INCOME AND CHILD WELL-BEING

Thirty-Fourth Geary Lecture, 2005

GREG J. DUNCAN

INCOME AND CHILD WELL-BEING

Thirty-Fourth Geary Lecture, 2005

GREG J. DUNCAN

Copies of this paper may be obtained from The Economic and Social Research Institute (Limited Company No. 18269). Registered Office: 4 Burlington Road, Dublin 4, Ireland
www.esri.ie

Price IR €8.00
ISBN 0 7070 0246 X

Greg J. Duncan is Edwina S. Tarry Professor, School of Education and Social Policy at Northwestern University, Illinois.

Income and Child Well-Being[1]

Greg J. Duncan

1. Introduction

My topic this afternoon is the link between family income and the well-being of children. While it is easy to document the better health and higher achievement of children who have grown up in richer as opposed to poorer families, it is much harder to isolate the causal impact of income itself. Children growing up in higher income families are advantaged in many other ways, including having parents who have completed more formal schooling and are embedded in higher-status social networks, and whose genetic endowments may provide cognitive and health-related advantages.

The question I seek to answer concerns the impact of income itself and takes the form of a policy thought experiment: by how much would we expect a child's well-being to improve if that child's family were unexpectedly given more income through, say, a more generous child allowance?

In attempting to answer this question I will first discuss relevant models of child development from economics and developmental psychology and then document some of the differences in well-being between high and low income children. I will then review some of the empirical studies of the links between income and child achievement. In my review I will begin with cross-sectional evidence, move next to longitudinal studies and then consider some recent innovative studies that use natural and random-assignment experiments and instrumental-variables methods. I will conclude with some thoughts about the policy implications of the results from these studies.

[1] This paper was delivered as the 2005 Geary Lecture at The Economic and Social Research Institute, Dublin, Ireland, December 12. I would like to thank Amy Claessens, Dorothy Duncan, Katherine Magnuson and Hilary Hoynes for their help in the preparation of this paper.

2. Models of Child Development

Economic models of child development (e.g., Becker, 1981) view families with higher economic resources as being better able to purchase or produce important "inputs" into their young children's development (e.g., nutritious meals; enriched home learning environments and childcare settings outside the home; safe and stimulating neighbourhood environments), and, with older children, higher-quality schools and university education. The degree to which these inputs are purchased is presumed to vary with their cost, the family's household income, and parents' preferences for purchases that meet their own versus their children's needs. The efficiency with which parents and children are able to translate inputs into positive developmental outcomes is presumed to vary with both the innate and acquired abilities of parents, for example through their formal schooling (Michael, 1972).

Psychologists emphasise that higher incomes may improve family psychological processes such as parental emotional well-being and parenting (Chase-Lansdale and Pittman, 2002; McLoyd, 1990; McLoyd, Jayartne, Ceballo and Borquez, 1994). A long line of research (reviewed in McLoyd, 1990) has found that low-income parents, as compared with middle-class parents, are more likely to use an authoritarian and punitive parenting style and less likely to provide their children with stimulating learning experiences in the home. Poverty and economic insecurity take a toll on a parent's mental health, and this may be an important cause of low-income parents' non-supportive parenting. As described by Zahn-Waxler, Duggal, and Gruber (2002), depression and other forms of psychological distress can profoundly affect parents' interactions with their children.

Turning to the children themselves, developmental psychologists stress the importance of understanding children's distinct developmental stages, the transitions from one stage to the next, and the conditions prevailing during the various stages and transitions (Bronfenbrenner and Morris, 1998). In the context of poverty studies, the greater malleability of children's development and the overwhelming importance of the family (as opposed to school or peer contexts) for preschoolers lead us to expect that economic conditions in early childhood may be much more important for shaping children's ability and achievement than conditions later in childhood (Bronfenbrenner and Morris, 1998; Shonkoff and Phillips, 2000).

Cunha, Heckman, Lochner, and Masterov (forthcoming) propose an economic model of development in which preschool cognitive and

socio-emotional capacities are key ingredients for human capital acquisition during the school years. In their model, "skill begets skill" and early capacities can affect the productivity of school-age human capital investments. The rest of the economics literature generally ignores the notion that the effects on children's development of economic conditions may depend upon childhood stage. Instead, economists have focused on the role of "permanent" income, with the assumption that families anticipate bumps in their life-cycle paths and can save and borrow freely to smooth their consumption across these bumps (Blau, 1999).

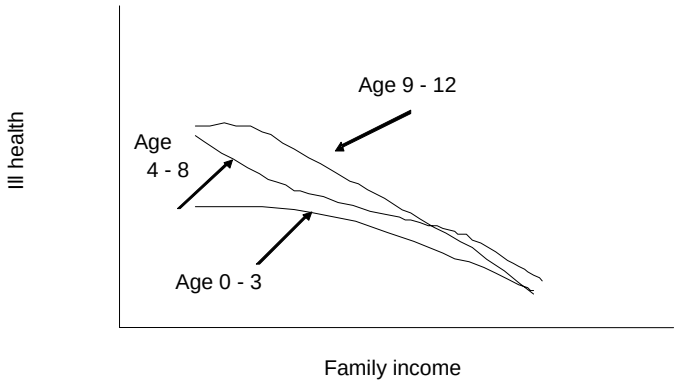
3. Poorer Children Do Worse

Many studies have demonstrated correlations between a child's family income and various measures of child achievement, health and behaviour (e.g., Duncan and Brooks-Gunn, 1997; Mayer, 1997). US studies on this topic often compare children with family income above and below the official US poverty threshold, which is now about $15,000 (about €12,700) per year for a family with three members.

As summarised in Brooks-Gunn and Duncan (1997, Table 1), the strength and consistency of these associations is striking. For example, the risk of poor relative to nonpoor children is: 2.0 times as high for grade repetition and high school dropout; 1.4 times for learning disability; 3.1 times for a teenage out-of-wedlock birth; 6.8 times for reported cases of child abuse and neglect; and 2.2 times for experiencing violent crime. Low family income during early childhood has been linked to less secure attachment and to higher levels of negative moods, inattention and behaviour problems (Duncan and Magnuson, 2002).

A recent correlational study of income and health for US children shows a monotonic relationship with income (Figure 1, taken from Case, Lubotsky and Paxon, 2002) that strengthens as children grow older. While better health is certainly expected for non-poor children relative to poor children, it may be surprising that the income/health "gradient" persists at higher income levels as well. The steepening slope of the gradient raises intriguing questions about process. Case *et al.* (2002) show that health conditions such as asthma appear more likely to translate into ill health in early adulthood for lower- than high-income children, although Currie and Sabile (2003) were not able to replicate these process relationships in Canadian data.

Figure 1: Ill Health and Family Income, by Age of Child



Source: Case, Lubotsky and Paxon (2002).

4. Estimation Methods

Turning from description to causal analysis, the key estimation problems in assessing the impact of family income on child well-being are two-fold: timing of measurement and omitted-variable bias.

Theory suggests that the development of children's cognitive and social skills is a time-consuming process. Attainments in, say, adolescence, are a product of economic conditions not only in adolescence but also in early and middle childhood and possibly during the prenatal period as well (Barker, 1998). Estimates from a model of income effects that measures income concurrently with the child outcomes risks bias if income is volatile across childhood. Since there is abundant evidence that income is indeed volatile, not only in the US but in Ireland and continental European countries as well (Duncan, 1988; Duncan *et al.*, 1993), a longitudinal perspective on the role of income in shaping child well-being appears crucial.

Even supposing that income is measured well across the entire period of childhood, a multiple regression relating child attainments to childhood income risks omitted-variable bias, since there is an abundance of factors that might simultaneously influence family income

and child well-being. Parental cognitive ability is a prime example (Rowe and Rodgers, 1997). Parents with higher cognitive ability are usually more successful in the labour market. At the same time, they are more likely to provide a higher-quality learning environment for their children, regardless of how much money they may be spending on books or computers. Although many surveys measure parental education, few take the time and effort to administer a test of cognitive ability to parents, and failure to control for parents' cognitive ability may well cause income to appear more important than it is. Countless other examples, including parental mental health and orientation toward promoting their children's achievement, give rise to serious concerns regarding omitted-variable bias from conventional regression studies.

At the other end of the methods spectrum would be reliance on data gathered in an experiment in which families were randomly assigned to an income-augmenting program that was not contingent upon changes in employment or other behaviours that might have their own effects on children. Although experiments can suffer from problems of generalisability, Hawthorne effects, etc. (Shadish, Cook and Campbell, 2002), their virtue is that they eliminate omitted-variable bias by forcing their treatment and control groups to have virtually identical measured and unmeasured characteristics.

Second-best strategies involve instrumental-variable procedures, in which changes in family income that are beyond the control of the family are related to child well-being. The trick here is to find sources of variation in family income that are truly beyond the family's control and that are not themselves likely to affect children independently. We will review a couple of clever applications of instrumental variables procedures for estimating income effects on child development.

5. Longitudinal Studies

Duncan and Brooks-Gunn (1997) co-ordinated an attempt by twelve groups of researchers working with ten different non-experimental but longitudinal data sets to estimate longitudinal models of income effects on child well-being. In some cases outcomes were measured around the point of school entry, with economic conditions measured from birth. In other cases, attainments in early adulthood, such as completed schooling and labour market earnings, were related to family income during adolescence. All regressions controlled for parental schooling and family

size, but for few other family conditions, and thus they risk some degree of omitted-variable bias.

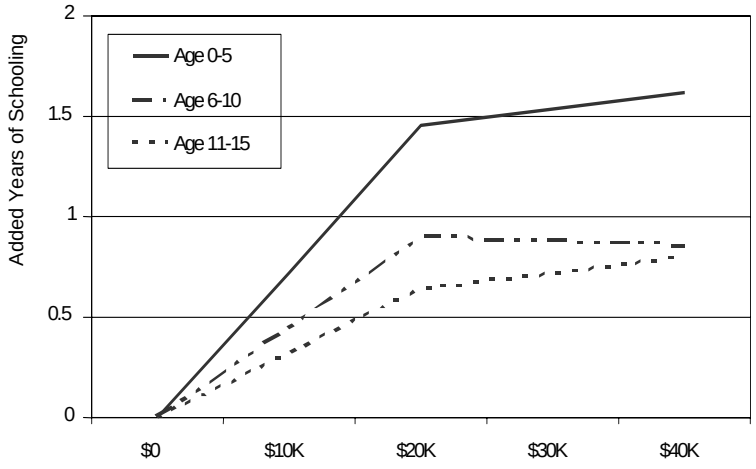
On the whole, the results suggest that family income has substantial but decidedly selective associations with children's attainments. The selective nature of effects included the following: (i) family income had much larger associations with measures of children's ability and achievement than with measures of behaviour, mental health and physical health; (ii) family economic conditions in early childhood appeared to be more important for shaping ability and achievement than did economic conditions during adolescence; and (iii) the association between income and achievement appeared to be non-linear, with the biggest impacts at the lowest levels of income.

The importance of economic conditions during early childhood was confirmed in the analysis by Duncan, Yeung, Brooks-Gunn and Smith (1998) analysis relating children's completed schooling to household income measured in every year between birth and age 15 years. Data were drawn from 1,323 children born between 1967 and 1973 in the US nationally-representative Panel Study of Income Dynamics. To allow for the differential impact of income by childhood stage, they related years of children's completed schooling to measures of family income averaged over the first, second and third five-year segments of the children's lives (Figure 2).[2] To allow for non-linear effects of income, Duncan *et al.,* fit piecewise linear (spline) regressions with different slopes for observations with incomes that averaged less and more than $20,000.

The results appear to show that the timing of economic deprivation matters a great deal for the schooling outcomes, with income early in life by far the most important. The coefficients graphed in Figure 2 suggest that, if we control for income in other stages and for other family conditions, the completed schooling of children in families with birth-to-age-five incomes below $20,000 is boosted by .8 years by a $10,000

[2] The regression models also control for mother's schooling, family structure, race, gender, and the age of the mother at the birth of the child, total number of siblings, whether ever lived in South, number of geographic moves and number of years mother worked for 1,000+ hours. Parental income is inflated to 1993 price levels.

Figure 2: Estimated Impacts of Average Annual Income on Completed Schooling, by Childhood Stage



increase in annual income. Early-childhood income increments above $20,000 do not have a significant association with completed schooling. Income from middle childhood and adolescence also failed to predict to the schooling outcomes.[3]

[3] Duncan *et al.* (1998) found some evidence that high parental income during adolescence had a positive effect on completed schooling. Additional analyses produced the unsurprising result that having affluent parents as a teenager increases your chances of attending college. Not all of the longitudinal studies in the literature support these conclusions (Haveman and Wolfe, 1995). Using the Panel Study of Income Dynamics and the National Longitudinal Survey of Youth, Mayer (1997) provides a set of tests for omitted-variable bias and finds large reductions in the estimated impact of parental income on achievement and behaviour problems, leading her to conclude that much of the estimated effects of parental income on children in the literature is spurious. Blau (1999) uses data from the National Longitudinal Survey of Youth to estimate a number of models relating income and other aspects of parental family background to children's ability, achievement test scores, and behaviour problems. In general, he finds small and insignificant effects of current income and larger (though still modest) effects of long-run income. Neither Mayer (1997) nor Blau (1999) distinguish childhood-stage-specific economic conditions as completely as Duncan *et al.* (1998).

The first row of Table 1 translates these income effects into a metric that lends itself to comparisons across studies. The schooling impacts are converted into standard deviation units, while income is scaled in increments of $3,000. Policy changes such as the US Earned Income Tax Credit provide more than $4,000 of added income to low-income families, although this level of benefits has been built up over more than a decade. Expressed in this way, the coefficients of Duncan *et al.* (1998) suggest that a $3,000 increase in annual income sustained over the preschool years increases completed schooling by about one-eighth standard deviations. A similar increase during middle-childhood is estimated to have an insignificant effect on completed schooling.

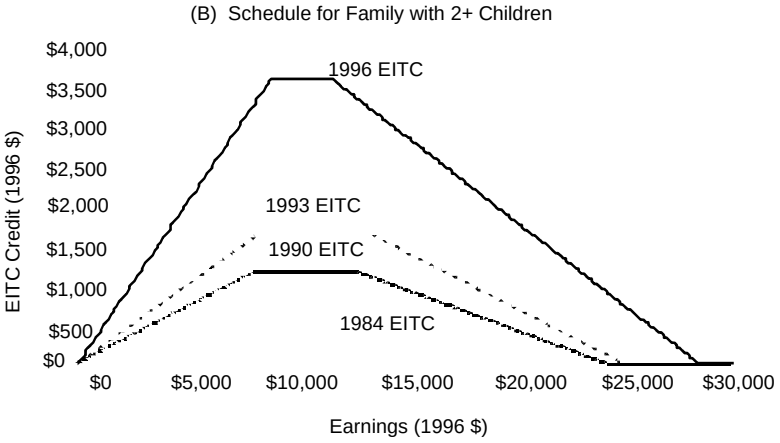
Table 1: Estimated Impacts of $3,000 Increase in Annual Income on Child Achievement

		Pre-School Income	Middle Childhood Income
Duncan *et al.,* OLS	Completed schooling	.12 sd	ns
Dahl and Lochner IV	Reading	.09 sd	.09 sd
	Math	.05 sd	.05 sd
Morris *et al.,* IV	Achievement	.18 sd	ns

6. A Natural Experiment

State or national policies sometimes change in ways that provide researchers with opportunities to relate policy-induced changes in income to child well-being. Such is the case with the study by Dahl and Lochner (2005), who take advantage of the fact that the United States increased the generosity of its Earned Income Tax Credit (EITC) program during the 1990s. The EITC provides a refundable tax credit to low-income working families. The maximum size of the annual credit is now quite substantial – $4,300 – and it increased by about $2,100 in the middle 1990s (see Figure 3 to see how benefits changed for a family of three). Dahl and Lochner matched data from an ongoing study of child development (the National Longitudinal Survey of Youth – Child Sample) to the year-to-year variability in income caused by changes in the EITC tax credit schedules. The child study provided biennial assessments of child reading and math achievement. They used instrumental variables methods to relate the EITC-induced variability in family income to child achievement.

Figure 3: EITC Benefit for Selected Tax Years, by Earnings (1996 dollars)



A summary of their results is presented in the second and third rows of Table 1. Their preferred estimates suggest that a $3,000 increase in family income boosts reading achievement by about one-tenth of a standard deviation and math achievement by about half that amount. In contrast to Duncan *et al.* (1998), Dahl and Lochner (2005) find quite similar effects of income in middle childhood and during the preschool years.[4]

7. Random-Assignment Experiments

The United States is blessed with a policy culture that values random-assignment policy experiments, some of which have tested programs directed at increasing family income. In four income-maintenance experiments conducted in the 1960s and 1970s, treatment families received an income supplement that varied with the family's income from work and other sources (Institute for Research on Poverty, 1976;

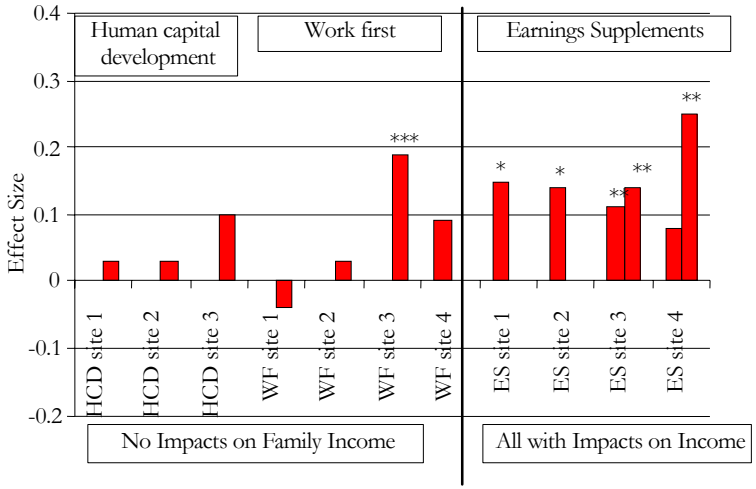
[4] The Dahl and Lochner model presumes concurrent effects of income on child achievement and the earliest measurement of child achievement is age five, so their data do not cover much of the preschool period. Their attempt to estimate a model with lagged income effects is inconclusive.

Kershaw and Fair, 1976). However, these studies focused on adult labour supply responses and none of them measured child outcomes very well (Salkind and Haskins, 1982). The child-focused studies that could be conducted with the data suggested that school performance and attendance were affected positively in some sites among elementary-school-age children, but not among high-school-age adolescents. High-school completion and advanced education were higher for program-group adolescents in the two sites that measured these outcomes.

A series of experimental welfare reform evaluation studies was undertaken in the United States and Canada during the 1990s (Morris, Huston, Duncan, Crosby and Bos, 2001). Like the income maintenance experiments of the 1960s and 1970s, all of these programs relied on random assignment. But in this case, all gathered fair- to high-quality information on such children's outcomes as academic achievement and problem behaviour. The total number of children included in the eleven experiments that comprised the meta-analysis of Morris *et al.* (2001) was more than 30,000. For the purposes of estimating income effects on children, a disadvantage of these programs is that none of them offered pure income enhancement. Some boosted income through earning supplements while others allowed participants to keep more cash assistance than their control-group counterparts. Still others employed sanctions and time limits to encourage work but had no net impact on family income.

A comparison of the effects on child outcomes of programs that only boosted parental employment with the effects of programs that boosted both employment and income is suggestive of the extent to which increases in family income benefit children. Virtually all of the programs promoted employment. Figure 4 shows the varying impacts of the programs for programs that did and did not boost family income. Programs labelled "HCD" (Human Capital Development) were designed to provide basic and job-related skills to participants. Programs labelled "WF" (Work First) emphasised the importance of getting a job. Programs labelled "ES" (Earnings Supplement) provided incentives for work in the form of earnings supplements.

Figure 4: Impacts of Welfare Programs on Young Children's Achievement



Source: Based on data from Morris *et al.* (2001).

For the purposes at hand, the key question is whether the programs with the largest income increases tended to have the biggest impacts on child outcomes. Using teacher-, parent- and test score-based measures of student achievement as the child outcome, Figure 4 shows that this was indeed the case. For children who were preschoolers at the point of random-assignment and in primary school at the time their outcomes were assessed, the average achievement impacts of children in the earnings supplement programs exceeded those of the children in the less generous programs.

A more formal analysis of these data by Morris *et al.* (2001) revealed that welfare reforms that both increased work and provided financial supports for working families generally promoted children's achievement and positive behaviour, although children's achievement appeared to improve more than their behaviour. In contrast, welfare reforms that mandated work but did not support it financially had few impacts – positive or negative – on children. Thus, it appeared that merely increasing maternal employment had no impact on children's achievement, but increasing both work and income had a positive effect. For these young children, family income gains of roughly $1,000 per year

translated into program effects of about .07 of a standard deviation (Morris *et al.*, 2001).

As with the Duncan *et al.* (1998) longitudinal analysis, this pattern of impacts does not generalise to children in other stages of childhood. Elementary-school children were helped by the reforms that increased family resources and, for the most part, unsupportive ones did not harm them. For adolescents, more limited evidence suggested that even generous reforms that promoted maternal employment may have increased school problems and risky behaviour (Gennetian *et al.*, 2002).

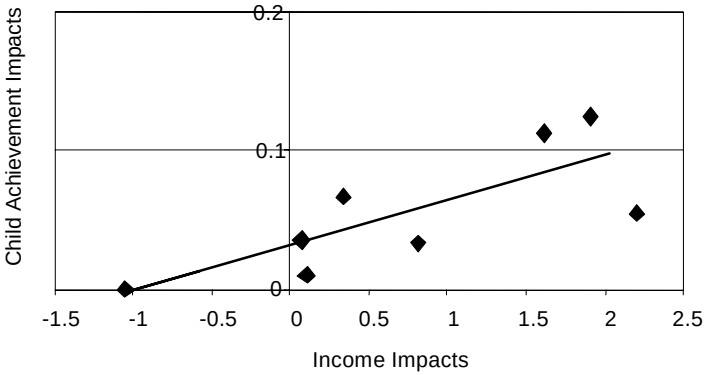
8. Instrumental Variables' Estimates Based on Experimental Data

Although a comparison of child impacts across different types of programs is useful, it does not provide a direct estimate of income effects. However, Morris *et al.* (2005) show that one can use the experimental data in Figure 4 in an instrumental-variables model that provides the needed estimates of income effects.

The idea behind their instrumental-variables procedure is straightforward. If Y=child achievement and X=family income, then we seek an unbiased estimate of $\beta = \Delta Y/\Delta X$. Instrumental variable procedures seek an exogeneous source of variation (Z) so that β can be estimated from $[(\Delta Y/\Delta Z)/(\Delta X/\Delta Z)]$. On Figure 5, this corresponds to the slope of the best-fitting line drawn through the program-impact data points.

The IV estimates of Morris *et al.* (2005) suggest that a $3,000 increase in annual income sustained for between two and five years boosts child achievement by .18 of a standard deviation (Table 1) and that a log unit increase in annual income increases child achievement by about half a standard deviation.

Figure 5: Experimental Impacts on Income (X) and Achievement (Y), Age 2-5



9. Some Policy Implications

The range of estimated impacts from our three reviewed studies, all of which are statistically significant, suggest that a $3,000 annual income increment for several years boosts children's pre-school income from .05 to .18 standard deviations, with an average of .11 standard deviations. Effects of an income boost in middle childhood are statistically significant in some studies but not others.[5]

Translated into an IQ-type scale, 11 per cent of a standard deviation amounts to about 1.5 points. Translated into one of the achievement tests we use – the Bracken Test of School Readiness – these effect sizes translate into two additional correct answers to a 61-question test regarding colours, letters, numbers/counting, comparisons and shapes.

How to put our effect sizes into a policy perspective? Experimental studies of early pre-school intervention programs offering very high levels of quality provide one point of reference. Treatment effect sizes on IQ were 1.0 standard deviations at 3 years and .75 at age 5 years for the Abecedarian Project, and .60 for the Perry Pre-school Project (Karoly *et al.*, 1998). But at $40,000 and $15,000, respectively, these large effect sizes came at great cost.

For $7,500, the Tennessee class size experiment showed that smaller K-3 class sizes increased achievement by about .2 of a standard deviation (Krueger and Whitmore, 2001). The one-fifth standard deviation increase in test scores could increase future earnings by between $5,000 and $50,000, depending on assumed discount and future earnings growth rates. The .11 effect size, if permanent, would increase earnings by one-half of these amounts.

By comparing income supplementation and early-education policy effect sizes, we do not mean to imply that the two kinds of programs serve the same purpose. Child development is the explicit target of educational interventions, but only one of many possible goals for income redistribution policies. Ensuring school readiness for all children probably requires that some receive pre-school education intervention programs, independent of whatever income redistribution program might be present.

References

BECKER, G.S., 1981. *A treatise on the family,* Cambridge MA: Harvard University Press.

BARKER, D., 1998. *Mothers, babies, and health in later life*, Edinburgh: Churchill Livingstone.

BLAU, D. M., 1999. "The effect of income on child development", *The Review of Economics and Statistics,* Vol. 81, No. 2, pp. 261-276.

BRONFENBRENNER, U. and P. MORRIS, 1998. The ecology of developmental processes in R.M. Lerner (ed.), *Theoretical Models of Human Development* (Vol. 1 of the *Handbook of Child Psychology, 5th ed.*) pp. 993-1028, New York: Wiley.

BROOKS-GUNN, J. and G. DUNCAN, 1997. "The effects of poverty on children", *Future of Children*, Vol. 7, pp. 55-71.

CASE, A., D. LUBOTSKY and C. PAXON, 2002. "Economic status and health in childhood: The origins of the gradient", *American Economic Review*, Vol. 92, pp. 1308-1334.

CHASE-LANSDALE, L. and L. PITTMAN, 2002. "Welfare reform and parenting: Reasonable expectations", *Future of Children,* Vol. 12, pp. 167-186.

CUNHA, F., J.J. HECKMAN, L. LOCHNER and D. MASTEROV (forthcoming). "Interpreting the evidence on life cycle skill formation" in E. Hanushek and F. Welch (eds.), *Handbook of the Economics of Education,* North Holland.

CURRIE, J. and M. SABILE, 2003. "Socioeconomic status and health: Why is the relationship stronger for older children?" *American Economic Review*, Vol. 93, No. 5, pp. 1813-1823.

DAHL, G. and L. LOCHNER, 2005. The impact of family income on child achievement. Cambridge, MA, NBER working paper number 11279.

DUNCAN, G., 1988. "The volatility of family income over the life course" in P. B. Baltes, D. L. Featherman, R. M. Lerner (eds.), *Life-span Development and Behavior*, Vol. 8, pp. 317-358, Hillsdale, NJ: Lawrence Erlbaum.

DUNCAN, G. and J. BROOKS-GUNN (eds.), 1997. *Consequences of growing up poor*. New York: Russell Sage Foundation.

DUNCAN, G., B. GUSTAFSSON, R. HAUSER, G. SCHMAUSS, H. MESSINGER, R. MUFFELS, B. NOLAN and J. RAY, 1993. "Poverty dynamics in eight countries", *Journal of Population Economics*, Vol. 6, No. 3, pp. 215-234.

DUNCAN, G. and K. MAGNUSON, 2002. "Low income (poverty) during prenatal and early postnatal periods and its impact on psychosocial child development" in R.E. Tremblay, R. G. Barr, R. Peters (eds.), *Encyclopaedia on Early Childhood Development* [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development; 2002:1-6. Available at: http://www.excellence-earlychildhood.ca/documents/Duncan-MagnusonANGxp.pdf. Accessed [December, 2005].

DUNCAN, G., W. YEUNG, J. BROOKS-GUNN and J. SMITH, 1998. "How much does childhood poverty affect the life chances of children?" *American Sociological Review*, Vol. 63, pp. 406-423.

GENNETIAN, L. A., G. DUNCAN, V. KNOX, W. VARGAS, E. CLARK-KAUFFMAN and A. LONDON, 2002. *How welfare and work policies for parents affect adolescents: A synthesis of research.* New York, NY: Manpower Demonstration Research Corporation.

HAVEMAN, R. and B. WOLFE, 1995. "The determinants of children's attainments: A review of methods and findings", *Journal of Economic Literature,* Vol. 23, pp. 1829-1878.

INSTITUTE FOR RESEARCH ON POVERTY, 1976. *The rural income maintenance experiment,* Madison WI: University of Wisconsin.

KAROLY, L. A., P.W. GREENWOOD, S.S. EVERINGHAM, J. HOUBÉ, M.R. KILBURN, C.P. RYDELL, M. SANDERS and J. CHIESA, 1998. *Investing in our children: What we know and don't know about the costs and benefits of early childhood interventions.* Santa Monica, CA: RAND.

KERSHAW, D. and J. FAIR, 1976. *The New Jersey Income Maintenance Experiment*, New York: Academic Press.

KREUGER, A. B. and D. WHITMORE, 2001. "The effect of attending a small class in the early grades on college-test taking and middle school test results: Evidence from Project STAR", *Economic Journal*, Vol. 11, pp. 1-28.

MAYER, S. E., 1997. *What money can't buy: Family income and children's life chances.* Cambridge, MA: Harvard University Press.

MCLOYD, V. C., 1990. "The impact of economic hardship on black families and children: Psychological distress, parenting and socioemotional development", *Child Development,* Vol. 61, pp. 311-346.

MCLOYD, V. C., T.E. JAYARTNE, R. CEBALLO and J. BORQUEZ, 1994. "Unemployment and work interruption among African-American single mothers, effects on parenting and adolescent socioemotional functioning", *Child Development,* Vol. 65, pp. 562-589.

MICHAEL, R. T., 1972. *The effect of education on efficiency in consumption,* New York, NY: Columbia University Press.

MORRIS, P., A. HUSTON, G. DUNCAN, D. CROSBY and J. BOS, 2001. *How welfare and work policies affect children: A synthesis of research*, New York, NY: Manpower Research Demonstration Corporation.

MORRIS, P., G. DUNCAN and C. RODRIGUES, 2005. "Does money really matter? Estimating impacts of family income on young children's achievement with data from random-assignment experiments", Working paper, Northwestern University, Institute for Policy Research.

ROWE D. and J. RODGERS, 1997. "Poverty and Behavior: Are environmental measures nature and nurture?", *Developmental Review,* Vol. 17, pp. 358-375.

SALKIND, N. J., and R. HASKINS, 1982. "Negative income tax: The impact on children from low-income families", *Journal of Family Issues*, Vol. 3, pp. 165-180.

SHADISH, W., T. COOK and D.T. CAMPBELL, 2002. *Quasi-experimentation: Design and analysis issues for field settings,* Boston: Houghton Mifflin.

SHONKOFF, J. and D. PHILLIPS (eds.), 2000. *From neurons to neighborhoods: The science of early childhood development,* Washington, DC: National Academy Press.

ZAHN-WAXLER, C., S. DUGGAL and R. GRUBER, 2002. Parental psychopathology in M.H. Bornstein (ed.), *Handbook of parenting,* 2nd ed., Vol. 4, pp. 95-328, Mahwah, NJ: Lawrence Erlbaum Associates, Inc.