
**The Social Ecology of Child Health and Well-being**

**ABSTRACT:**
Use of the term, social ecology, refers to the nested arrangement of family, school, neighborhood, and community contexts in which children grow up. Theoretical and methodological implications of the concept are explored in this chapter as they reflect new directions in public health science. The contributions of this ecologically oriented approach to child health practice, especially as it is designed from a health promotions perspective, are considered. A critique of the term, social capital, is also presented because of its growing popularity in matters of child health. The point is made that application of this term carries the serious risk of misspecifying social phenomena. Future trends in the promotion of child health and well-being are in a position to flourish given the confluence of advances in theory, methods and analytical capacity. The capacity to benefit children will be enhanced as public health aims to translate the principles of child rights into health practices and policies.

**The Social Ecology of Child Health and Well-Being**

The health and well-being of children are influenced in particular ways by historical, social and economic circumstances. Child development research has concentrated heavily on studying the family environment as the primary means of capturing such influences, although peer influences and school contexts have also been examined. To justify use of the term, ecology, research must extend beyond these sets of relatively proximal relationships to encompass the more distal contexts and relationships that are found in neighborhoods, religious groups and nationalities. It is in the recognition that individuals are at once members of several social groups that the concept of social ecology gains prominence. These contexts range from the intimate relationships found in a family environment to ones that can be truly anonymous as in many urban neighborhoods. This constellation of environments and relationships represent the social ecology referred to in the title of this paper.

It is also important to note that we do not use the concepts of health and well-being interchangeably. Health status is relevant to physical and mental states of disordered functioning and impairment. Well-being, on the other hand, occupies a broader set of conditions related to one’s sense of dignity, security, and mastery in particular settings. This conceptualization of well-being builds on the capability approach of Sen from the perspective of the child (51,9,16,17). It is an approach that incorporates the elements of valued functionings, required resources and opportunities in the exercise of agency. Just as children with physical handicaps may achieve high levels of wellbeing, good health is no guarantee for the achievement of well-being. Both concepts are important and guide the presentation of material and arguments advanced in this review. The distinction is subtle because there is an interdependency between these concepts that guards against separating them into mutually exclusive categories. We combine the two notions in the title because the community influences we discuss throughout this paper are important in generating both states of being.

This chapter is organized in six sections. The first section provides an orientation to basic assumptions about community life and child development. The primary concern is to understand the residential composition of communities as reflecting larger societal forces that act to stratify groups by race, ethnicity, and social class. The second section presents the conceptual and theoretical challenges confronted in public health science to adapt to the changing world of families and children. Close attention is given in this section to the notion of social capital, since use of this term has generated
considerable conceptual confusion. In the third section, concepts and strategies related to the definitions, measurement and analytical challenges of community characteristics and community effects are introduced. Repeated reference to the Project on Human Development in Chicago Neighborhoods (PHDCN) (18) is made given the painstaking effort to carefully integrate these aspects of social science into the design and execution of this long term enterprise. The fourth section provides a selective review of the literature showing patterns of association between community characteristics and health status. Given the state of the science, the concern is less with specific outcomes and more with the demands of research that can uncover the mechanisms that produce particular outcomes. Some selected examples of concerted efforts to improve the health and well-being children are given in the fifth section. These range from the work of a small group of African-American ministers to identify the highest risk youths in their neighborhoods, to the efforts of local pediatricians to collaborate with community organizations in the neighborhoods in which they practice, to a statewide program to increase school readiness in preschoolers. The final section considers future challenges in research and practice that relate to advancing knowledge and expanding ethical standards in this important area of public health. Emphasis is placed on the changing nature of childhood as reflected by the international child rights movement and its relevance to social ecology, health promotion and to the participation of children in activities that directly bear on their well-being.

I. Orientation

By community, we mean a historically bounded set of social relationships. These associations may be established by commonalities of geographic/residential space, faith, recreation, or other types of social or political interests that reflect a sense of shared values, expectations and actions. Communities vary in the extent to which they function cohesively and their capacity to change over time should also be appreciated. Just as families vary in composition and integrity, these larger social configurations can be defined and measured in terms of their composition, structure and function. Racial, ethnic background and social class are the typical demographic characteristics used to define composition of organizations, whether they are neighborhoods, schools or political groups. The structural aspects of such organizations refer to the types of arrangements that are beyond the level of individual control, reflecting the economic and political aspects in which patterns of housing, transportation, work, school, commerce and recreational facilities. These structural conditions can either facilitate or constrain the daily activities of adults and children. The functional aspects of communities are represented in the quality of interactions and the degree to which values and expectations are articulated and acted upon.

Since we are concerned about the rearing of children, the structures and functions of communities that drawn attention relate to the extent and nature of adult-child relationships. It might be claimed that a fundamental human value is reflected in a general obligation that all adults have to protect and care for children, not only those that are their biological progeny but towards children who are not biologically related to them. Further, this claim can be extended to governments such that a legitimate use of public funds is to exercise civic responsibility towards the socialization and education of children. Within the spectrum of social, legal and ethical responsibilities, it is a matter of great importance that nearly all nations in the world have ratified the UN Convention on the Rights of the Child (CRC) (35). This document establishes a set of understandings and obligations that governments must agree to in the process of ratification. The unparalleled success of the CRC in becoming the most widely ratified human rights document in the history of the United Nations (which includes all members states with the exception of Somalia and the Untied States) stands as confirmation for this universal human value. Thus, in our approach to adult child relationships in all types of community configurations, we expect to see this sense of obligation expressed to varying degrees. From the child’s perspective, community may be best represented in terms of the quality of relationships
with teachers, police, neighbors, parents and peers. What expectations are generated, what values taught, what levels of support and encouragement are experienced, which activities are deemed worthwhile and which worthless; these are the types of attributes that may be basic to all types of communities in which a child may be a member.

Social Structures and Child Deprivation

There is a long history of research documenting the negative effects of the economic and social deprivation. The findings are particularly robust in examining educational achievement and cognitive skills, but they extend to behavioral and social domains as well. Two thorough reviews by developmental psychologists provide authoritative accounts of this literature (10,32). Complementing this literature on educational achievements, is the recent discovery of an orderly relationship between social ranking and health1. It should not be surprising to find that many of these effects have developmental roots (25,26). An open question is the extent to which those child rearing attitudes and practices known to be associated with poor educational and behavioral outcomes also operate as determinants of health status. Educational researchers have examined the school as a context and community psychologists, among others, have been concerned with the impact of family and neighborhood environments on behavioral and social outcomes, but until recently, the community as a setting that determines health status has not been the topic of systematic, well-designed research. The expansion of health research in this direction is a welcomed sign. The requirements to advance the field are still developing. These requirements are in the areas of theory and conceptualization of the phenomenon under study; the capacity for accurate and reliable measurement, and analytic strategies that permit one to study two or more levels of causal influences simultaneously.

The stratification of societies into socioeconomic classes is typically confounded with other aspects of a person’s or family’s social address. In the United States, race and ethnic background are paired with lower social position in such a way that neighborhoods, schools, churches and many other social institutions are segregated. In urban areas this results in a political economy in which poor African-Americans and Latinos are more geographically segregated than are poor European-Americans. The consequence of this increased density of poor families is that all aspects of the human ecology suffer. The quality of housing, schools, parks and recreational areas, businesses, and transportation facilities all are diminished and the safety and security of such neighborhoods are systematically undermined. To grow up in a neighborhood in which a high proportion of families live in poverty is to experience a context in which demeaning and threatening encounters are qualitatively different from those experienced by a child raised in neighborhoods in which most the great majority of families are economically secure.

In recognizing the serious risks involved in using race/ethnicity and socioeconomic categories as explanatory variables, the American Academy of Pediatrics (2) produced an official statement recommending that “pediatric investigators, in collaboration with social scientists, should develop and apply research methodologies in pediatric research that will result in careful definitions of, analysis of interactions among, and ultimately, documentation of the effects of these variables on child health.”

Rather than treat them as explanatory in nature, the Academy correctly views these variables as reflecting variation in resources and opportunities for healthy development. Also acknowledged in this statement is the realization that new research is needed to better understanding the social mechanisms involved.
II. Public Health Concepts and the Changing Worlds of Children

In the modern era of large and impersonal cities, digital communication technologies and rapid and efficient modes of mass transportation, the traditional notion of village life has become increasingly the exception rather than the rule in children’s lives (15). Most children are simultaneously members of several different groups and organizations, the constellation of which constitute the child’s social ecology. Even at young ages a child may be influenced by relationships and resources beyond the family and household, including religious organizations, childcare arrangement, play facilities and expectations regarding neighborhood security. In this section we consider how public health science is challenged to keep pace with the changing world of families and children. In doing this, special attention is directed to the notion of social capital, since it is being imported into public health in much too uncritical a fashion.

A Paradigm Shift for Public Health Research and Practice

In the mid-1990’s, an interesting and important dialogue on the relationship between epidemiology and public health practice took place in the American Journal of Public Health, which highlighted the history of the scientific and applied sectors of the field. This dialogue sets the background for our discussion of appropriate public health strategies for the study of social experiences and community context on children’s health and well-being. In two thoughtful articles, the Sussers (53,54) trace the evolution of epidemiology through what they described as three chronological era, distinguished by their distinctive dominant paradigms, analytical methods and preventative practices.

The 19th century, the sanitary era, focused on environmental sources of “foul emanations”, in which the analytic approach was to demonstrate the clustering of mortality and morbidity, with sanitation at the center of their efforts. With the advent of the germ theory, the infectious disease era began. The analytic approach of isolation and culture of infectious agents was combined with a practice comprised of vaccines, quarantine and antibiotics. The last 50 years constitutes the chronic disease era, characterized by a “black box” paradigm, in which the analysis of individual level risk factors combined with preventative strategies related to modification of lifestyle were emphasized.

Given the failings of the current paradigm, which both ignores advances in biology which could inform mechanism and which favors interventions at the individual rather than societal level, they propose a shift. This new paradigm would be called, eco-epidemiology, to reflect the multi-disciplinary and systems science strategies required to conceptualize, measure and analyze the daunting complexity of human populations in their local and global habitats. They suggest replacing the black box with nested Chinese boxes, representing hierarchical ecological systems from the molecular to the societal level through which to investigate complexity and scale within and between levels.

This same theme of the exclusive concern of modern epidemiologists with individual level causation was explored by Pearce (40) in an accompanying article. Although epidemiological studies characteristically sample communities, the level of analysis is the individual and not the population. Furthermore, the epistemological strategy lacks theories about causation typically quantifying causation in a thicket of decontextualized risk factors. From genetic susceptibility to risky lifestyle, the focus of public health science and practice targets the individual in a manner reflecting Margaret Thatcher’s haunting comment “There is no such thing as society, there are only families and individuals.” The tendency for reductionism can thus be compounded by a political ideology that ignores or minimizes the contribution that societal level factors act as determinants of health and well-being.
In a continuing dialogue, Schwab and Syme (50) questioned whether eco-epidemiology would constitute a sufficient paradigm shift to face the challenge of the complexity and diversity of social phenomena. They proposed a second strategic element—participation with the community members who were to be the focus of study and intended beneficiaries of any intervention. They reasoned that the privileged epistemological perspective of community members be included in definition of variables, design of measurements (and interventions), data collection and analysis to “reflect the ecological reality of life in that population, as people experience it”. The epidemiologist would benefit through such a community partnership, without sacrificing rigor, and the knowledge generated through such collaboration would provide for a science more successfully integrated into public health practice.

Postulating the Role of Social Capital on Child Well-Being

Following this American dialogue, similar concerns with effective conceptual and empirical public health approaches that incorporate societal level analyses appeared in the Australian and New Zealand Journal of Public Health. Rather than picking up on the ecological/community participation discourse, these authors deliberated the potential of “social capital” as a conceptual and analytical strategy to raise consciousness about social causation in public health research. Indeed it is this pervasive concern with the “currency” of social life that appears to have led to the current popularity of the “social capital” approach in social science and policy arenas.

The popularity of this innovative metaphor builds upon the engaging writings of American (11,12,41,42) and French (6) social scientists. In the last few years, social capital (along with its associated goods--cultural, human, linguistic, emotional and health capital) has provided some attention to the concept of “social” in era captured by the beguiling simplicity of the language and assumptions of neoclassical economics. As a hybrid metaphor, “social capital” attaches the often-ignored “social” to the invincible “capital”, thereby reinvigorating interest in the role of social issues in contemporary policy debates. Characterized as a multi-factorial commodity, social capital commonly is defined by the attributes of trust, social networks and civic participation. An individual (or a community) can use its social capital stocks to generate income, education, health or other advantages through competition with others (or to solve common problems).

The Australian authors (31) questioned whether this term might survive the rigorous conceptual and measurement exercises required to incorporate such a model into epidemiological enquiry. They ask whether a social capital metaphor can contribute to the boundary-setting exercise of defining the vastly complex territory between society and health such that the basic and clinical sciences can explore intervening mechanisms. While aspiring to devise analytic approaches to penetrate social complexity, they express concern that the ambiguity of current definitions of social capital, and the simplification of social phenomena to the “one true measure”, can buy one the social understanding required for humane social policy and public health practice.

In this same volume, a Canadian health promotion perspective is provided by Labonte (29) who asks if there is actually a strategic advantage to adopting the term “social capital.” He sees ideological tensions in the different approaches to definition and measurement: the rational mind sees capital as a means to economic growth or personal advantage, whereas the humane mind sees it is an end in itself, to buffer the effects of market-driven inequalities. Questioning the originality of the social capitalists, he states “that it is palpable, powerful and part of the context in which every health promoter works”, and suggests (as those related terms that proceeded it) it may be “more a vehicle for career advancement
than for social change.” He also cautions about how the struggle over the best ideas and terminologies may retard the good work that needs to be done.

Another perspective on social capital (with regard to the well-being of children) is provided by a British feminist scholar (38) out of concern for proposed importation of this American product into Britain by the Health Education Authority. The Authority’s intent is to develop and test hypotheses around health-related behaviors of students to determine how well-being is constructed and constrained by various social/community factors. In concert with previous authors, she expresses concern about how social capital is defined, whether it is always positive or potentially harmful, how it is generated and if it is ready to apply to social policy formulation. Other shortcomings include the lack of attention to historical change, to local context and daily routines, the disregard for gender and the failure to appreciate children as agents in their daily activities and local habitats. Given the public concern in the UK for the apparent decline of community and traditional family structures, she questions whether social capital will become just another element in the “deficit theory syndrome”.

By contrast she finds the theories of Bourdieu (6) to be more compatible with the study of children’s lives by its incorporation of the details of daily routines in local settings. She comments that Putnam’s (41,42) theory, with its emphasis on civics, institutions and public affairs, depends on those social activities from which children are commonly excluded. It may be the case for children that large “stocks” of social capital in family, institutional and community may constrain their sense of agency. She concludes with an emphasis of how the health and well-being of children may depend upon the degree to which children are integrated into their communities in a manner that promotes self-efficacy and asks whether the child’s need of agency in their everyday life requires a different conceptualization of social capital for research with (and on) children.

**Current Research on Social Contexts and Children**

A traditional public health approach informed the research on social capital and behavioral outcomes in the data from a on-going longitudinal study of child maltreatment, the LONGSCAN project (46). Social capital was defined by the presence of five items (two-parent family, maternal social support, number of children in family, neighborhood support, and church attendance) and child well-being was defined by the Batelle Developmental Inventory Screening Test and Child Behavior Check List. Clinical cutpoints were set empirically by identifying scores that distinguished children who were unequivocally doing well from other children: 13% of the roughly 700 children in the sample. Comparing the small sample of those doing well with the remainder (in this high risk sample), the total social capital score was more strongly associated with measures of well-being than were the individual components. After controlling for covariates, significant associations between the total social capital index and developmental and behavioral measures were noted. In summarizing the significance of this work they comment, “Like others who have investigated social capital, we did not plan our study design or instrumentation with measurement of this construct in mind”. And yet after a post-hoc construction of their particular variant of social capital, they conclude that social capital may be most important for families that have few economic and educational resources. What are the public health implications obtained through this definition of social capital and the related analyses for children in high risk families?

Based on a secondary data analysis from the National Educational Longitudinal Study, McNeal (36) examines effects of parental involvement in schools on children’s educational outcomes. Using the social capital rubric, he argues that distinct advantages arise over traditional approaches through the conceptualization of parental involvement as a stock rather than a complex array of dyadic relationships. Kinship norms are redefined by a set of expected investments and resources as
conceptualized in Bourdieu’s (6) notions of the multiplicative effect of “stocks” of physical, human, cultural and social capital through which parents can “invest” in their children. This author describes how previous research on parental involvement may have arisen from the mis-specification of parent-teacher contact as cultural, rather than social, capital.

The findings from this analysis of more than 10,000 children and families lead to a contradictory collection of findings. Some examples are: involvement in parent-teacher organizations is related to lower science achievement and lower truancy and drop-out for Black and White, but not Latino and Asian students; educational support strategies are associated with higher truancy and dropout rates and higher science achievement for children from single-parent families, and parent-child discussions in single-parent families do not have the associated advantages for achievement that they do in two-parent families. This leads to conclusions that are contrary to that of Runyon: “the same form of social capital will be less effective for minority and poor students.” (46) Of course, these counterintuitive results may reflect selection effects rather than the causal effects of social support. In other words, parent involvement and added teacher support may be elicited by children who are already experiencing difficulties. Comparison of the conclusion from these two studies illustrates the concern as to whether social capital is a good thing that adds to one’s other capital stocks, or whether these atheoretical composite social constructs impede the more rigorous and intensive efforts to give social factors the attention they deserve in efforts to understand child development and well-being and actually obscure exactly what hypotheses are being tested.

A final study on social capital and children (among the few published reports found in the literature) show many of the same limitations of the first two. A study on corporal punishment (56), based on data from the National Survey of Families and Households, constructs a multidimensional predictive model of cultural, human and social capital variables expected to relate to the use of corporal punishment by parents. Four nested regression models of these capital variables were carried out with the following results: religiosity was positively and significantly associated with more spanking (cultural capital); college educated, and unemployed, used corporal punishment significantly less than high-school educated and employed parents (human capital); and parents receiving help with housework, and those who did not receive help with child care (social capital), used corporal punishment significantly less others. They state that by “synthesizing, juxtaposing, and blending a wide variety of determinants” to create scales of capital, and by developing a “notion of capital as investment”, they are better able to understand the “rational aspects” of corporal punishment and possibly assist in the development of child abuse prevention programs. Given that religiosity, employment and assistance with child care (specified as forms of capital in the model) are all associated with higher levels of spanking, would they recommend that parents divest themselves of these forms of cultural, human and social capital? Again the authors reveal how deficient in theoretical coherence the ingredients of behavioral capital can be and how confusing results often are. We question whether there is any basis to date to warrant the considerable effort that would need to be mounted to provide confidence and rigor to a model which currently is simply metaphorical.

These idiosyncratic and simplistic approaches to the study of social and community factors stand in marked contrast to way biologists have employed ecological concepts. Lewontin’s (34) discussion of dynamic sufficiency in theory building and community ecology serves as a challenge to social scientist who one might argue face even greater complexity in studying human societies than does the biologist.

Whether we look at the evolution of societies, languages, species, geological features, or stars, there is a formal representation that is in common to all. ...It is not always appreciated that the problem of theory building is a constant interaction between constructing laws and finding an appropriate set of descriptive variables such that laws can be constructed. We cannot go out and describe the world in
any old way we please and then sit back and demand that an explanatory and predictive theory be built on that description. The description may be dynamically insufficient. Such is the case with community ecology. We do not really know what a sufficient description of a community is because we do not know what the laws of transformation are like, nor can we construct these laws until we have a chosen set of state variables. That is not to say that there is an insoluble contradiction. Rather there is a process of trial and synthesis going on in community ecology, in which both state descriptions and laws are being fitted together.

While we argue for such an ecological conceptualization of human communities as articulated in this quote, the cautionary note raised by Venkatesh (55) in his telling of the history of community research in Chicago provides a sobering warning about the risks of transporting concepts from one discipline to another.

However in writings on urban ecology, Park and his colleagues routinely downplayed the interested, sometimes whimsical practices that characterized political actors. Instead, they favored the organization of social life in neighborhoods and communities where inhabitants appeared to be moving according to “organic” rhythms and constraints. The proponents of ecological theory identified but did not tie together with sufficient clarity two analytically autonomous moments in the social construction of space: a configuration of the city as a product of state practice and the movement of real estate, industrial and finance capital (“abstract” space); and, the pattern of human settlement that formed through the practices of social reproduction, such as recreation, work, consumption, and discrimination (“social” space)...the important point is one that could locate a structural tension in ecological theories of the city between political and natural forces— this one could add “cultural” forces as well, which were not well emphasized in the early ecological writings.

Although it is common practice to search for metaphorical constructs and employ analogous thinking to guide initial forays into complexity, it is important to know when metaphors are constraining or misguided. In the early stages of planning the PHDCN several theories of community organization and functioning were drawn upon. Theories of social disorganization (44) and social capital (11) were derived from sociology, while theories of social efficacy (3) and social ecology (7) were derived from psychology. Each of the theories were problematic in the nouns used. For example, social disorganization implied that poor communities were disorganized. It seemed better to view all community contexts as organized, although organized in different ways. As noted, the nouns, capital and ecology were imported into social science from economics and biology, with all the attendant risks of defining a phenomenon in metaphorical terms. The ecological model is most compatible with public health thinking, but it seems wise to remain open to its limitations.

III. Definitions, Measurement and Analytic Innovation

Definitions: Research and Administrative

Many studies of communities fail to include a sufficient number of community units to capture sufficient variability to have the analytic power to determine the strength of community effects. In defining communities for research purposes, care must be taken in selecting units such as schools, neighborhoods, or census tracts so as to meet the demands of a design. But it is important to recognize that a tension often exists between the demands of adequate sampling and the choice of ecologically meaningful units for analysis of experiences that are the result of collective socialization. In the PHDCN, census tracts were chosen as the unit of analysis with two reservations; first, that they were not large enough for sampling demands of a longitudinal study of children at varying ages, and secondly that they might not conform to the boundaries of neighborhoods as perceived by residents. The first
reservation proved to be a challenge in that the investigators had to combine contiguous and demographically similar census tracts to create a large enough base population to sample age eligible children. The question of how these officially demarcated units relate to perceived neighborhoods was addressed in the design. The results indicated that the “neighborhood clusters” were reasonable approximations of resident perceptions of neighborhoods (49).

With regard to the second limitation, while the census definition produces a fixed entity it was important to consider variation in the definition of neighborhoods as perceived by residents since this variation might reflect feelings of security or patterns of associations with neighborhoods, schools and services that are not driven by proximity. By the same token the definition of neighborhoods may vary according to the age or developmental status of a child. The transition from attending a local elementary school to a regional high school may enlarge one’s social orbit concept of neighborhood introducing new friendship networks and cultural influences. For many youth the attending a regional high school may expose them to circumstances that seem more important than those experienced in their neighborhoods of residence.

Quite apart from these research-driven considerations most cities and towns have created a variety of administrative definitions that geographically organize an area. Police, school, health and child welfare agencies typically have different reporting areas which have little correspondence to each other and no direct correspondence to census tracts. This annoying feature complicates the integration of administrative and survey data and retards the refinement of both.

**Measurement**

As indicated in the quote from Lewontin (34), the aim to determine the separate effects of community influences misses the point that social environments are complex systems. Yet, it is important to be able to define and measure these contexts with a satisfactory degree of precision and accuracy. Good measurement serves several purposes. It is crucial to judge efforts that are intended to improve community life as well as to know when unintended negative effects of policy decisions are present. Comparative studies of different communities require good measurement as do multilevel studies that aim to study community effects in relation to factors operating at family and individual levels of influence require comparably good standards of measurement at each level.

Given the limitations of administrative data it is especially important that adequate measures of ecological settings be created, tested and incorporated into research designs. In confronting this problem, several issues and challenges are raised. They are 1) the reliance on quantitative or survey approaches that typically sample across many settings or qualitative methods that limit the number of settings investigated but produce a different type of data, 2) the use cross-sectional as opposed to a repeated measurement strategy, 3) the nature of the specific social and physical characteristics examined, and 4) the issue of ecological or spatial dependence 14.

There is a prominent gap between knowledge garnered through surveys and ethnographic studies. Seldom have the two strategies been used in parallel or in series. Yet, there are pressing reasons to combine the methods. Observational approaches that do not depend on how persons respond to survey questions or to being interviewed offer an important complement to both survey and qualitative data. Secondly, cross-sectional studies may miss important dynamic factors and do not assess the selective processes that prompt families to move into neighborhoods or relocate from such areas. Thirdly, the selection of constructs to measure must depend not just on theory but on the demonstration that discrete bits of information cohere in the form of scales or factors, and that
these properties stand can be accurately assessed at the aggregate level. Finally, there is the issue of spatial dependence, the diffusion of social processes from one setting to another, and the dependence of smaller units on the larger configurations in which they may be embedded.

**Analytic Challenges**

The critique of social capital is important because over reliance on a metaphorical definition of a phenomenon takes the risk of misspecification. This not only does injustice to measurement, but perhaps even more seriously to the analysis of data. The seriousness of this issue is in the analysis of data that has not been derived from a framework that deliberately has set out to measure social processes in a way which is theoretically consistent and purposeful.

The multilevel design requires both psychometric and “ecometric” soundness of measurement. The standards for reliability and validity in measuring characteristics of individuals is well established, but the application of a level of measurement sophistication has not been achieved in measuring ecological settings. The term, ecometric, was coined as a way of creating a set of analytical procedures to account for the variation that exists at multiple steps in going from individual responses or discrete observations to aggregate ecological unit.

The challenge in this endeavor is that variation between respondents often appears to be greater than variation across ecological units. Raudenbush and Sampson (43) have employed a set of statistical procedures, built around hierarchical linear modeling to consistency in responses within and between ecological units.

![Multilevel analytical model of child well-being.](image)

**Figure 1** Multilevel analytical model of child well-being.

An ecological model envisions family processes and individual development as embedded in community and other macrosocial structures. Figure 1 depicts an analytical model that incorporates direct, indirect and interaction effects in a multilevel design across these three levels. For reasons of simplicity, this model is constrained to a cross-sectional and unidirectional scheme. A complete design
would have both multilevel and longitudinal components, providing for the incorporation and analysis of reciprocal influences and other dynamic processes. The point is that results from existing studies have not been in a position to execute an analysis of this full model mainly because of poor specification of community level influences of this type of model. It is in this sense that substantial progress has been made in both measurement and statistical procedures.

IV. The Evidence for Community Effects on Child Wellbeing

The preponderance of work examining the graded effects of SES on health has focused on adults. The fact that efforts to control for the impact of health risk behaviors on mortality, such as smoking and sedentary habits, still finds evidence of SES effects suggest that structural factors in society may be operating long before these risk behaviors are adopted (30).

The studies reviewed in this section are representative of the current state of knowledge. They illustrate how neighborhood factors influence birth weight, aggressive behavior and school drop-out. In all cases the research defines neighborhood factors on the basis of census data. O’Campo (39) and colleagues report that indicators of neighborhood disadvantage have both direct and indirect effects on the risk for low birth weight. As a direct effect, neighborhood poverty increased the odds of having a low birth weight infant. On the other hand, reduced access or delayed entry into prenatal care might be a mediating factor that explained the relationship of disadvantage to birth weight. These authors observed that the neighborhood unemployment rate predicted the likelihood of initiating prenatal care, such that women living in areas of low unemployment were more likely to begin prenatal care at an early stage of pregnancy. This, in turn, reduced the odds of delivering a low birth weight infant. An attempt was made to go beyond the interpretation of this phenomenon as result of individual level decisions about use of prenatal care to gain a sense of how community empowerment related to neighborhood disadvantage. They attempted this by counting the number of community groups present in neighborhoods, but viewed this as a crude indicator of social efficacy.

The interaction between family and neighborhood factors has been a theme in much of the criminological literature (47), but few studies have unraveled these influences in a way that reveals how they may operate developmentally. An exception is the study of aggressive behavior in middle school children conducted by Kupersmidt and colleagues (28). This study found that middle class neighborhoods appeared to inhibit the expression of aggressive behavior in poor African-American children from single parent families. But these same neighborhoods appeared to have unfavorable effects on poor white children, tending to isolate them from their more affluent peers. While claiming the study’s limitations of a cross-sectional design and distal measures of neighborhood processes, the work represents an important milestone in demonstrating differential effects of neighborhoods on poor families and the importance of the interaction between neighborhood resources and family environments.

Educational achievement represents the cumulative impact of individual, family, school and community influences. It also satisfies our interest in going beyond health status per se to capture the broader condition of wellbeing. As such, it proves a good place to judge the unique or specific way in which communities benefit children. It is especially instructive to consider the results of a series of studies that demonstrate a neighborhood effect on school drop-out. The failure to complete school can be taken as a indicator of several underlying problems, such as early childbearing, substance abuse, and violent victimization. Thus to the extent that community factors influence school drop-out, these other problems may to a similar extent be affected.
The results of a study by Ensminger et al (19) highlights the role of neighborhood factors as predictors of school drop-out. In this study, census tracts were taken to be a proxy for neighborhoods and demographic data derived from the US Census were used as evidence for neighborhood socialization influences. The supportive role of residing in a middle class neighborhood (defined as the percent of households headed by persons in a white collar profession and median household income) was shown for adolescent males. This appeared to operate as a direct effect. This finding is important because it replicates results from at least three other studies (22,8,13). But like these other studies, neighborhood processes were not directly measured. So one is left to impute the neighborhood effect as having something to do with resources that are more likely to be present in middle class neighborhoods than in poor neighborhoods. The question of whether these are informal or formal mechanisms or both remains open. Like other studies, the Ensminger et al. study found that living in a poor neighborhood did not contribute significantly to the odds of school drop out compared to family and individual factors. Females appeared not be influenced by neighborhood effects at any level of income. Given the distal character of the neighborhood explanatory variables, considerable caution is needed in interpreting such results. Obviously, the challenge is to move beyond census markers to actual measures of expectations, values, social interactions and political activities.

The strengths and limitations of these studies is underscored in the review by Leventhal and Brooks-Gunn (32). The conclusions of these authors are useful in two ways. First, the beneficial effects on educational achievement of living in affluent communities are documented as well as the adverse effects of living in poor areas. The second contribution relates to the emphasis the authors give to mechanisms and developmental pathways through which neighborhoods might exert either beneficial or harmful effects. Many of the conclusions of this article resonate with the earlier discussion calling for more carefully theoretical frameworks and more direct measurement of community properties. They also encourage investigators to treat communities as dynamic entities, indicating that direction of change may be essential in imparting developmental significance to neighborhood influences.

In the PHDCN, stratifying neighborhoods by socioeconomic and race/ethnic composition demonstrated the deep patterns of segregation. While there were many areas of segregated poor black neighborhoods, poor white families lived in neighborhoods that were more likely to have a range of incomes and a greater level of cultural diversity. Given the findings reported here, this revelation is important in locating where resources that promote child well-being are most likely to be, but they tell us nothing about the what those resources are, nor whether they are unique to such settings.

The PHDCN has made some progress in addressing the need for more direct measurement of neighborhood resources for children. Figure 2 shows a map of collective efficacy across 343 neighborhoods of Chicago. In this study collective efficacy is a theoretically and empirically tested construct that combines two scales, one of social cohesion and the other of the willingness of adults to intervene in the lives of neighborhood children. The results show the distribution of collective efficacy in quartiles. Results thus far indicate that high levels of this social resource is associated with low levels of violence49. More recent analyses are focusing on the spatial distribution of collective efficacy beyond the boundaries of individual neighborhoods (48). This is important not just to make the point that urban neighborhoods are far from isolated units in generating a sense of security and control in socializing children, but that what happens inside the boundaries is governed by the political economy of the larger administrative domains in which they are embedded.
Creating an adequate measure of community processes represents a milestone, since it permits a more satisfactory analysis of a multilevel design. Positive outcomes are being examined, such as the presence of self-efficacy, high educational achievement, and effective coping with adversity, as well as negative outcomes that represent many of the disorders and predicaments typically associated with adolescence. In addition, physical health status such as low birth weight, asthma, the presence of physical handicaps and obesity are being investigated (45).

V. Community-based Programs to Promote Child Health and Well-being
There are two paths to community involvement in health promotion. One involves “outreach” health services in an effort to expand their sphere of knowledge and action beyond the traditional borders of clinical encounters. The other path is grassroots in origin. Action is rooted in the community of residents and who may choose to involve health services. In reviewing the past decade of community-based work in child health promotion, a few case examples are selected to represent these two paths.
The Healthy Start Program is a national effort, organized in 15 high risk communities around the country, to reduce infant mortality through a combination of outreach and case management. Professional health workers were instructed to develop programs that generated community involvement as a key ingredient in implementation. Evaluation of the 15 programs suggested that two patterns of community involvement had been generated. The first, termed the service consortium model, was organized primarily through forming a network of professionals in the community who supplemented their group with government representatives and community members. The second approach, community empowerment, involved a more concerted effort to involve community residents in decision making roles. While the evaluators were not able to discern if one model was superior to the other in reducing infant mortality, they were able to document numerous ways in which community participation was deemed valuable. This midstream evaluation concludes that recruiting and maintaining participation of residents is laborious, and takes the risk that residents will not have the same priorities as professionals. Yet the merits would appear to far outweigh the disadvantages. The results helped to sharpen hypotheses that community involvement would eventually prove to be a crucial feature of reduced infant mortality.

The Community Access to Child Health Program (CATCH) of the American Academy of Pediatrics provides another example of professional efforts to become more genuinely community based. Extensive case studies of 12 programs are provided as part of the evaluation of the program which demonstrate ways in which pediatricians have approached community activism locally. The evaluation process involved a common framework to document the success and failure of these programs. While the assessment stops short of demonstrating increased access to services or achievement of improved health status, evidence is presented aimed at guiding future efforts to strengthen community based programs. Recommendations are made that the Academy take steps to institutionalize the principles of CATCH and a variety of testimonies are provided attesting to its merits. While moving in the right direction, however, the effort appears more top-down than bottom-up, and the voices and perspectives of parents and children themselves are largely absent from the evaluation reports.

Boston’s Ten Point Coalition has achieved national and international recognition for its contribution to the “Boston Miracle”. This group of African American ministers generated a successful campaign to reduce youth homicide by focusing attention on highest risk teenagers in their neighborhoods. The Coalition took the position that this relatively small number of youths had to be distinguished from a much larger group who were decidedly less dangerous. Much of the success of the program in substantially reducing homicide over a period of several years has to do with the relationship they developed with the police. The Coalition’s identification of dangerous youth facilitated police actions that were better able to control them. As a grassroots activity, the ministers had to defend their positions directly with local parents, victims and teachers, but ultimately the benefits of increased neighborhood security were welcomed. One evaluation of the effort concluded that, though there were several other notable elements in the violence reduction campaign, the Coalition’s role was critical in legitimizing police practices. Though the Coalition’s collaborations were with criminal justice authorities, the benefits were that many serious injuries and deaths were prevented and the promotion of greater security for all children in these areas was achieved.

North Carolina’s Smart Start is a statewide program to improve “school readiness” over the first five years of life. The program combines governmental, professional and citizenship participation in a reasonably balanced fashion. The Program has its origins in state legislation and permissive policies that encouraged local participation. Since 1993 the program has grown to create 80 local partnerships in which all 100 counties in the state and over 10,000 child care centers are represented. Documentation of the lessons learned over the past decade have been provided from the perspective of
local administrators (27). Two of the earliest lessons regarded the integrity and meaning of local autonomy and community representativeness. Local boards realized that guidance from the state and academic institutions, in the form of technical assistance and budget specifications, was important to their capacity to make decisions. The representation of parents, business leaders and human service providers was crucial to achievement of service integration. While this program, too, is in an early to middle phase of evolution, one of its founders states that “To this day, the heart and soul of the work takes place at the local level.” Of interest is that fact that Smart Start has avoided deriving a standard definition of school readiness, preferring to allow such definitions to emerge from local deliberation. A future challenge is the resolution of top-down and bottom-up influences in determining what child outcomes to monitor.

It can be concluded from this appraisal of four programs that community-based, health promotion activities for children is in a stage of experimenting with how to define and involve communities. It would appear premature to place emphasis on measuring outcomes as the units of analysis and complexity of interventions are still evolving. As suggested by Leviton and colleagues (33), coalition building of the type demonstrated by each of the programs chronicled here are needed as a precondition towards establishing a sustainable, participatory interface between communities and those who are responsible for the care and protection of families and children. This is an admittedly a long term process and effective ways to monitor progress are needed.

San Diego County has recently introduced a community “report card” to monitor the trends in the well-being and health of families and children (52). While the majority of the 27 indicators derived from multiple administrative data bases are child-centered, none address some of the important features of neighborhood life that are the focus of this paper, such as the presence of adult supervision, the quality of housing, access to play facilities, child care and after-school programs and the opportunities to develop non-academic skills. The Search Institute of Minneapolis has gone about as far as any group in delineating the community features that promote child well-being. They are also engaged in systematically evaluating these assets (4). In their scheme, a list of forty developmental assets are divided between an equal number of external and internal assets. Those external assets, which are related to an ecological perspective, are categorized into four clusters: adults supervision, empowerment opportunities, boundaries and expectations, and constructive use of time. While this scheme fails to meet our criteria in terms of an adequate base of theory and measurement, it is appealing.

VI. Future Directions
This chapter has provided an assessment of the evidence on social environmental influences on child health and well-being. Three cardinal issues were covered in detail. First, it is important to be critical of both the substance and utility of the term, social capital, as it is being promulgated in public health research and practice. Although the notion is intended to provide for greater attention to the value of social factors, it is sufficiently obscure in its conceptualization, varied in its utility and contradictory in its empirical results to recommend that the term be altogether avoided in future work. Secondly, we have attempted to show how theory, measurement and analysis of community characteristics must advance together. Future research in this area will benefit most by studies that advance clearly stated hypotheses of social processes which are anchored in theory and for which measures exist of established precision and accuracy. Finally, it should be obvious from the range of community-based child health programs reviewed that the field of child health is poised to study community contexts in a serious and sustained way. This represents an important connection of social science to the practice of public health. It is an ideal time to strengthen the scientific foundations of social ecology as it applies to child health and well-being.
An important insight this review confirms is that investigators have not yet appreciated the importance of human agency in the creation and sustainability of social organizations. There is still strong preference in research methods to hold “subjects” at a distance in order to objectify their reports and actions. The motivational and subjective bases of attitudes and behavior remain detached and largely obscured when methods of inquiry are limited to such approaches. The field would be substantially advanced through the incorporation of participatory methods in research designs. These methods, though poorly specified at present, are needed to enhance the validity and better establish the legitimacy of the concepts and measures used.

What this means for those working with children is to appreciate that societies have the evolved in a way to redefine the nature of childhood. This is reflected in many ways as revealed in patterns of adult-child relations, recognition of the importance of early brain development, the emphasis placed on the increasing number of years of education and training required to reach economic security, and in attitudes about the timing of marriage and family formation. This changing definition also recognizes the violations of child rights when communities engage children in armed conflict, harmful labor activities, abandon them to impersonal institutions or to survival on their own in the streets of cities. As mentioned earlier, this transformation is legally and ethically codified in the UN Convention of the Rights of the Child (CRC) (35). Children are viewed not from the lenses of subjects requiring charitable or philanthropic responses, but as citizens (and agents) in spite of their temporary state of immaturity. The CRC represents a set of claims made on behalf of the child to activate the obligations and responsibility of adults in a society.

Although the CRC was signed by the President Clinton in 1996, the failure of the U.S. Congress to ratify this legal document is consequential for not only for American children, but for public health practitioners and scientists as well. Several reasons exist for the failure; including a proclivity to view the rights of parents as standing in conflict with child rights; strong, but circumscribed support for the transfer of juvenile offenders to adult criminal justice system, which includes application of death penalty for crimes committed by children; and the more general reservations that exist in the Congress towards ratification of most international treaties. Failure to do so isolates child professionals in the U.S. from the benefits to be derived from significant efforts to transform public images of children and to find effective ways to implement policies that flow from the CRC.

Governments are required to produce regular reports on the efforts they are making to implement the CRC, and a permanent Committee on the Rights of the Child is established to monitor and supervise this global process. The achievement of the highest possible level of health and well-being are at the very core of the CRC’s aim. If it is too radical an endeavor for U.S. policymakers, it should be the task of those who work with children and who have an international perspective to advocate for its ratification.

For public health scientists and practitioners, this shift in thinking reflected in the CRC has important ramifications which relate to the ultimate success of child health promotion. Health promotion is rooted in community structures that operate beyond the individual and family to ensure that a common purpose is achieved. A sense of personal security, feelings of self-control, opportunities to pursue special interests and master them, and achieving the capacity for critical thinking, rational discourse and collective action represent the ideals of health promotion. The aim is much more than prevention of diseases; it is to have the opportunity and support to pursue well-being.

For the child, it is to live in an environment where adults and governments feel a responsibility to protect, guide and respect children’s evolving capacities to participate in matters that effect their own welfare. While ratification of the CRC is an essential step, its translation into research, practice and
policies requires sustained, conscientious pursuit. This is the essential ethical work that must be conducted jointly with the scientific enterprise. We have proposed that this kind of thinking about the relationship of children to community life represents an essential future direction for public health science and practice as it applies to child health and wellbeing.

This will require a shift in attitudes about children and a search for effective ways to engage them in activities that matter. Research can assist this process by revealing the elements of facilitating environments and supportive relationships for children and by demonstrating the benefits of strengthening the bonds to such contexts and affiliations.

The long term goals should be to reduce educational and economic disparities and to promote social justice by enlarging the spaces of citizenship and collective engagement of children in community life. The aims are basic to Sen’s theory of well-being, where capability sets are used to identify the environments and relationships that represent well-being freedom, and the choices made from among these sets, as well-being achievement (51). Understanding the development of children’s agency is key to the successful application of this theory in which children’s choices are made in the context of developmentally appropriate opportunities. It is essential to recognize that strategies to enhance children’s well-being are at risk of being diverted by society’s prevalent view of children as the “next generation.” The “well-becoming” of children tends to dominate the concern for their well-being. This is why the goal of child health promotion is contingent on a fundamental shift in attitudes; one that simultaneously seeks to improve the environments in which children are growing up, while at the same time, respecting their evolving capabilities as citizens. By placing emphasis for the promotion of child health and well-being in an ecological framework, the burden of responsibility is firmly situated with adults. In the many roles they assume over the welfare of children, the task of creating the appropriate circumstances for good health and the achievement of well-being in the world’s children remains a great future challenge.

FIGURE LEGENDS:

FIGURE 1-MULTILEVEL ANALYTICAL MODEL OF CHILD WELL-BEING

FIGURE 2-MAP OF COLLECTIVE EFFICACY ACROSS 343 NEIGHBORHOODS IN CHICAGO

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