



Socioeconomic status and receptive vocabulary development: Replication of the parental investment model with Chilean preschoolers and their families[☆]

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ABSTRACT

Drawing on the first wave of data from the Chilean Longitudinal Study for Early Childhood the current study examined the relation between family socioeconomic status (SES) and children's receptive Spanish vocabulary, and whether these relations were mediated by physical features of the home environment, parent–child interactions, and participation in center-based child care. The results of path analyses ($n = 1589$) estimating direct and indirect effects of SES on children's receptive vocabulary test scores provided evidence of partial mediation through indices of standard of living and parents' level of cognitive and linguistic stimulation in the home. This study is among the first to replicate with a non-U.S. sample, a well-established linkage among SES, family-level conditions and processes, and young children's language outcomes.

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Introduction

The first Millennium Development Goal (MDG1), set by the United Nations with global commitment in 1990, was to reduce the number of people living below the international poverty line (\$1.25 per day) in half, or by 700 million people, by 2015 (United Nations [UN], 2013). Since then, remarkable progress has been made and MDG1 was pronounced “achieved” as of 2010, five years ahead of schedule (UN, 2013). Despite these important advances in poverty reduction, 1.2 billion people, a disproportionate number of whom are children, continue to live in conditions of poverty around the world (UN, 2013). In the United States and internationally, the adverse effects of low socioeconomic status (SES) on young children's language, cognitive, socioemotional and physical development is well established (Evans, 2004; McLoyd, 1998; Walker et al., 2007). However, additional research with non-U.S. samples

on the mechanisms through which SES is associated with children's development is needed if policies and programs are to be crafted and implemented to effectively support vulnerable children and families in all parts of the world (Britto, Yoshikawa, & Boller, 2011).

The current study sought to test the generalizability of the parental investment model (PIM) of SES influences on child development, which has robust empirical support based on diverse U.S. samples, in a novel and importantly non-U.S. context, Chile. In the United States, children's language development, particularly vocabulary, is positively associated with SES and is an important predictor of children's later literacy development (Snow, 2006). Furthermore, family processes such as investing time and resources in children's cognitive and linguistic development have been shown to be important pathways by which SES matters for children's language development (Conger, Conger, & Martin, 2010). Similar associations between SES and vocabulary development have been documented in Latin America. For example in Ecuador and Chile, lower levels of SES are associated with lower language test scores (Paxson & Schady, 2008; World Bank, 2012). However, the mechanisms by which this transmission occurs in Latin American countries have been less well demonstrated (Schady, 2006). To address these limitations, our study investigated the mechanisms through which SES was associated with children's vocabulary test scores using nationally representative data based on a sample of preschool-aged Chilean children. Our study's findings have theoretical implications such as the degree of generalizability of relations among SES, family processes and child development across

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varied contexts and also practical implications for social policy design particularly regarding the inclusion of parent education, income transfers, and subsidies to families with young children.

Comparing Chile with the United States

For the current study, we drew on research conducted in the United States and internationally, particularly in Latin American countries, to inform our conceptual model. Bridging these two bodies of research was necessary due to limited published research assessing the mechanisms through which SES influences young children's development based on Latin American samples. Conceptual frameworks and research findings on SES and child development based on work in the United States are pertinent to the Chilean context because, across several national-level economic and education indicators, Chile and the United States look fairly similar. For example, Chile and the United States have similar overall and child poverty rates. Recent estimates for Chile indicate that 21% of the overall population and 24% of the child population are poor (Organization of Economic Cooperation and Development, [OECD] 2011a). Comparable rates in the United States are 17% and 22%, respectively (OECD, 2011a). Furthermore, both Chile and the United States are characterized by dramatic inequality (OECD, 2011a).

With respect to social policies, there are important similarities and differences when comparing the two countries. Chile has a long history of social policies that target the most vulnerable populations (Palma & Urzúa, 2005). Furthermore, young children were recently given the highest priority on the country's political agenda through the creation of a national policy framework and program, *Chile Grows with You* in 2006 (Vega, 2011). *Chile Grows with You* provides free access to early childhood care and education (ECCE) services for children starting at three months of age and continuing through age four and who also live in the poorest 60% of Chilean households, while kindergarten education (for 5-year-olds) was recently made compulsory and free (Chilean Ministry of Education, 2014; Peralta, 2011). Chile has slightly higher preschool enrollment rates for children ages 3–5 than the United States. In 2008, 63% of children ages 3–5 were enrolled in preschool education services in Chile, while the comparable enrollment rate was 56% in the United States for the same year (OECD, 2013).

SES and child development

In the current study, we include two commonly used indicators of SES, household income per capita and maternal education, which are shown to exert differential impacts on children's development (Duncan & Magnuson, 2005). First, we review relevant literature linking income to language development and then we turn to empirical work examining the relation between maternal education and language development.

Income and language development

Poverty is negatively associated with a host of outcomes for children (Duncan & Brooks-Gunn, 2000). There is robust evidence, across diverse samples in the United States, linking adverse language development with low-income status for young children (Arraiga, Fenson, Cronan, & Pethick, 1998; Dearing, Berry, & Zaslow, 2006; Dearing, McCartney, & Taylor, 2001; McLoyd, 1998; Shonkoff & Phillips, 2000; Smith, Brooks-Gunn, & Klebanov, 1997; Stipek & Ryan, 1997). In Latin American countries, similar negative language outcomes have been documented for young children growing up in conditions of poverty, although fewer studies have been published linking SES to young children's language development. For example, Paxson and Schady (2008) reported that poorer children in rural Ecuador had substantially lower vocabulary test scores

relative to their less poor peers. To our knowledge, research regarding the link between income and language development in Chile has not yet been conducted.

Maternal education and language development

Similar to income, maternal education level is also positively associated with a number of child outcomes across cognitive, linguistic, and behavioral domains (Raviv, Kessenich, & Morrison, 2004; Roberts, Bornstein, Slater, & Barrett, 1999; Rosenzweig & Wolpin, 1994). In the case of language outcomes, maternal education is thought to be a more important determinant of children's development than income (Hoff, 2013). In the United States, children whose mothers have lower levels of education experience less complex language environments in terms of vocabulary, sentence structure, and contingent responses and also display slower rates of vocabulary growth compared with peers whose mothers have higher levels of education (Hart & Risley, 1995; Hoff, 2003; Hoff-Ginsberg, 1998). While there is certainly substantial diversity in young children's language development within low-SES populations (Bailey & Moughamian, 2007) in general, lower levels of education are adversely associated with young children's development (Dearing et al., 2006).

Young children's experiences with language also differ by maternal education levels in Latin American countries. In Chile, higher parental education is associated with increased vocabulary test scores (World Bank, 2012). Rogoff (2003) observed that Guatemalan Mayan mothers who had limited formal education were less likely to converse with their children and model the academic discourse typically found in formal education systems as compared to more highly educated Mayan mothers. Similar findings were reported for a sample of Mexican mothers, where higher maternal education level was observed to be positively associated with mothers' verbal responses to their young children's bids for attention (Richman, Miller, & LeVine, 1992). These findings are significant because in the United States, early vocabulary development is an important predictor of later language development (Rowe, Raudenbush, & Goldin-Meadow, 2012) and reading comprehension (Snow, 2006) and, in turn, of academic success across the elementary and high school years (Dickinson, 2011).

In summary, research conducted both in the United States and Latin American countries has consistently shown that SES is associated with young children's language experience and outcomes, specifically vocabulary development. However, in the Latin American context, much less attention has been paid to examining the processes by which SES influences children's language outcomes, particularly in Chile.

Pathways through which SES affects child development: the parental investment model

The key to developing programs and policies that effectively supports young children from disadvantaged backgrounds lies in understanding the mechanisms through which SES is associated with early child development. PIM, which has garnered substantial empirical support in the United States, specifies a collection of mediating pathways that account for variation in children's language and cognitive test scores as a function of SES (for reviews see Conger et al., 2010; Huston & Bentley, 2010; McLoyd, Mistry, & Hardaway, 2014). Research results on PIM indicate that associations between SES and children's cognitive and linguistic outcomes are mediated through the following three pathways: (1) a family's standard of living, (2) access to cognitively stimulating resources and activities inside the home, and (3) access to high quality services outside of home, including ECCE programs (Mistry & Wadsworth, 2011).

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