32	1.83	0.26
4. Punitive parenting (reversed)	78.2		2.20	0.21	1.48	0.24
5. Harsh parenting (reversed)	70.7		0.91	0.69	3.33	1.02
6. Warm parenting	75.4		5.17	0.93	2.88	0.53
7. Time spent with child	73.4		6.68	0.41	4.73	1.01
8. Belief that parenting is learned	75.2		3.97	0.23	3.44	0.15
9. Coparenting	74.7		4.57	0.25	3.69	0.4
10. Parental happiness	77.4		4.91	0.12	4.32	0.24

Except where indicated, measures are from the G2 target's self-reports for single-parent families, and an average of the G2 target's and partner's self-report for two-parent families.

- 1) *Childrearing enjoyment* assesses parent's enjoyment of childrearing tasks such as bathing and reading to their child. Observed scores ranged from 2.5 to 5, with higher scores indicating greater enjoyment. Families with scores greater than 4 were assigned to the high emotional investments category (75.1%).
- 2) *Parental monitoring* was assessed with an item indicating how often parents knew the child's whereabouts. Scores in the sample ranged from 1 to 4, with higher scores indicating greater monitoring. Families with scores greater than 2.5 were assigned to the high emotional investments category (63.1%).
- 3) *Consistent discipline* was assessed with eight items indicating the degree to which parents set and enforce rules. Observed scores ranged from 1 to 4, with higher scores indicating more consistent discipline. Families with scores greater than 2 were assigned to the high emotional investments category (73.4%).
- 4) *Punitive parenting* was assessed with six questions indicating the degree to which parents were harsh or punitive with their child. Items were reverse

coded so that higher values represented lower levels of punitive parenting. Sample scores ranged from 1 to 2.83. Families scoring more than 2 were placed in the high investments category (78.2%).

- 5) *Harsh parenting* was assessed by trained observers who coded the quality of the behaviors during the puzzle and clean up tasks on a 9-point scale (see Melby & Conger, 2001 for details). Observed ranged from 0 (low harsh parenting) to 7.17 (high harsh parenting). Families scoring 2.2 or less were assigned the high emotional investments category (70.7%).
- 6) *Warm parenting* was assessed in the same manner as harsh parenting. Observed scores had a range of 1.56 (low warmth) to 7.67 (high warmth). Families scoring more than 3.7 were assigned the high emotional investments category (75.4%).
- 7) *Time spent with child* was coded on a 7-point scale, with higher values indicating greater time invested in the child. Families scoring more than 5.5 were placed in the high emotional investments category (73.4%).
- 8) *Belief that parenting is learned* assesses the degree to which parents felt that being a good parent takes a concerted effort and needs to be learned rather than being an innate skill. Observed scores ranged from 2.97 to 4.65, with higher values indicating the belief that parenting is a skill that had to be learned. Families scoring more than 3.63 were assigned to the high emotional investments category (75.2%).
- 9) *Cooperative coparenting* was assessed by having both parents report on how much they agree on childrearing and discipline. Observed scores range from 1.82 to 5, with higher values indicating greater agreement between parents. Families scoring more than 4.1 were assigned to the high emotional investments category (74.7%).
- 10) *Parental happiness* was assessed with six items such as, "Even though it is hard at times, I enjoy being a parent," and "I really love my child(ren)". Observed values ranged from 3.5 to 5, with higher values indicating greater happiness. Families scoring more than 4.5 were assigned to the high emotional investments category (77.4%).

## References

- Aytac, I. A., and B. H. Rankin. 2009. Economic crisis and marital problems in Turkey: Testing the family stress model. *Journal of Marriage and Family* 7: 756-767.
- Behnke, A. O., S. M. MacDermid, S. L. Coltrane, R. D. Parke, S. Duffy, and K. F. Widaman. 2008. Family cohesion in the lives of Mexican American and European American parents. *Journal of Marriage and Family* 70: 1045-1059.
- Borge, A. I. H., M. Rutter, S. Cote, and R. E. Tremblay. 2004. Early childcare and physical aggression: Differentiating social selection and social causation. *Journal of Child Psychology and Psychiatry* 45: 367-376.

- Conger, R. D.. 1995. Unemployment. In *Encyclopedia of marriage and the family*, ed. D. Levenson, 731-735. New York: MacMillan.
- Conger, R. D., and K. J. Conger. 2002. Resilience in Midwestern families: Selected findings from the first decade of a prospective, longitudinal study. *Journal of Marriage and Family* 64: 361-373.
- Conger, R. D., K. J. Conger, G. H. Jr. Elder, F. O. Lorenz, R. L. Simons, and L. B. Whitbeck. 1992. A family process model of economic hardship and adjustment of early adolescent boys. *Child Development* 63: 526-541.
- Conger, R. D., K. J. Conger, G. H. Jr. Elder, F. O. Lorenz, R. L. Simons, and L. B. Whitbeck. 1993. Family economic stress and adjustment of early adolescent girls. *Developmental Psychology* 29(2): 206-219.
- Conger, R. D., K. J. Conger, and M. J. Martin (in press). Socioeconomic status, family processes, and individual development. *Journal of Marriage and Family*.
- Conger, R. D., and M. B. Donnellan. 2007. An interactionist perspective on the socioeconomic context of human development. *Annual Review of Psychology* 58: 175-199.
- Conger, R. D., L. E. Ebert-Wallace, Y.ö Sun, R. L. Simons, V. C. McLoyd, V., and G. Brody. 2002. Economic pressure in African American families: A replication and extension of the family stress model. *Developmental Psychology* 38: 179-193.
- Conger, R. D., and G. H. Elder, Jr., eds.. 1994. Families in troubled times: The Iowa Youth and Families Project. In *Families in troubled times: Adapting to change in rural America*. Hillsdale, NJ; Aldine.
- Costa, P. T., and R. R. McCrae. 1992. *NEO PI-R. Professional manual*. Odessa, FL: Psychological Assessment Resources, 3.19.
- Costello, E. J., S. N. Compton, G. Keeler, and A. Angold. 2003. Relationships between poverty and psychopathology: A natural experiment. *Journal of the American Medical Association* 290: 2023-2029.
- Dearing, E., K. McCartney, and B. A. Taylor. 2001. Change in family income-to-needs matters more for children with less. *Child Development* 72: 1779-1793.
- Derogatis, L. R.. 1983. *SCL-90-R: Administration, scoring and procedures manual II*, 2nd ed.. Towson, MD: Psychometric Research.
- DeYoung, C. G.. 2006. Higher-order factors of the big five in a multi-informant sample. *Journal of Personality and Social Psychology* 91: 1138-1151.
- Digman, J. M.. 1997. Higher-order factors of the Big Five. *Journal of Personality and Social Psychology*, 73: 1246-1256.
- Dodge, K. A., G. S. Pettit, and J. E. Bates. 1994. Socialization mediators of the relation between socioeconomic status and child conduct problems. *Child Development* 65: 649-665.
- Donnellan, M. B., K. J. Conger, K. K. McAdams, and T. K. Neppl. 2009. Personal characteristics and resilience to economic hardship and its consequences: Conceptual issues and empirical illustrations. *Journal of Personality* 77: 1-31.
- Duncan, G. J., and K. A. Magnuson. 2003. Off with Hollingshead: Socioeconomic resources, parenting, and child development. In *Socioeconomic status, parenting, and child development*, ed. M. H. Bornstein and R. H. Bradley, 83-106. Mahwah, NJ: Erlbaum.
- Dunn, L. M., and L. M. Dunn. 1981. *Peabody Picture Vocabulary Test-Revised*. Circle Pines: MN. American Guidance Service.



- Feinstein, L., and J. Bynner. 2004. The importance of cognitive development in middle childhood for adulthood socioeconomic status, mental health, and problem behavior. *Child Development* 75: 1329-1339.
- Gershoff, E. T., J. L. Aber, C. C. Raver, and M. C. Lennon. 2007. Income is not enough: Incorporating material hardship into models of income associations with parenting and child development. *Child Development* 78: 70-95.
- Gutman, L. M., V. C. McLoyd, and T. Tokoyawa. 2005. Financial strain, neighborhood stress, parenting behaviors, and adolescent adjustment in urban African American Families. *Journal of Research on Adolescence* 15: 425-449.
- Jang, K. L., W. J. Livesley, J. Ando, S. Yamagata, A. Suzuki, A. Angleitner, F. Ostendorf, R. Riemann, and F. Spinath. 2006. Behavioral genetics of the higher-order factors of the Big Five. *Personality and Individual Differences* 41: 261-272.
- Lerner, R. M.. 2003. What are SES effects effects of? A developmental systems perspective. In *Socioeconomic status, parenting, and child development*, ed. M. H. Bornstein and R. H. Bradley, 231-255. Mahwah, NJ: Erlbaum.
- Magnuson, K. A., and G. J. Duncan. 2002. Parents in poverty. In *Handbook of parenting: Volume 4. Social conditions and applied parenting* 2nd ed., ed. M. H. Bornstein. Mahwah, NJ: Erlbaum.
- Markon, K. E., R. F. Krueger, and D. Watson. 2005. Delineating the structure of normal and abnormal personality: An integrative hierarchical approach. *Journal of Personality and Social Psychology* 88: 139-157.
- Martin, M. J., R. D. Conger, T. J. Schofield, S. J. Dogan, K. F. Widaman, M. B. Donnellan, and T. K. Neppl. (in press). Evaluation of the interactionist model of socioeconomic status and problem behavior: A developmental cascade across generations. *Development and Psychopathology*.
- Mayer, S.. 1997. *What money can't buy: Family income and children's life chances*. Cambridge, MA: Harvard University Press.
- McLeod, J. D., and K. Kaiser. 2004. Childhood emotional and behavioral problems and educational attainment. *American Sociological Review* 69: 636-658.
- McLoyd, V. C.. 1998. Socioeconomic disadvantage and child development. *American Psychologist* 53: 185-204.
- Melby, J. N., and R. D. Conger. 2001. The Iowa Interactional Rating Scale: Instrument summary. In *Family observational coding systems: Resources for systemic research*, ed. P. K. Kerig and K. M. Lindahl, 33-58. Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.
- Mistry, R. S., E. D. Lowe, A. D. Benner, and N. Chien. 2008. Expanding the family economic stress model: Insights from a mixed-methods approach. *Journal of Marriage and Family* 70: 196-209.
- Mistry, R. S., E. A. Vandewater, A. C. Huston, and V. C. McLoyd. 2002. Economic well-being and children's social adjustment: The role of family process in an ethnically diverse low-income sample. *Child Development* 73: 935-951.
- Muthen, L. K., and B. O. Muthen. 2006. *Mplus User's Guide*, 4th ed.. Los Angeles, CA: Muthén & Muthén.
- Neppl, T. K., R. D. Conger, L. V. Scaramella, and L. L. Ontai. 2009. Intergenerational continuity in parenting behavior: Mediating pathways and child effects. *Developmental Psychology* 45: 1241-1256.

- Parke, R. D., S. Coltrane, S. Duffy, R. Buriel, J. Dennis, J. Powers, et al.. 2004. Economic stress, parenting, and child adjustment in Mexican American and European American families. *Child Development* 75: 1632-1656.
- Rowe, D. C., and J. L. Rodgers. 1997. Poverty and behavior: Are environmental-measures nature and nurture? *Developmental Review* 17: 358-375.
- Sameroff, A. J.. 2000. Developmental systems and psychopathology. *Development and Psychopathology* 12: 297-312.
- Sameroff, A., and M. Chandler. 1975. Reproductive risk and the continuum of caretaking casualty. In *Review of child development research*, vol. 4, ed. F. Horowitz, M. Hetherington, S. Scarr-Salapatek, & G. Siegal, 187-244. Chicago: University of Chicago Press.
- Sameroff, A. J., and M. J. MacKenzie. 2003. Research strategies for capturing transactional models of development: The limits of the possible. *Development and Psychopathology* 15: 613-640.
- Scaramella, L. V., S. L. Sohr-Preston, K. L. Callahan, and S. P. Mirabile. 2008. A test of the family stress model on toddler-aged children's adjustment among Hurricane Katrina impacted and non-impacted low income families. *Journal of Clinical Child and Adolescent Psychology* 37: 530-541.
- Schofield, T., M. J. Martin, K. J. Conger, M. B. Donnellan, T. Neppl, and R. D. Conger. (in press). Intergenerational transmission of adaptive functioning: A test of the interactionist model of SES and human development. *Child Development*.
- Schoon, I., J. Bynner, H. Joshi, S. Parsons, R. D. Wiggins, and A. Sacker. 2002. The influence of context, timing, and duration of risk experiences for the passage from childhood to midadulthood. *Child Development* 73: 1486-1504.
- Shiner, R. L., A. S. Masten, and J. M. Roberts. 2003. Childhood personality foreshadows adult personality and life outcomes two decades later. *Journal of Personality* 71: 1145-1170.
- Solantaus, T., J. Leinonen, and R. L. Punamäki. 2004. Children's mental health in times of economic recession: Replication and extension of the family economic stress model in Finland. *Developmental Psychology* 40: 412-429.
- Sroufe, L. A., B. Egeland, E. A. Carlson, and W. A. Collins. 2005. *The development of the person: The Minnesota study of risk and adaptation from birth to adulthood*. New York: Guilford.
- OECD 2008. OECD Economic Surveys: United States. 2008. Paris.
- U.S. Bureau of the Census. 2009. Historical income data: Current Population Survey tables. Retrieved September 25, 2009, from <<http://www.census.gov/hhes/www/income/histinc/histinctb.html>>
- U. S. Department of Commerce, Bureau of Economic Analysis. August 27, 2009. Table 1.1.1. Percent change from preceding period in real gross domestic product [percent].
- U.S. Bureau of Labor Statistics. 2009. Labor force statistics from the Current Population Survey Employment status of the civilian population.
- Vaughn, B. E., and E. Waters. 1990. Attachment behavior at home and in laboratory: Q-sort observations and Strange Situation classification of one year-olds. *Child Development* 61: 1965-1973.
- Waters, E.. 1987. Attachment Behavior Q-set (Revision 3.0). Unpublished instrument, State University of New York at Stony Brook, Department of Psychology.

- Wickrama, K. A. S., R. D. Conger, and W. T. Abraham. 2005. Early adversity and later health: The intergenerational transmission of adversity through mental disorder and physical illness. *Journal of Gerontology* 60B: 125-129.
- Williams, K. T.. 1997. Expressive Vocabulary Test. Circle Pines, MN: American Guidance Service.
- Williams, K. T., and J. Wang. 1997. Technical references to the Peabody Picture Vocabulary Test-Third Edition (PPVT-III). Circle Pines, MN: American Guidance Service.
- Yeung, W. J., M. R. Linver, and J. Brooks-Gunn. 2002. How money matters for young children's development: Parental investment and family processes. *Child Development* 73: 1861-1879.
- Yoder, K. A., and D. R. Hoyt. 2005. Family economic pressure and adolescent suicide ideation: Application of the family stress model. *Suicide & Life-Threatening Behavior* 35: 251-264.