Bridging the Income-Parenting Gap:
Three Papers on the Interrelationships of Household Income, Parenting Resources, and Child Outcomes

by

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A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Sociology)
in the University of Michigan
2016

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ACKNOWLEDGMENTS

Many thanks are due to many people for helping me to complete this dissertation. First, I must thank my dissertation co-chairs, Yu Xie and Sarah Burgard, for their guidance and seemingly infinite patience. Yu Xie's help was essential in establishing and honing the ideas and analytic approaches for this dissertation, and he trained me in many of the statistical methods used to carry them out. Sarah Burgard has provided incredibly specific and detailed comments on drafts of the chapters and suggestions for supplemental analyses that were invaluable in polishing the work. My other two committee members—Elizabeth Armstrong and Pam Davis-Kean—have also been invaluable for their help and perspectives. Elizabeth Armstrong has provided multiple rounds of comments and expertise from the more culture-focused parts of sociology that have helped me avoid completely butchering the ideas of Lareau and other theorists, and has been reassuring as a friendly and familiar face from before my graduate school days. Pam Davis-Kean has provided invaluable insight on the Panel of Income Dynamics Child Development Survey as well as essential expertise on child development. Individually, each of my committee members has been extremely patient and helpful; together, they have provided a much fuller perspective on what this project is that I feel has greatly improved it.

Numerous other faculty, staff, and students from the University of Michigan and elsewhere have also helped me immensely. David Harding and Brian Powell have provided excellent critiques on drafts, and I greatly appreciate the support I have received from Jennifer Barber, Barbara Anderson, Qing Lai, Alexandra Killewald, Geoff Wodtke, Dan Hirschman, Cindy Glovinsky, Rhonda Moats, and Heather MacFarland. Additionally, chatting with many of

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my fellow students, especially Michael Fang, Jared Eno, Anne Clark, and Shelley Petersen Walker, has helped keep me sane and interested in my work during this long slog.

Earlier versions of Chapters 2 and 3 were presented at the 2014 annual meeting of the American Sociological Association in San Francisco, and an earlier version of Chapter 4 was presented at the 2015 annual conference of the Population Association of America in San Diego. Discussants and audience members provided useful comments at all of these presentations.

I received financial support from the Population Studies Center and the Rackham Graduate School, both at the University of Michigan. I was also supported by the National Institute of Child Health and Development (NICHD) center and training grants (R24 HD041028 and T32 HD007339) to the Population Studies Center.

The Panel Study of Income Dynamics (PSID) is sponsored by the National Science Foundation, the National Institute of Aging, and the National Institute of Child Health and Human Development and is conducted by the University of Michigan. The Child Development Supplement to the PSID is sponsored primarily by the NICHD, the National Science Foundation, the Center on Philanthropy at Indiana University, and the U.S. Department of Agriculture, and was conducted by the University of Michigan. The Fragile Families and Child Wellbeing Study was funded by the Robert Wood Johnson Foundation, the U.S. Department of Health and Human Services, the National Institutes of Health, the National Science Foundation, and the Eunice Kennedy Shriver National Institute of Child Health and Human Development, and was conducted by the Center for Research on Child Wellbeing at Princeton University and the Center for Health and Wellbeing, the Columbia Population Research Center, and the National Center for Children and Families at Columbia University.

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Lastly, I would like to thank my family for their unconditional love, support, and understanding of the academic life. My mother, Janet, has spoiled me by taking care of me at home, made sure I eat and keep track of my life in my dissertation-addled state, and given me someone to discuss my projects with (even when I want to get away from them). My father, Joe, maintains an argumentative skepticism about social science and a focus on subgroup analyses that keep dinner discussions lively and keep me examining the epistemology and ontology of social science methods. And my older brother, Joe, is a role model of a young scholar who has successfully grappled with the issues of academic work-life balance and academic cynicism, giving me hope that, someday, I may as well.

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CHAPTER I

Introduction

Income inequality has increased in the US in the last three decades for reasons that have been widely debated (Duncan and Murnane 2011, Piketty 2014), and intergenerational mobility in the US now appears lower than in the past, reducing a child's chances of moving from poverty to wealth (Reardon 2011). These separate but related trends (discussed below) are of concern because studies have consistently shown associations between household income during childhood and a variety of young-adulthood outcomes (Bourdieu 1977, Smith, Brooks-Gunn and Klebanov 1997). For example, relative to their higher-income peers, young adults from lower-income families had lower cognitive skill scores, fewer years of education, and more behavior problems; they also showed greater likelihoods of dropping out of high school, teen pregnancy, single motherhood, or unemployment (Mayer 1997). These effects can be particularly pronounced for children who experience poverty for extended periods or in very early childhood (Brooks-Gunn and Duncan 1997, Duncan, Brooks-Gunn and Klebanov 1994). Thus, increasing income inequality may result in greater inequality of opportunity and life outcomes between children, and thus a greater number of children with poor prospects for life.

However, it is important to distinguish within-generation inequality from intergenerational mobility, because they represent different phenomena with different implications (Putnam 2015). Specifically, intergenerational mobility refers to changes between parent and child in socioeconomic status; societal norms in the US support the view that children should be able to "rise" above the status held by their parents if they work hard (Putnam 2015).

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In contrast, income inequality within a given cohort is not necessarily considered unusual or negative by most Americans (Putnam 2015), although recent analyses suggest that in fact income inequality was relatively low in the period between the end of World War II and the 1970s—a finding that implies that this period represented an historical anomaly compared to other time periods in the US (Piketty 2014).

Intergenerational mobility and intra-generational income inequality both contribute to rates of childhood poverty. If childhood poverty negatively impacts later cognitive or behavioral skills for children, then it may reduce intergenerational mobility or increase income inequality in the future, resulting in a vicious cycle of low socioeconomic status for some. Research has suggested that there are several mechanisms by which family income may influence child outcomes (Duncan, Magnuson and Votruba-Drzal 2015). This dissertation focuses on understanding the interaction of these mechanisms that explain the impact of income—material hardship, parent distress, parent behaviors, and choice of early childhood care providers—and effects of these mechanisms on child outcomes during the tween and teen years.

Child development between early childhood and adulthood can have a substantial impact on adult life trajectories. For example, cognitive skills—usually measured on the basis of standardized achievement test scores—predict educational achievement and earnings in adulthood and therefore directly impact intergenerational mobility (Nisbett 2009). Additionally, behavior problems related to "internalizing" (e.g., depression) and "externalizing" (e.g., aggression) are also associated with other important outcomes (e.g., educational achievement, employment, and criminal behavior) both early and later in life (Gershoff et al. 2007, Linver, Brooks-Gunn and Kohen 2002, Raver, Gershoff and Aber 2007, Yeung, Linver and Brooks-Gunn 2002). Thus, understanding the process of *how* income and other factors in childhood

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shape child development in these areas represents a basic first step in predicting the effects of childhood poverty.

Though the presence and importance of the association between family income in childhood and later life outcomes are clear, how and why these associations exist is difficult to pin down. There are many proposed explanations and mechanisms (Putnam 2015): transfer of resources; parenting practices; quality of education and child care; neighborhood quality and effects; incarceration of parent(s); and genetics, to name just a few broad areas. Many different mechanisms have received empirical support, and it is probable that the association between family income and child outcomes is the result of multiple, interconnected mechanisms. Even a superficial survey of all these mechanisms is beyond the scope of one dissertation, so this dissertation will focus on two specific areas: (1) family income, parenting practices, and child outcomes in the tween to teen years; and (2) family income, child care use prior to kindergarten, and early child outcomes. These are two areas in which interventions on the mechanisms connecting family income and outcomes may be more feasible than others (e.g., by improving preparedness among low income children for college education) and could be important stepping stones to later interventions (e.g., improving rates of graduation from college among those low income children). Thus, it is important to explore (1) how strongly parenting and early child care are related to child outcomes; (2) how much family income affects these two mechanisms, which then may mediate or moderate the effects of income on child outcomes; and (3) how possible and effective it could be to improve children's outcomes by intervening on these mechanisms. These questions are the focus of this three-study dissertation, with results reported in Chapters 2 through 4. I summarize each study briefly below.

Chapter 2 examines the interplay among family income, parenting practices, and later

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child outcomes by establishing a theoretically integrated model with multiple mechanisms linking the three. Prior research has proposed three general theories of how income influences child outcomes through parenting practices: (1) *parent distress theory*, which suggests that low income and material hardship cause parents psychological distress, which in turn negatively affects the quality and warmth of their parenting in ways that encourage problematic behavior by their children; (2) *parent investment theory*, that sufficient time and income allows parents to provide enriching activities and materials to and spend more time with the child to provide intellectual stimulation; and (3) *cultural parenting practices theory*, that social class membership (which is correlated with income) shapes the parent's style of parenting in ways that foster growth of particular skills, some of which are more useful than others in pursuing educational achievement and a middle-class career. I argue that these are three mechanisms through which income influences a single set of parenting behaviors that tend to occur together and have similar effects on child cognitive achievement and behavior skills. That is, I hypothesize that parents with higher levels of permanent income tend to: (1) have lower levels of distress that would negatively impact parenting warmth and cognitive stimulation toward the child, (2) invest more time and resources in their children's academic learning, and (3) hold higher educational aspirations for their child in ways that foster academic learning and behavioral skills.

The results presented in Chapter 2 provide information about the question of associations among the *levels* of income, parenting, and child outcomes over time, but do not address whether *changes* in these variables are related (i.e., a change in income and a subsequent change in parenting practices). Even if we observe cross-time associations between them it is possible that changes in the variables are unrelated, either because parenting practices may change little over time or because one or more of the associations is actually the spurious result of unmeasured

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variables (Duncan, Magnuson and Votruba-Drzal 2015). Chapter 3 addresses these possible alternative explanations with additional analyses of the PSID-CDS using fixed-effects regression analysis of within-child five-year changes in the variables examined in Chapter 2. Use of fixed-effects regression reduces potential bias from unmeasured variables by eliminating effects of any variables that did not change over the time period, helping to verify that the associations are not spurious.

It is clear that parenting practices play an important role in the link between family income and child outcomes (Duncan, Magnuson and Votruba-Drzal 2015). Yet parents are not the only people who "parent" or influence children, even prior to the children entering primary school. In the contemporary U.S., dual-earner and single-parent households in which young children cannot be cared for all the time by working parents have become the norm, and other sources of early child care and education have become increasingly available and professionalized. Depending on their levels of accessibility and training, these care providers could act as social equalizers, supplementing the care that disadvantaged parents find difficult to provide, due to less training, less time, or fewer resources. Alternatively, high quality care may be available only to advantaged children whose families can afford it—in which case child care may not serve to increase social mobility but only to perpetuate the current situation. Chapter 4 delves into this question by exploring the links among family income, primary type of pre-kindergarten child care used, and child cognitive achievement and behavior problems five years later. My prediction is that high family income is associated with greater likelihood of using particular types of child care that are usually of higher quality (e.g., center-based care, which generally is more regulated and has more resources and staff training than home-based care), and

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that type of care used is in turn associated with high child cognitive achievement and low child behavior problems.

These three studies examine the overarching research question about how family income is related to child outcomes through parenting and early child care in the contemporary U.S. Results from all three studies and their implications for intergenerational mobility are considered more fully in Chapter 5. Parenting variables and selection of high-quality early child care both represent potential mechanisms by which inequality between children (which is likely to persist into adulthood) is reinforced. On the other hand, these parenting mechanisms are not fully determined by family income, have a substantial impact on child outcomes on their own, and can be changed directly, suggesting they may be an effective point of intervention in the process that is more feasible than direct supplementation of families' incomes. Similarly, because some types of early child care may benefit child outcomes independently of the factors that affect their availability (including income), provision of quality public preschools may help to bridge the gap in school preparedness between high-income and low-income children (Burchinal et al. 2015).

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CHAPTER II

Income and Child Outcomes:

Testing a Model of Parent Distress and Parenting Practices as Mediators

2.1 Introduction

Parenting practices represent one mechanism linking family income and child outcomes outside of formal education. There are three major explanations of this mechanism in the literature (Duncan, Magnuson and Votruba-Drzal 2015) which overlap conceptually and may not be distinct empirically. In this study I examine the three streams to assess whether they represent three distinct mechanisms or in fact should be viewed as one or more pooled mechanisms that act in concert with one another. Three mechanisms have been postulated: (1) low income and resulting material hardship (e.g., food insecurity or housing instability) increase *parent distress or strain* (e.g., marital conflict, depression), which leads to negative parenting behaviors (e.g., spanking) that reduce child cognitive achievement and increase behavior problems (Gershoff et al. 2007); (2) high income supports *parent investment* of time and money in child enrichment (e.g., procuring educational materials and activities and attending school meetings), which stimulates child cognitive achievement and reduces behavior problems; and (3) high income and social class are correlated with more supportive parenting behaviors (e.g., cognitive stimulation, emotional warmth, and parent expectations for child educational achievement) according to *cultural theories of parenting practices and values*. Prior research shows that these mechanisms

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are individually related to child cognitive achievement and behavior problems, but has less frequently tested them in conjunction. A joint test of the mechanisms is necessary for three reasons: (1) the parenting practices involved in these three explanations are in fact *interrelated* and complementary (Duncan, Magnuson and Votruba-Drzal 2015), so it is useful to test their relationships to income at the same time in order to assess relative strength of relationships; (2) the mechanisms posited by the explanations are generally assumed to be *separate and necessary but insufficient to explain child outcomes,* an assumption that should be tested empirically by investigating all three mechanisms simultaneously; and (3) the three mechanisms represent variables that theoretically *mediate the relationship of income* to child outcomes, but the possibility of mediation should be tested for all three mechanisms at the same time in order to assess their orthogonality.

Thus, in this study I test an integrated model (see Figure 2.1) of family income as a predictor of child cognitive scores and behavior problems in the teen and tween years. I postulate that the effects of income are mediated by two sets of variables: (1) material hardship and (2) parenting variables (parent distress, parent investment, and parenting practices that include cognitive stimulation, emotional warmth, and educational expectations for the child). I use structural equation modeling (SEM) to test: (1) a measurement model to assess whether the parenting variables represent separate and independent constructs; (2) a structural model to determine whether material hardship and the parenting variables partially or fully mediate the relationship between family income in the tween years (average age of 10 years) and child outcomes in the teen years (average age of 15 years); and (3) goodness of fit of the structural model relative to simpler alternative models that exclude one or both of the two types of mediating variables (to show the comparative importance of the different mediators).

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Earlier research has examined relationships among some of these variables, but has been hampered by one of three problems: (1) it examined some but not all variables in the same study; or (2) it relied on cross-sectional data rather than longitudinal data; or (3) it used samples of young children and could not examine effects on cognitive and behavior problems for tweens and teens. In this study all parts of the model can be investigated using longitudinal data focused on the effects of family income and parenting variables in early childhood on child outcomes in the tween and teen years.

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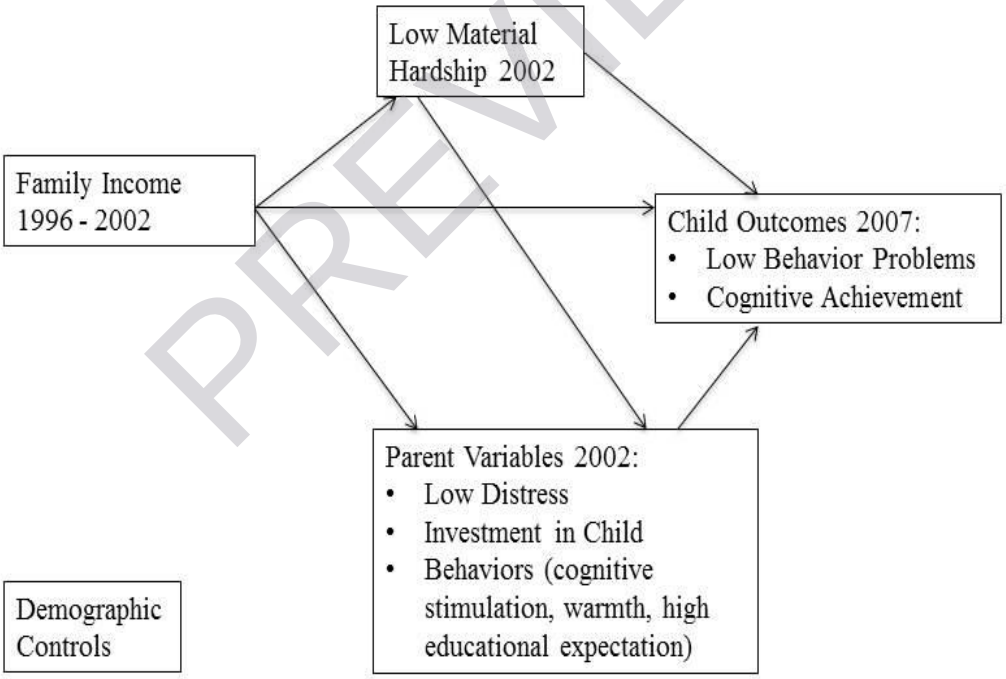
Figure 2.1. Predicted Relationships of Family Income to Other Variables



Family income may influence child outcomes both directly and indirectly (through mediating variables). I postulate two types of mediating variables in Figure 2.1: parent variables

and family material hardship. Below I briefly summarize past theory and research about the relationship between income and parent variables, followed by discussion of the relationship of income to material hardship. In both areas I also review the effects of family income, material hardship, and parent variables on child outcomes.

2.2 Background

2.2.1 Parent Variables as Mediators of the Relationship of Income to Child Outcomes

As noted above, there are three theoretical frameworks about parent variables that may mediate the relationship of income to child outcomes: parent distress (or strain) theory, parent investment theory, and cultural theories of parent behavior. The first framework, parent distress theory, posits that low income causes parents distress, resulting in less expression of warmth and support toward the child (Conger et al. 1992, Conger et al. 1994, Conger, Conger and Martin 2010, Elder et al. 1992, McLeod and Shanahan 1993) that would prevent behavior problems (e.g., aggression or depression). Empirical results from this literature, as reviewed by Duncan et al. (2015), have generally supported the propositions that income is related to parent distress, which in turn is related to parenting practices, and ultimately to child outcomes.

Second, parent investment theorists argue that high income permits parents to invest more money and time in materials (e.g., books or musical instruments) or activities (e.g., attendance at cultural events) that provide cognitive stimulation to the child and lead to development of cognitive skills (Mayer 1997). Empirically, there are significant differences between low and high income families in terms of the level of investments made in materials available and activities provided to the child (Kaushal, Magnuson and Waldfogel 2011). There are also differences in parental school involvement, due in part to the fact that high income

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parents have more discretionary time to engage in such activities (Dumais, Kessinger and Ghosh 2012, Lee and Bowen 2006, Sui-Chu and Willms 1996). These school events may or may not involve the child, but they do serve to help to embed the parent and therefore the family in the community, providing social capital and knowledge that may help the child's overall development (Coleman 1988). As reviewed by Duncan et al. (2015), parent investment has been found to be related to child cognitive achievement.

Finally, cultural theories of parenting focus on parents' ideas, beliefs, and assumptions, and how they form particular "clusters" by social class. In the Bourdieusian tradition they are integrated and overarching ways of doing things that are "taken for granted" or expected, referred to as "habitus" (Bourdieu 1977, Lewis 1966), that confer advantages through exchangeable forms of capital (e.g., economic resources, social ties, and cultural repertoire). Other studies treat these clusters as more explicit values (Kohn 1959, Kohn 1963, Kohn and Schooler 1969) or discourses of parenting (Lareau 2011) that are associated with (but not wholly determined by) economic class. Lareau ([2003], 2011) in particular found that parenting practices were associated with child behavior and cognitive achievement. Several studies have found that the relationship between income and cognitive skills is partially mediated by habitus, often measured as the child's career or college aspirations (Bodovski and Farkas 2008, Dumais 2002, Gaddis 2013, Irwin and Elley 2011) or as parenting practices measured with indices (Redford, Johnson and Honnold 2009), latent constructs (Cheadle 2008, Cheadle 2009, Cheadle and Amato 2011), or independent constructs of individual parenting practices (e.g., warmth and cognitive stimulation) (Guo and Harris 2000).

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2.2.2 Hypotheses about Family Income

As seen above, all three theories lead to a basic set of hypotheses that family income is related to parent behavior. Thus:

Hypothesis 1a. Family income is inversely related to parent distress.

Hypothesis 1b. Family income is positively related to parent investment.

Hypothesis 1c. Family income is positively related to parent behaviors of cognitive stimulation, warmth and education expectation.

Results from past research suggest a second set of hypotheses concerning the relationships between the three mechanisms and child outcomes. Therefore:

Hypothesis 2a. Parent distress is positively related to child behavior problems.

Hypothesis 2b. Parent investment is positively related to child cognitive achievement.

Hypothesis 2c. Parent behaviors of cognitive stimulation, warmth and education expectation are positively related to child cognitive achievement and inversely related to child behavior problems.

Finally, as reviewed above, parent distress theory also implies a connection to variables often associated with cultural and investment theories. Specifically, parent distress theorists have argued that distressed parents are less likely to express warmth toward the child, engage in cognitive stimulation, or hold high educational expectations for the child, and that these behaviors are in turn related to child cognitive achievement. This expected relationship between parent distress and parent behaviors suggests a third hypothesis:

Hypothesis 3. Parent distress is inversely related to parent behaviors of cognitive stimulation, warmth, and education expectation.

2.2.3 Assumptions about Family Income

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