



Theoretical Influences on the Evolution of the Cultural Ecology of Health & Change

By

Tony L. Whitehead, Ph.D., MS.Hyg., Professor of Anthropology and Director, CuSAG,
University of Maryland College Park; and

Robert E. Aronson, DrPh, MPH, Assistant Professor, Department of Health Education,
University of North Carolina at Greensboro

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Trends and Developments in Public Health Science and Practice: From Ecological to Individual Perspectives and Back Again

Early Environmental Perspectives in Public Health

Both the science and practice of public health has long acknowledged the importance of environmental (or ecological) influences (including social influences) on health outcomes (Zinsser 1935; Sigerist 1943). In fact the origins of the field of public health can be traced to concerns for environmental conditions, and perceptions of their relationship to health and community life (Seipp 1981). The work of John Snow in understanding the spread of cholera, even before the organism which causes it was identified, is an example of early epidemiology which was sensitive to environmental factors. The "Agent-Host-Environment" model of public health epidemiology (Lilienfeld and Stolley 1994), for example, examines aspects of the environment, characteristics of individuals and characteristics of the disease causing agent to understand and predict the distribution and spread of disease. Appropriate action could then be taken to halt its spread. During this century, however, there has been a significant change in the approach taken within epidemiology, based in part on the availability and widespread use of certain analytic methods. These advances in analytic methods combined with a political economy which rewarded scientific approaches to the study of contemporary problems, have led to significant changes in the way epidemiologists conceptualize health and disease (Pearce 1996). Pearce describes a movement in epidemiology from a population perspective (traditional approach) to an individual level perspective (modern approach). In the same series of papers, Susser and Susser (1996) characterize this modern approach to epidemiology as the "black box" approach, in which individual level risk factors or exposures are assessed in relation to outcomes.

In addition to changes in available analytic methods and the role of "science" in decision-making, the "epidemiologic transition" (Omran 1974; McLeroy and Crump 1994) resulted in the dominance of chronic illnesses with complex and multiple sources of causation. These trends seemed to converge, producing an approach to epidemiology, and public health more generally, that focused on examining the health outcomes of individuals based upon the presence of individual level risk factors. These risk factors have tended to include attributes (such as age, gender, race, SES) and behaviors of individuals.

Individual Lifestyle Approaches to Public Health Science and Practice

As the behaviors of individuals represent those risk factors most amenable to change, public health science and practice has become focused on individual "lifestyle" factors related to health (McLeroy and Crump 1994). Some of the most visible examples of this individual lifestyle approach to public health include large-scale community-based health studies/interventions funded by the National Institutes of Health, such as the Stanford Five-City, the Minnesota Heart Health and the Pawtucket Heart Health Studies (Elder et al. 1986; Farquhar et al. 1985; Jacobs et al. 1986). These studies, while targeting their interventions at different segments and levels of the community, focused their research and evaluation on ways that behaviorally related outcomes of individuals were modified (such as weight loss, smoking cessation, cholesterol reduction, etc.) (Mittelmark et al. 1993).

Emerging from these trends has been a period of intense emphasis on understanding individual level

determinants of behaviors that increase risk for various preventable health problems. Theories have been developed that examine behavioral choices of individuals based primarily on psychological and social psychological theory. One of the earliest theoretical models, developed in the early 1950s, was the Health Belief Model (HBM) (Hochbaum 1958; Rosenstock 1990). The HBM was one of the first attempts to describe individual disease prevention and health maintaining behavior through identification and assessment of the balances between expectations for action and reward. The creators of the HBM drew on value-expectancy approaches and decision-making theories, which sought to explain choices that people make under conditions of uncertainty (Becker, Maiman, and Mechanic 1983). As originally conceived, the model postulated that people will not engage in disease-preventing behaviors unless they have some knowledge and motivation, and, more importantly, believe themselves to be at risk or vulnerable, and feel the potential condition is threatening. They must also believe in the efficacy of the intervention and perceive few barriers to following recommended actions (Rosenstock 1974).

The key components of the model included (1) perceived susceptibility and severity, (2) a subjective estimate of the benefits of action, weighed against the barriers to taking action, and (3) a "cue to action," which would serve to activate the appropriate behavior. The "cue" could be provided either by symptoms (internal cues) or from messages encountered from friends, the mass media, or acknowledged experts (Becker, Maiman, and Mechanic 1983). After Bandura (1977) introduced the concept of self-efficacy (e.g., the conviction that one can successfully execute the behavior required to produce the outcome), many advocates of the HBM believed that this concept must be incorporated into the HBM to increase its explanatory power (Rosenstock 1990). In fact, Hochbaum (1983) specifically called for this inclusion during a special seminar convened to review the model. Yet while considering the impact of social and cultural factors that influence individual behavior, the HBM was designed to try and explain why individuals did not participate in programs to prevent or detect disease. Other important theoretical models that emerged during this time tended also to focus on cognitive processes or behavioral modeling of desired behaviors of individuals (Fishbein and Ajzen 1975; Ajzen and Fishbein 1980) and the stages by which individuals change (Prochaska and DiClemente 1982; Rogers 1995).

Tensions in Public Health Science and Practice: The Inadequacy of Individual Approaches

The emphasis of social psychology on the science of health promotion has also had a profound effect on the practice of health promotion. This academic perspective on theory, with its emphasis on hypothesis testing has been adopted by health promotion practice, which should be focused on problem solving in public health (McLeroy et al. 1994). The result has been health promotion interventions designed around single mid-level theories such as the Health Belief Model or Social Learning Theory. The problem, as McLeroy et al. (1993) point out is that "most of the problems that we as health educators are called upon to address are socially produced and maintained, and as a result no single theory, certainly no psychological theory, is adequate for developing truly effective and comprehensive health education programs." Even within the "science" of public health, dissatisfaction has been growing in recent years with this focus on individual level causes and individual level approaches to public health problems. Both Susser and Susser (1996) as well as Pearce (1996) have

called for a new paradigm in epidemiology that returns us to a population perspective and examines individuals within the broader physical and social environment.

These tensions have existed in Public Health for quite some time. In fact, in recalling his own experience while on the faculty of the Department of Health Education at the School of Public Health at UNC (1976 to 1987), Whitehead remembers how these competing paradigms and emphases became manifested in factions within the faculty. The primary factions were often described in terms of their orientation toward "patient education" vs. "community organization." Part of this factionalism, in reality, was related to issues of "science" and "epistemological" orientations, which were reflected in their methodological orientations toward understanding the human condition. The patient education group who focused more on the individual were more oriented towards a more positivist "quantitative/hypothesis testing" approach to research, while the community organizing group were oriented towards a more "qualitative/exploratory" approach to understanding the human condition.

Whitehead remembers Guy Steuart coming into his office fuming over the factions that existed in the department. When Whitehead asked Steuart which faction he (Whitehead) belonged to, Steuart commented with a smirk "you belong to all of them." Perhaps this was due to Whitehead's "holistic" epistemological orientation from anthropology, which values the role of the individual, but places that individual within the socio-cultural environments in which his or her daily life is experienced. Thus, as an anthropologist-ethnographer, Whitehead's research methods orientation was predominantly qualitative, but he also accepted quantitative methods in helping him to understand various aspects of the human condition as part of this more holistic epistemology.

In addition to the tensions that Whitehead became aware of within the department, he also learned that these tensions existed elsewhere within the School of Public Health and in a number of public health professions. As funding sources and professional journals emphasized the quantitative analysis of individual lifestyle risk factors and health outcomes, pressure mounted for the school to respond to this emphasis. Other schools perceived to be models of this type of research and practice orientation were held up to the faculty in the UNC's School of Public Health as standard bearers to which all faculty within the school should aspire.

Beyond Individual Perspectives: Towards More Comprehensive Models of Public Health Including the Concept of Community Participation

Even while there was a move towards individual lifestyle approaches, there continued to be models that advocated a more comprehensive approach to understanding health related behavior. For example, in 1974, Marc Lalonde proposed one of the first holistic models called the Health Field Concept (HFC), which suggests four large categories of contributors to health behavior and status: human biology, life style, environment, and health care organization. Dever (1980; 1984) took the HFC and provided a concise framework for utilizing the four major categories in data collection. This data could then provide the basis for interventions that utilized community participation as a primary factor. With the growing dissatisfaction with individual approaches, one of the developers of the Health Belief Model (Rosenstock 1990) also noted that other variables may influence perception, and thereby indirectly influence health-related behavior. He cited demographic, socio-psychological, and

structural variables, and especially educational attainment. He does note, in discussing critiques of the HBM, that after many applications of the model, it is coming to be widely believed that "both individual and socio-environmental factors should be targeted for health interventions" (Rosenstock 1990, 49).

As the emphasis on community participation in public health began to grow, elements of the preceding models were incorporated. One of the more popular is the PRECEDE (Predisposing, Reinforcing, and Enabling Causes in Educational Diagnosis and Evaluation) Model, developed by Green and his colleagues (1980). The PRECEDE model addresses key aspects of health related behavior, namely behaviors which may predispose an individual or group to risk, thus reinforcing existing behaviors or enabling a behavior to occur or continue. The primary focus of PRECEDE is to establish the cause-and-effect relationship between behavior and health, and to develop educational interventions to change unhealthy behavior. It assumes that the decisions and practices of individuals, and aggregates of individuals within a community, are influenced by knowledge, values, perceptions, and motivations which underlie behavior (L. Green et al. 1980).

After applying the PRECEDE model to a wide variety of health problems, Green proposed an addition to the model which acknowledged the importance of the role which policy formulation and administration plays in institutionalizing change. This revised model is the PRECEDE - PROCEED MODEL (in which Proceed stands for Policy, Regulatory, and Organizational constructs in Educational and Environmental Development (L. Green and M. Kreuter 1991). Here Green and Kreuter's purpose is to bring attention to a broader body of issues which will contribute to understanding health and illness behavior, and will be influential in developing health prevention and treatment/cure programs that are sustainable. Such a broader perspective was taken in 1988 when several researchers in health promotion proposed an ecological model for health promotion (McLeroy et al. 1988). This model contains elements of Green and Kreuter's PRECEDE-PROCEED framework (L. Green and M. Kreuter 1991).

The PRECEDE-PROCEED models, more than any of the others that have been discussed here, are oriented towards community-based planned change, and as such has become the most popular in the planning, implementation, and evaluation of CB-PCPs. PRECEDE-PROCEED has influenced the development of other models. For example, it informed the development of the Planned Approach To Community Health or PATCH Model by the U.S. Centers for Disease Control and Prevention for use around the country (Green and Kreuter 1992; Kreuter 1992).

However, while PRECEDE-PROCEED is fine model for providing categories (i.e., predisposing, reinforcing, and enabling contributors to risk behaviors, and policy, regulatory, and organizational constructs) for factors that should be considered in the planning, implementation, and evaluation of community based planned change projects (CB-PCPs), it is limited as a holistic or comprehensive model for identifying the range of factors that might influence project outcomes. This limitation is related to another weakness of PRECEDE-PROCEED, as well as of the other models that have been discussed in this chapter, in conceptualizing the *sociocultural contexts, processes, and meaning* systems that are inherent in complex community based change programs. More on considerations for socio-cultural contexts, processes, and meanings in community health will be discussed in Chapter 3.

Social Ecology as an Alternative to Social Psychology in Public Health

With the movement away from a domination by individual life style models of health related behaviors to more social context models, In the late 1980's and throughout the 1990's we saw a growing interest in ecological models in both the science and practice of public health. In this development, it appeared that public health practice took the lead, and public health sciences has been responding and catching up. Building on the work of Bronfenbrenner in the child development literature, as well as Belsky (1980) in child maltreatment literature, and Steuart (1985) in health education, McLeroy et al. (1988) proposed an ecological framework for health promotion. In this model they describe patterns of health behavior as being influenced by several social levels, including: intrapersonal factors; interpersonal processes and primary groups; institutional factors; community factors; and public policy. Green et al. (1996) noted that this framework, by including four levels of social influence beyond the individual, makes this perspective "resolutely ecological."

The comments by Green et al. (1996) appeared in a special issue of the American Journal of Health Promotion that was devoted to social ecological approaches to health promotion. In this special issue, leaders in the field of health promotion presented the history and foundation of this approach, and its implications for research and practice. In the editor's review of the issue's articles, O'Donnell (1996) describes the basic tenant of the social ecological approach as an understanding that health behaviors are embedded in social systems that influence and maintain behaviors. Changes in health behaviors require changes in those social systems in order to support those changes. This perspective seems narrower than some of the contributors' who also see the wider ecosystem (including physical environment, social environment, social systems, norms and beliefs) as directly influencing health and quality of life, apart from the influence it has on behavior (Green et al. 1996). According to Green et al. (1996) in their description of the ecological foundations of health promotion, health is seen as a product of the interdependence between the individual and the various subsystems of the ecosystem. To promote health, they argue, economic and social conditions must be conducive to health and healthy lifestyles. They note two models influenced by social ecological thinking that are currently of considerable influence within health promotion. These include the Ecological Perspective on Health Promotion developed by McLeroy, Bibeau, Steckler and Glanz (1988), and the more recent applications of the PRECEDE-PROCEED model (Green and Ottoson 1994; Green and Kreuter 1991).

Some of the most interesting ideas presented in the discussion by Green et al. (1996) had to do with the primary limitations confronted in the application of ecological models to health promotion. The first had to do with the overly mechanistic and deterministic approach these models often use in explaining human behavior. They argue that "ecological approaches must stretch their biological and sociological foundations to account for unobservable factors such as culture, values, and ideational and subjective aspects of quality of life." They go on further to say that ecological models must provide for at least the bi-directional connection between behaviors and environment, recognizing that behavior is not merely manipulated by environment, but also influences environment. A second area of concern had to do with the overly complex nature of such models and the difficulty of using them for planning and research purposes. The two models they describe are seen as attempts to make ecological frameworks more accessible and useful to programs and research designs.

Early Contributions to the Evolution of the Cultural Ecology of Health and Change

As will be seen in Chapters 12, 13, and 14, much of the conceptual work that has been included in the Social Ecology models, as well as some of the critiques offered by Green and his colleagues (1996) are incorporated in Whitehead's Cultural Ecology of Health and Change. There was also earlier work that also influenced Whitehead's thinking that also contributed to the evolution of the CEHC. During the period of time from Marc Lalonde's introduction of the Health Field Concept (HFC) in 1974, and the critique of the social ecology model offered by Green and his colleagues (1996), the components of the CEHC were evolving in Whitehead's head and in his work. Moreover, while Whitehead had been influenced as a graduate student by the work of Lalonde, he had also been influenced by the even earlier work of Talcott Parsons (1951) and his colleagues (Parsons and Bales 1955). However, as a graduate student in anthropology during the early 1970s, it was the work of the medical anthropologist, Fabrega, who had the greatest impact on Whitehead's thinking regarding health related behavior.

Although Whitehead never took a course from him, Fabrega was a faculty member where Whitehead was trained in anthropology, and his writings were mandatory for training in the sub discipline that Whitehead chose to develop as a specialty--medical anthropology. The Illness Behavior Model (the IBM) promulgated by Fabrega (1973) proposed four large categories for understanding illness behavior:

1. The biological system which focuses on genetic, chemical and physiological processes;
2. The social system which provides information about the attitudes and expectations of an individual's social group about the illness condition, as well as group and individual responses;
3. The phenomenological system which addresses the individual's awareness and self definition;
4. and
5. The memory system which includes past experience with illness and medical attitudes, beliefs and practices which provide feedback to and influence on the other systems (Fabrega 1973; Becker 1990).

What is of interest about the IBM is that Fabrega, as an anthropologist, defined illness behavior as being culturally constructed. Thus the basis of decisions about when one is ill, what causes a specific illness, what one should do when ill, and where one seeks help for illness are also culturally defined. Therefore, the IBM is useful in cross-cultural applications, including application in culturally diverse societies such as the United States. The last two categories of the IBM, addressed areas of the human condition that the popular individual lifestyle and social ecology models did not adequately address. Fabrega's discussion of human phenomenological systems addresses the concern by Green and colleagues (1996) that while the strength of social ecology models was in advocating that health behavior is a product of interdependence between the individual and the various subsystems of larger social systems, they were overly mechanistic and deterministic in trying to explain human behavior. Fabrega's focus on the "memory system" addresses a component of human culture that receives little attention in most of the models that have been more popular in public health, and that is the cultural phenomenon of "shared memories" of illness experiences.

This idea regarding shared memories of illness experiences means that the experiences that motivate illness related behaviors (i.e. what is an illness, what causes an illness, what one does when ill, and

where one seeks help) are part of the cultural knowledge of a cultural group. As such, a person might sometimes talk about a particular illness episode as his or her personal experience, without actually having experienced the illness episode. What the person is reflecting is an illness story that is part of the shared memory of his or her cultural group.

These cultural memories of illness experiences that Fabrega includes in his IBM, are similar to Kleinman's (1975; 1978; 1980) concept of Explanatory Models of illness (EM). In the EM, Kleinman posits that when humans in any cultural setting become ill, there are three general concerns that emerge: (1) what is the malady and its symptoms; (2) what caused it; and (3) what can be done to overcome it? Explanatory models, which are culturally constructed, provide responses to these questions. Also similar to Fabrega's work, Kleinman's EMI provided a framework for cross-cultural application, and became one of the dominant research paradigms in the field of medical anthropology.

In January of 1976, just prior to receiving his Ph.D. in anthropology, Whitehead went to work as a new faculty member in the Department of Health Education (since named the Department of Health Behavior and Health Education) at the School of Public Health at the University of North Carolina. There were a number of other medical anthropologists who had had an impact on his thinking by the time that he reached UNC, but he went back to Fabrega because his work seemed to be more akin to the leading theoretical paradigms that were being used by health educators. The Health Belief Model began to influence Whitehead's thinking, primarily because it was the most dominant theoretical paradigm in health education at that time, and one of the architects of the HBM (Godfrey Hochbaum) was a senior member of our faculty. Later, Whitehead began to patch parts of Green's PRECEDE-PROCEED model with the social systems aspects that he had taken from both functionalist sociologists (e.g. Parsons and Bales) and Fabrega.

Whitehead was also greatly influenced by the community-based orientations of his chairman and mentor at UNC, the late Guy Stuart¹, and by those of his ongoing colleague, mentor, and friend, John Hatch. Many conversations with another colleague and friend, Mr. Leonard Dawson, contributed greatly to Whitehead's evolution from a purely theoretically trained anthropologist, to the practice aspects of community based planned change. By the 1980s, Allen Steckler, a colleague who came to UNC during the same year as Whitehead did was already beginning to move towards ecological approaches in community health, and two of Steckler's former students with whom Whitehead interacted during their graduate student days, Ken McLeroy and Robert Goodman, would eventually become two of the key contributors to the social ecology school of health promotion. But it was Whitehead's own experiences as a trained anthropologist working in the field of community health over the past 35 years that led to the development of the Cultural Ecology of Health and Change. These experiences are discussed in more detail in other CEHC Working Papers.

¹ One area of influence of Stuart was his concepts of "units of identity" and "units of solution. He defined units of identity as those with whom a population most strongly identified, such as kinship group, ethnic group, local community, work group, etc. Such communities of identity should be known before attempting a community based change program because without such knowledge, such initiatives may be designed without considering the most significant units of identity, and this oversight may be the source of failure for such efforts. At the same time, effective solutions to individual, family, or community problems usually do not rest solely with the strongest unit of identity, but may also need the input of broader social units such as the institutions or policies of the wider society, or even cross societal structures.

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