From Child Development to Human Development

Jacques van der Gaag
Dean
Faculty of Economics and Econometrics
University of Amsterdam
Roetersstraat 11
1018 WB Amsterdam
The Netherlands
Tel: 31-20525-4128
E-mail: vdgaag@fee.uva.nl

From Child Development to Human Development

Jacques van der Gaag

Early child development (ECD) and human development (HD) are closely linked. Early child development refers to the combination of physical, mental, and social development in the early years of life—those dimensions that are commonly addressed by integrated programs of ECD. These programs include interventions to improve the nutrition, health, cognitive development, and social interaction of children in the early years (Myers 1992; Young 1997).

Human development refers to similar dimensions—education, health (including nutrition), social development, and growth—but at the scale of a nation. The multidimensional framework for HD used in this chapter is a variant of one first proposed by the United Nations Development Programme in 1990. (In)equality is included in the discussion, but an even broader concept of HD would include additional dimensions such as human rights (Sen 1999).

Human development, broadly defined, is the overarching objective of most international and multinational development programs. Because HD is so closely linked to ECD, investing in ECD is the natural starting point for these programs and for the public policy that frames these programs.

Four critical "pathways" link ECD to HD. The first pathway runs through *education*. Interventions during the early years of a child have multiple benefits for subsequent investments in the child's education, ranging from on-time enrollment in elementary school to an increased probability of progressing to higher levels of education. The second pathway is through *health*. Like education, investments in health are an investment in human capital and have long-term benefits. The third pathway links the notion of improved social behavior (as a result of being enrolled in an ECD program) with the formation of *social capital*. This linkage is more speculative, but is suggested by some interesting research results. In the fourth pathway, ECD is linked to HD by the potential of ECD programs to address *inequality* in society. And, ultimately, education, health, social capital, and equality are linked to economic growth and, hence, to HD.

All these linkages are discussed in this chapter, which concludes with suggestions for further research to close some of the gaps in knowledge identified. To provide context, the chapter opens with a brief history of development economics.

Development Economics: A Brief History

The history of development economics is well described in the *Handbook of Development Economics*, volume 1 (Chenery and Srinivasan 1989), which is recommended for serious readers. A key point to note in this chapter is that early approaches to development, which were characterized by mathematical planning models, have been replaced gradually by development models which recognize that people are both the means and the ultimate cause of development.

These more recent models underscore the importance of investing in (young) people as a central means to foster development.

The shift from planning models to people is illustrated by the salient contributions of four Nobel laureates in economics, all of whom were rewarded for their work on development. The first Nobel laureate in economics was Jan Tinbergen, who shared the prize in 1969 with Ragna Frisch. Tingergen's influence on the field can still be felt around the world.

Tinbergen initially studied physics and, later, applied mathematical planning models to the economies of developing countries, mainly to determine optimal levels of investments. The planning, at least in concept, comprised three stages. First, at the macro level, a desired level of economic growth was chosen. Since labor was thought to be abundantly available, this desired growth rate determined the optimal level of overall investment. At the middle stage, the optimal distribution of this investment by region and by industry was determined, and, at the third stage, individual investments for projects were evaluated and allocated. Apart from the abundance of labor (to be recruited from rural areas), no people were included in these planning models.

It would be unfair to Tinbergen (who entered or, rather, invented the field of development economics because of concern for the living conditions of the world's poor) to suggest that people were forgotten in the development process. On the contrary, people were seen as an important production factor. Consequently, education was an important element in these models. Investments in education needed to be planned, as were investments in roads or in machines. Indeed, skilled labor (the result of such investments) could also be allocated by region or industry and, if needed, even imported.

Omitted from these early models, however, was the (economic) *behavior* of people. In 1979, the Nobel prize for economics was awarded to T.W. Schultz (and W.A. Lewis). Schultz's major contribution to the field was in showing that the behavior of people in developing countries is, like the people in developed countries, that of a rational *homo economicus*, reacting to incentives and opportunities. He stressed the importance of investing in human capital (skills and knowledge) to increase productivity (especially in agriculture) and entrepreneurship.

A third Nobel laureate (in 1993), R.W. Fogel, emphasized the importance of "people development" in yet another way. Taking a historical view, Fogel underscores the importance of the contribution of technological change to physiological improvements. He concludes that the "technophysio" evolution (as termed by him) accounts for about half of British economic growth over the past two centuries. He states: "Much of this gain was due to the improvement in human thermodynamic efficiency. The rate of converting human energy input into work output appears to have increased by about 50 percent since 1790" (Fogel 2000, pp.78-79). Fogel is also one of the few economists who have recognized the importance of long-term health effects from deprivation during early childhood.

A. Sen, who received the Nobel prize in 1998, also recognized the central role of investing in people. The resulting higher income, from higher productivity, reduces poverty and increases economic well-being. However, Sen also underscores better health, higher education levels, and improved nutrition as separate goals which, in addition to higher income, represent nonmonetary aspects of the quality of life (i.e., of "human development") that are valuable in and of themselves. In his latest book (Sen 1999), he extends this concept, to emphasize that individual freedom is the ultimate goal of economic life. In this treatise, Sen uses a very broad definition of freedom, which includes freedom from hunger, disease, ignorance, all forms of deprivation, poverty, as well as political and economic freedom and civil rights.

Linking ECD to HD: Four Pathways

Education

The first pathway, from ECD to HD, is through education. The importance of ECD for subsequent educational performance, and the role of education in economic and human development are well-known and supported by extensive scientific evidence accumulated from neurophysics, pediatrics, the medical sciences, child development, education, sociology, and economics. Ample evidence documents the importance of the early months and years in life for a child's physical, mental, and social development (Cynader and Frost 1999; McCain and Mustard 1999; Young 1997). The rapid development of the brain during the early months and years is crucial, and newborns who receive proper care and stimulation will be readier to enter school on time and to learn.

Children participating in ECD programs receive psychosocial stimulation, nutritional supplementation, and health care, and their parents receive training in effective childcare. Children who have participated in these programs show higher intelligence quotients and improvements in practical reasoning, eye and hand coordination, hearing and speech, and reading readiness. Grade repetition and dropout rates are lower, performance at school is higher, and the probability that a child will progress to higher levels of education increases (Barnett 1995; Barnett 1998; Grantham-McGregor and others 1997; Karoly and others 1998; Schweinhart and others 1993).

Over the long term, these children benefit from earlier schooling, better schooling, and more schooling, making them more productive and more "successful"as adults. Being well educated is the best predictor of "success" as an adult, regardless of how success is defined. The definition of success, as a better job and higher income in the marketplace or increased and improved production at home (e.g., childcare, nutritional practices, family health), can differ from case to case, but higher education is always associated with greater well-being, broadly defined (Haveman and Wolfe 1984; Psacharopoulos 1994).

The public benefits of education are also well known. For society, they include greater ability to adopt new technologies, better functioning of democratic processes, lower fertility rates, and lower crime rates (Carnoy 1992; Rutter, Giller, and Hagell 1998). As firmly established in the economic literature on development, education is also important for economic growth (Barro 1997).

The education pathway clearly demonstrates that the link between ECD and HD is straightforward, as abundantly documented by scientific evidence. Increased investments in ECD programs can be fully justified, and usually are, based on this evidence alone (van der Gaag and Tan 1997). Good education is a goal in itself and fosters economic prosperity. Yet, three additional pathways deserve at least the same attention as education.

Health

For many decades, the leading development agencies, including the World Health Organization, the United Nations Children's Fund (UNICEF), and the World Bank, have emphasized the importance of providing good nutrition, immunization, and other basic health care services for young children. The health benefits of these services are immediately evident (Bundy 1997; PAHO 1998; Stephenson and others 1993), and the cost-effectiveness of interventions to improve these services is well established (Horton 1999). Despite this knowledge, and

shamefully, millions of children in developing countries still die before they have lived 1 year, and those who survive suffer from a myriad of easily preventable diseases.

ECD programs can make a dramatic difference. They are associated with decreased morbidity and mortality among children, fewer cases of malnutrition and stunting, improved personal hygiene and health care, and fewer instances of child abuse.

Less well known are the strong links between trauma in the early years of life (e.g., from malnutrition, even in utero and infectious diseases) and an individual's health as an adult. Recent studies show that the links between health and nutrition in the early years of life and one's health status as an adult are much more numerous and stronger than previously known. The range of adult health outcomes now known to be associated with growth in utero and early life development, or lack of, include blood pressure, respiratory function, and schizophrenia. Childhood social and educational factors also are strongly associated with physical and mental health outcomes in adult life (Wadsworth and Kuh 1997).

Scientific evidence of these links is also available in relation to the crucial period of brain development in utero and shortly after birth (Barker 1998; Ravelli 1999). Infant malnutrition has been associated with diabetes and reduced stature as an adult. Infection early in life has been related to the development of chronic bronchitis, acute appendicitis, asthma, Parkinson's disease, and multiple sclerosis in adulthood. And, low birthweight has been correlated with subsequent increased blood pressure, chronic pulmonary disease, cardiovascular disease, coronary heart disease, and stroke. Thus, although an investment in basic health and nutritional services for young children can be justified by immediate health and anthropometric outcomes for children, the linkage to their health status as adults heightens the importance of the interventions, which are standard components of integrated ECD programs.

The linkage to adults' health status is also significant for HD efforts. Evidence indicates that the association between adults' health status and economic well-being is at least as strong as the association between education and economic well-being (Hertzman 1999; Smith 1999). Adults with better health, higher life expectancy, and better weight and height measures tend to have higher productivity, less absenteeism from work, and higher incomes than their less fortunate counterparts.

However, the causality in the relationship between health status and economic well-being remains in question. Does good health lead to higher productivity (income) or does a higher income enable one to buy better health? Both relationships—health as cause and as effect—have been proven true. When possible to establish that good or poor health came first, a subsequent economic effect could be determined (e.g., the reduced earning power of adults stunted by malnutrition as a child) (Bundy 1997; Thomas and Strauss 1997). The converse, higher income leading to better health, also is well documented (Acheson 1998). Clearly, better health results in higher income in many instances, but additional research is needed to further unravel the dual relationship.

To establish a definitive link between health and the HD of a nation, the health-and-income nexus must be aggregated across individuals, for populations. Recent studies demonstrate this link. Like education, the health status of a population is related to the economic growth of that population (Barro 1997; Pritchett and Summers 1996; WHO 1998). Key examples in Africa are the economic (growth-reducing) effects of malaria and the epidemic of Acquired Immunodeficiency Syndrome (AIDS) (Bloom and Sachs 1998).

Surprisingly, most of the studies of health and economic growth are recent, and additional research is needed to understand more fully the many ways in which the health of a population, which is a good in itself, can influence the wealth of a nation. But, the fact that the link is very

important is no longer debatable. Like education, the health pathway from ECD to HD is clear. If increasing the wealth of a nation is an overall objective, beginning with the health of a newborn is a logical first step.

Social Capital

The "social" benefits of ECD programs are less well defined than the health and education benefits. Still, they do exist. Many studies of the effects of ECD programs note the change in children's behavior (Kagitçibasi 1996; Karoly and others 1998). They are less aggressive and more cooperative, they behave better in groups, and they accept instructions (e.g., from parents) well. Overall the children have higher self-concepts and are more socially adjusted.

A few long-term (tracer) studies point to similar outcomes for the children's adult life: improved self-esteem, social competence, motivation, and acceptance of the culture's norms and values. In particular, evidence suggests that participation in ECD programs leads to reduced criminal behavior and less delinquency as an adult (Schweinhart and others 1993; Yoshikawa 1995; Zigler, Taussig, and Black 1992).

The link between improved social behavior and the formation and maintenance of "social capital" has yet to be established. Social capital includes many distinct social phenomena. At the macro level, it refers to informal institutional arrangements, trust, ethnic social networks, nonlegal market arrangements and other related phenomena (Coleman 1990; Putnam 1993). At the individual level, the term refers to a person's ability to draw upon social networks to better pursue his or her own interests, a phenomena that usually involves reciprocal arrangements similar to the exchange of "IOU" slips when obtaining financial credit (Coleman 1988, 1990; Flap 1999; Lin 1999).

Studies of the social benefits of ECD programs suggest that the benefits will continue later in life. As the brain needs to be wired properly for academic learning, so it needs to be prepared suitably for social learning. If studies can truly establish the link between the social benefits of ECD programs and improved skills of adults in creating and utilizing social capital, the link to HD can easily be made.

To do so only requires that the benefits to social capital at the individual level be aggregated to society as a whole. Although social capital is an ill-defined concept that refers to many different social phenomena, this linkage has already been established firmly in the sociology and economic literature (Narayan 1997; Woolcock 1999). Much empirical evidence has been acquired recently, and although it does not directly make the link between children and adults as suggested above, it is convincing and growing.

Interest in the link between culture, or values, and economic performance also is increasing. Recent studies suggest that "values" is an important concept for explaining differences in the growth of nations (Fukuyama 1995). If researchers determine that ECD programs can instill values that are reflected subsequently in adults' behavior, the link between ECD and HD through the pathway of social capital may be even greater than suggested here.

Equality

The fourth pathway, "equality," refers to a "level playing field." It is inextricably linked to the previous three pathways. Equality may refer to a level playing field in education, health, or social capital. And, like education, health, and social capital, equality is a good in itself and contributes to the economic performance of a nation. If ECD programs can be shown to

contribute to achieving a more equal society, the link between ECD and HD, through the pathway of equality, can be easily established. In fact, ECD programs can contribute greatly to a leveling of the playing field if they are well targeted (Barros and Mendonça 1999). With a relatively small investment, ECD programs can decrease the disadvantage of poor children, compared to their more fortunate counterparts, in nutritional status, cognitive and social development, and health. The benefits of greater equality begin right after birth.

For adults, equality in education and health leads to equality of opportunity; better education and health lead to higher income. Significantly, data show that countries with a more equitable distribution of income are also more healthy (Deaton 1999; Hertzman 1999; Wilkenson 1996). The evidence is undeniable, yet the reasons for the relationship are being debated. Nevertheless, the link between more equality of opportunity early in life and more equality in education, income, and health later in life appears to be strong, as does the aggregate link between greater equality in income and the health of society. And, again, the benefits begin with ECD.

Finally, numerous studies show that greater equality leads to higher sustainable growth (Aghion, Caroli, and García-Peñalosa 1999; Barro 1997). The link between ECD and HD, through the pathway of equality, is complex, but strong.

ECD: Benefits and Research Needs

Table 1 summarizes the benefits of ECD—better education, improved health, increased social capital, and greater equality. All of these outcomes are of value themselves, and the benefits are immediately tangible at the time of intervention (i.e., in a child's early years). ECD programs are most often justified by the immediate benefits to a child's social and cognitive development and health and nutritional status. Yet, as discussed above, these outcomes have positive, long-term consequences for the children as they mature into adults and for their nations as a whole. Except for the pathway of education, these long-term benefits are usually ignored by government officials and policymakers.

Table 1. ECD Benefits for Children, Adults, and Society: Summary

Benefits of ECD	Pathways linking ECD to HD			
	Education	Health	Social capital	Equality
For children (immediate)	Higher intelligence, improved practical reasoning, eye and hand coordination, hearing and speech; reading readiness; improved school performance; less grade repetition and dropout; increased schooling	Less morbidity, mortality, malnutrition, stunting, child abuse; better hygiene and health care	Higher self-concept; more socially adjusted; less aggressive; more cooperative; better behavior in groups; increased acceptance of instructions	Reduced disadvantages of poverty; improved nutritional status, cognitive and social development, and health
For adults (long-term)	Higher productivity; increased success (better jobs, higher incomes); improved childcare and family health; greater economic well-being	Improved height and weight; enhanced cognitive development; less infections and chronic diseases	Higher self-esteem; improved social competence, motivation, acceptance of norms and values; less delinquency and criminal behavior	Equality of opportunity, education, health, and income
For society	Greater social cohesion; less poverty and crime; lower fertility rates; increased adoption of new technologies; improved democratic processes; higher economic growth	Higher productivity; less absenteeism; higher incomes	Improved utilization of social capital; enhanced social values	Reduced poverty and crime; better societal health; increased social justice; higher sustainable economic growth

ECD, Early child development; HD, human development.

The link between ECD and HD through the pathway of education is clearly established and abundantly documented. New developments in health research, particularly those addressing the relationship between child health and adult health, also provide ample evidence of a link between ECD and HD. As additional research findings become available, the pathway of health is likely to become as significant to HD as is education. International organizations and governments may need to fundamentally rethink health care efforts worldwide and to direct a much larger share of health care budgets to the health care of children, especially in their early years. The aim will be

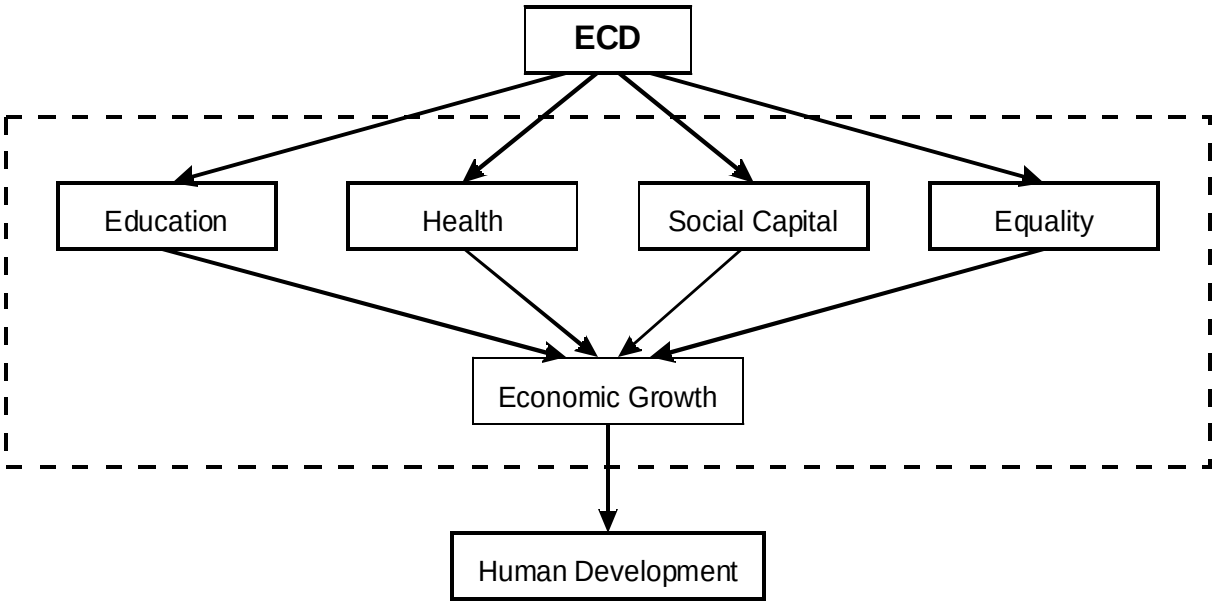
not only to address children's immediate health problems, but also to reduce their future health risks as adults.

The pathway of social capital is currently less clear, but suggestive. The link between social behavior as a child and as an adult needs to be confirmed, and the link between social behavior and social capital is still weak. The literature on social capital is relatively young, but current evidence indicates that this pathway for ECD to HD will become as firmly established as the pathways of education and health.

The pathway of equality from ECD to HD is undeniable and, as noted, is linked to the other three pathways. The finding that income equality is related to the health of society is a recent and surprising one, which reinforces the importance of ECD and suggests far-reaching policy implications.

Education, health, social capital, and equality are all important contributors to economic growth. Together with economic growth, they constitute the mutually reinforcing elements of a comprehensive framework for HD, as depicted in figure 1. This framework could be expanded easily, for example, to include gender issues or poverty (as it relates to equality).

Figure 1. From Child Development to Human Development: A Comprehensive Framework



Well-executed and well-targeted ECD programs are initiators of HD. They stimulate improvements in education, health, social capital, and equality that have both immediate and long-term benefits for the children participating in the programs. Investments in ECD programs are in many ways investments in the future of a nation.

Acknowledgment

The author thanks Wendy Janssens for excellent research assistance during the preparation of this chapter.

References

Acheson, D. 1998. *Independent Inquiry into Inequalities in Health: Report*. London: The Stationery Office.

Aghion, P., E. Caroli, and C. García-Peñalosa. 1999. "Inequality and Economic Growth: The Perspective of the New Growth Theories." *Journal of Economic Literature* 37 (December):1615-60.

Barker, D.J.P. 1998. *Mothers, Babies and Health in Later Life.* Edinburgh: Churchill Livingstone.

Barnett, W.S. 1995. Long-Term Effects of Early Childhood Programs on Cognitive and School Outcomes. *The Future of Children* 5(3):25-50.

_____. 1998. Long-Term Cognitive and Academic Effects of Early Childhood Education on Children in Poverty. *Preventive Medicine* 27:204-07.

Barro, R.J. 1997. *Determinants of Economic Growth: A Cross-Country Empirical Study*. Cambridge, Mass.: MIT Press.

Barros, R.P. de, and R. Mendonça. 1999. *Costs and Benefits of Pre-School Education in Brazil*. Rio de Janeiro: Institute of Applied Economic Research.

Bloom, D.E., and J.D. Sachs. 1998. Geography, Demography, and Economic Growth in Africa, Harvard Institute for International Development. Brookings Papers on Economic Activity. Washington, D.C.: Brookings Institution.

Bundy, D.A.P. 1997. Health and Early Child Development. In M.E. Young, ed., *Early Child Development: Investing in our Children's Future*. Amsterdam: Elsevier Science B.V.

Carnoy, M. 1992. *The Case for Investing in Basic Education.* New York: United Nations Children's Fund.

Chenery, H., and T.N. Srinivasan. 1989. *Handbook of Development Economics, volume 1.* New York: North Holland.

Coleman, J. 1988. Social Capital in the Creation of Human Capital. *American Journal of Sociology* 94:S95-S120.

_____. 1990. *Foundations of Social Theory*. Cambridge, Mass.: Harvard University Press.

Cynader, M.S., and B.J. Frost. 1999. Mechanisms of Brain Development: Neuronal Sculpting by the Physical and Social Environment. In D.P. Keating and C. Hertzman, eds., *Developmental Health and the Wealth of Nations: Social, Biological, and Educational Dynamics*. New York: The Guilford Press.

Deaton, A. 1999. Inequalities in Income and Inequalities in Health. National Bureau of Economic Research Working Paper No. W7141. New York.

Flap, H. 1999. Creation and Returns of Social Capital: A New Research Program. *The Tocqueville Review* XX(1).

Fogel, R.W. 2000. *The Fourth Great Awakening*. Chicago: University of Chicago Press.

Fukuyama, F. 1995. *Trust: The Social Virtues and the Creation of Prosperity.* New York: Free Press.

Grantham-McGregor, S.M., S.P. Walker, S.M. Chang, and C.A. Powell. 1997. Effects of Early Childhood Supplementation With and Without Stimulation on Later Development in Stunted Jamaican Children. *American Journal of Clinical Nutrition* 66:247-53.

Haveman, R.H., and B.L. Wolfe. 1984. Schooling and Economic Well-being: The Role of Nonmarket Effects. *Journal of Human Resources* 19(3):377-407.

Hertzman, C. 1999. Population Health and Human Development. In D.P. Keating and C. Hertzman, eds., *Developmental Health and the Wealth of Nations: Social, Biological, and Educational Dynamics*. New York: The Guilford Press.

Horton, S. 1999. Economics of Nutritional Investments (draft). In R.D. Semba and M.W. Bloem, eds., *Nutrition and Health in Developing Countries*. Totowa, N.J.: Humana Press.

Kagitçibasi, Ç. 1996. *Family and Human Development Across Cultures: A View from the Other Side*. Mahwah, N.J.: Lawrence Erlbaum Associates.

Karoly, L.A., P.W. Greenwood, S.S. Everingham, J. Hoube, M.R. Kilburu, 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*. Washington, D.C.:RAND.

Lin, N. 1999. *Inequality in Social Capital: Evidence from Urban China. Creation and Returns of Social Capital in Education and Labor Markets.* Center for Research in Experimental Economics and Political Decision Making/University of Amsterdam, Institute of Information and Computing Sciences (ICS)/University of Groningen and ICS/Utrecht University.

McCain, M.N., and J.F. Mustard. 1999. *Reversing the Real Brain Drain: Early Years Study, Final Report.* Toronto: Publications Ontario.

Myers, R.G. 1992. *The Twelve Who Survive.* London: Routledge.

Narayan, D. 1997. *Voices of the Poor: Poverty and Social Capital in Tanzania*. Washington, D.C.: World Bank.

PAHO (Pan American Health Organization), ed. 1998. *Nutrition, Health and Child Development: Research Advances and Policy Recommendations*. Scientific Publication No. 566. Washington, D.C.

Pritchett, L., and L.H. Summers. 1996. Wealthier Is Healthier. *Journal of Human Resources* 31(4):841-68.

Psacharopoulos, G. 1994. Returns to Investment in Education: A Global Update. *World Development* 22(9):1325-43.

Putnam, R. 1993. The Prosperous Community – Social Capital and Economic Growth. *The American Prospect* 356(spring):4-9.

Ravelli, A.C.J. 1999. Prenatal Exposure to the Dutch Famine and Glucose Tolerance and Obesity at Age 50. Thela Thesis. Amsterdam: University of Amsterdam.

Rutter, M., H. Giller, and A. Hagell. 1998. *Antisocial Behavior by Young People*. Cambridge: Cambridge University Press.

Schweinhart, L.J., H.V. Barnes, and D.P. Weikart (with W.S. Barnett and A.S. Epstein). 1993. *Significant Benefits: The High/Scope Perry Preschool Study Through Age 27*. Ypsilanti, Mich.: High/Scope Press.

Sen, A. 1999. *Development as Freedom*. New York: Alfred A. Knopf.

Smith, J.P. 1999. Healthy Bodies and Thick Wallets: The Dual Relation Between Health and Economic Status. *Journal of Economic Perspectives* 13(2):145-66.

Stephenson, L.S., M.C. Latham, E.J. Adams, S.N. Kinoti, and A. Pertet. 1993. Physical Fitness, Growth and Appetite of Kenyan Schoolboys With Hookworm, *Trichuris trichiura* and *Ascaris lumbricoides*. Infections Are Improved Four Months After a Single Dose of Albendazole. *Journal of Nutrition* 123:1036-46.

Thomas, D., and J. Strauss. 1997. Health and Wages: Evidence on Men and Women in Urban Brazil. *Journal of Econometrics* 77:159-85.

Van der Gaag, J., and J.-P. Tan. 1997. *The Benefits of Early Child Development Programs: An Economic Analysis*. Washington, D.C: World Bank, Human Development Network.

Wadsworth, M.E., and Kuh, D. 1997. Childhood Influences on Adult Health. *Paediatric and Perinatal Epidemiology* 11:2-20.

WHO (World Health Organization). 1998. Health, Health Policy, and Economic Outcomes. Health and Development Satellite, WHO Director-General, Transition Team. Geneva.

Wilkenson, R.G. 1996. *Unhealthy Societies: The Afflictions of Inequality*. London: Routledge.

Woolcock, M. 1999. Managing Risk, Shocks, and Opportunity in Developing Economies: The Role of Social Capital. Washington, D.C.: World Bank, Development Research Group.

Yoshikawa, H. 1995. Long-Term Effects of Early Childhood Programs on Social Outcomes and Delinquency. *The Future of Children* 5(3):51-75.

Young, M.E., ed. 1997. *Early Child Development: Investing in our Children's Future*. International Congress Series No. 1137. Amsterdam: Elsevier Science B.V.

Zigler, E., C. Taussig, and K. Black. 1992. Early Childhood Intervention: A Promising Preventative for Juvenile Delinquency. *American Psychologist* 47(8):997-1006.