

Patricia O'Campo
James R. Dunn *Editors*

Rethinking Social Epidemiology

Towards a Science of Change

With a foreword by
Professor Sir Michael Marmot

 Springer

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Patricia O'Campo
Alma and Baxter Ricard Chair in Inner
City Health
Professor, Dalla Lana School of Public
Health, University of Toronto
Director, Centre for Research on Inner City
Health part of the Keenan Research Centre
of the Li Ka Shing Knowledge Institute
St. Michael's Hospital
Bond Street 30
Toronto, ON M5B 1W8
Canada
pat.ocampo@utoronto.ca

James R. Dunn
Department of Health, Aging and Society
McMaster University
Kenneth Taylor Hall 226
Main Street West 1280
Hamilton, ON L8S 4L8
Canada
jim.dunn@mcmaster.ca

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Foreword

To illustrate the probabilistic nature of causation in epidemiology, a well-known lecturer in epidemiology used the example of a medieval archer defending a castle. The defender, high up there on the ramparts, is safe from the archers on the ground, provided he hides behind the battlements. But to shoot his arrows he has to appear in the space. If his timing is unlucky, he cops an arrow. Random. Bad luck of the draw. Play of chance.

Except that, of course, it is anything but random. First, at the individual level, we know that “accidents” are not randomly distributed – psychology, training and experience, tiredness and nutrition all play a role. Going beyond the individual level, the environment matters – the design of weapons, or castles, or houses or cars – and so do regulations. Give the archer a litre of wine before he goes on duty and his risk will be changed – as will his aim. Social structures condition risk: aristocrats rarely man battlements, except in movies. The leaders are safe, while expendable troops, battle fodder, are on the front line. The relative strengths of the attacking and defending armies will play a role. But why is there a war happening in the first place? What are the political processes that have led to two armies facing off at the castle?

In the end, my colleague’s point may be correct: there is an element of randomness in disease causation, whether it is the susceptibility to a mediaeval arrow, the likelihood of the renegade cell becoming cancerous or the likelihood of the atherosclerotic plaque in the coronary arteries rupturing with catastrophic effects on the heart. But this randomness is at the end of the process. If we want to do something about death from arrow wound, there are layers of psychological, social, economic and political causes that must be addressed. So it is with all health and disease.

The Commission on Social Determinants of Health (2008) used the phrase “the causes of the causes” to capture this concept. The dominant perspective in epidemiology has been a focus on individual risk factors. Even when analyzing social inequalities in health, policy focus has been on behaviour of individuals. One colleague who contributed to the English review of health inequalities used the term “lifestyle drift” (Marmot Review 2010); it is all too easy for policy makers to focus on aspects of lifestyle as being the causes of health inequalities while ignoring the causes of the causes.

When, in 1971, having finished conventional medical training, I went to Berkeley to do a PhD with Len Syme, I was not aware there was such a thing as social epidemiology. There were Len Syme and John Cassel studying how various social aspects related to health. There was also, of course, the British tradition of social medicine, going back at least to William Farr, the great Victorian observer of things medical and statistical. The most active practitioner of social medicine, then current, was Jerry Morris, who said: "Society largely determines health; ill-health is not a personal misfortune due often to personal inadequacy but a social misfortune due, more commonly, to social mismanagement and social failure." Not a bad starting credo for social epidemiology, alongside Virchow's famous phrase, quoted in this volume.

Studying epidemiology in the United States in the 1970s, social class was at best a variable to be controlled for in analyses, not an object of study. There were exceptions (Syme and Berkman 1976; Cassel 1971), but investigation of *explanations* for social class differences in rates of disease occurrence was scarcely in view. My own investigation of explanations for the social gradient in mortality in the first Whitehall study (Marmot et al. 1976, 1984) was initially limited to the role of individual risk factors as mediators. By the time I started to ask the broader question of why we had such social differentiation in society in Britain and elsewhere, the government of the day thought that social inequality in health was not a legitimate question for enquiry.

This brings us to the question of values, which is admirably discussed in the present volume (see Chap. 3). We read an illustration of the importance of values daily in our newspapers. No economist, I observe the current (2011) debates over economic policy with frustration and puzzlement. There was a global credit crunch that led to severe economic difficulties in many countries with large government debt and structural budget deficits. Everyone is agreed there is a problem, but proposed solutions differ markedly. Crudely speaking, there are two sides. One says that in order to get economic growth we need to cut the deficit; the other says that in order to cut the deficit we need to get economic growth. These are radically different. The first says government should cut spending to reduce the deficit, including reducing public-sector employment and private-sector dependence on government spending. The other side, more Keynesian, says that in a depressed economy with high unemployment, government should increase spending to stimulate demand and create jobs. For the moment, I am leaving out the third side, the green one, that asks why we want to go back to economic growth.

Naively, I would have thought that the data would settle the argument – what do all those macroeconomists do? But it would appear not. The deficit cutters seem to be to the political right and the Keynesians to the political left – although Keynes himself was a Liberal, in the British sense. Paul Krugman, a Keynesian, draws attention to salt water and fresh water economists in the United States. The saltwater Keynesians are on the coasts at such intellectually doubtful places as Princeton, Columbia and Berkeley; the freshwater types at places of rigour, such as Chicago. (Please, I am being ironic!)

What should be a debate about economic science turns out to be a debate about values, the outcome of which has absolutely profound consequences for the well-being, and hence, the health of populations. One, of course, has the suspicion that social distributions are the subtext of the argument. Reducing welfare, cutting public services and reducing public sector employment all, demonstrably, affect the lower ends of the income distribution. A stimulus, via tax cuts for the wealthy, benefits the rich. Values are affecting scientific conclusions and policy implications.

I have had my own disagreements with economists (Marmot 2009). I proposed a screening test for economists. Show someone the social gradient in health. If he/she concludes that health leads to social position then he/she is an economist. As with any screening test, there are false positives and false negatives, but the starting position for economists seems to be that health determines your social conditions; social epidemiologists' starting position is that social conditions determine health. Both sides justify their arguments with "evidence." But the starting position, which may well include values, determines how the evidence is collected and analyzed. What purports to be a debate about empirical evidence is actually a debate about how different disciplines view the world (Marmot et al. 2010).

It is then tempting to wonder if there is an intellectual connection between being a deficit cutter and believing that social conditions are *not* responsible for the social gradient in health. The intellectual tussle between having a coherent set of values and yet sticking close to the evidence is well brought out in this volume. Given that people who deny the importance of values in empirical research are ignoring the empirical evidence, such as that to which I have just alluded, it is well to be explicit about the values that guide our intellectual enquiry, particularly because epidemiology in general, and social epidemiology in particular, has an action focus as well as needing to be conducted at the highest intellectual level.

Social epidemiologists want a more just distribution of health. The Commission on Social Determinants of Health (2008) said that health inequity results from the conditions in which people are born, grow, live, work and age, and the structural drivers of those conditions. We said that inequities in power, money and resources are at the heart of health inequity and concluded that social injustice is killing on a grand scale. Carles Muntaner, in this volume (see Chap. 9), picks up Vincente Navarro's response to this call and says that what is needed is a more explicitly political level of analysis, in addition to the social, economic, cultural and environmental. Muntaner shows impressively and persuasively how this can be done with rigour.

The starting position for the present volume is that the reality of people's lives matters for their health. Their lived reality and the conditions that lead to it are responsible for the health of populations, provide explanations for health inequity and suggest solutions. Such a starting point is greatly welcome. Further, this volume both presents much-needed discussion of the intellectual and ethical basis for social epidemiology and can be seen as a rallying call for research in the best interests of improving population health. We called our English review of health

inequalities *Fair Society, Healthy Lives*. Put fairness at the heart of all decision making and population health will improve and avoidable health inequalities will diminish. The present volume is very much in that tradition and takes thinking a very large step forward.

Michael Marmot
Professor of Epidemiology and Public Health
University College London
(Chair of WHO Commission on Social Determinants
of Health 2005–2008; and Marmot Review Team,
University College London)
e-mail: m.marmot@ucl.ac.uk

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Chapter 1

Introduction

Patricia O’Campo and James R. Dunn

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Abstract Social epidemiology is now widely accepted as a legitimate area of inquiry, with a vast number of practicing social epidemiologists in universities, public health departments and other venues throughout the world. Social epidemiologists have focused on demonstrating the impact of growing social and health inequalities worldwide and have repeatedly demonstrated that health status is not distributed equally in society. Yet an almost exclusive focus on the existence and growth of gaps in income or health alone will not inform effective solutions. Social epidemiology risks exclusion from contributing to the formulation of solutions if our field continues to simply emphasize empirical studies demonstrating the existence of a variety of different health inequalities. We seek to challenge social epidemiology to “rethink its current practice” and adopt a greater focus on generating evidence required to “take action” to alleviate conditions of marginalization and

P. O’Campo (✉)

Centre for Research on Inner City Health, St. Michael’s Hospital, 30 Bond Street,
Toronto M5B 1W8, ON, Canada
e-mail: O’CampoP@smh.ca

J.R. Dunn

Department of Health, Aging and Society, McMaster University, Kenneth Taylor
Hall 226, 1280 Main Street West, Hamilton L8S 4L8, ON, Canada
e-mail: jim.dunn@mcmaster.ca

poverty (i.e., solution-focused research). We review a number of challenges facing the field that prevent social epidemiologists from participating in the formulation of solutions to these growing social problems and health inequities. We provide an overview of the topics of the chapters in this volume intended to provide a vision of social epidemiology as a science of change.

Abbreviations

CIHR	Canadian Institutes of Health Research
TANF	Temporary Assistance for Needy Families
WHO	World Health Organization

1.1 Rethinking Social Epidemiology: An Introduction

Epidemiology is the study of the patterns of health and illness in populations, while *social* epidemiology focuses on the social determinants that shape the risk and occurrence of poor health in these populations (Berkman and Kawachi 2000; James 2009). Since the late 1970s, social epidemiology has grown rapidly as a subdiscipline within epidemiology. It has reached a level of maturity to the extent that among mainstream epidemiology journals and funding agencies it is widely accepted as a legitimate area of inquiry. There are now a large number of practicing social epidemiologists in universities, public health departments and other institutions throughout the world. Courses, clusters, centres and degree programs in social epidemiology, while rare a decade ago, are now widespread throughout North America and Europe.

Over the past few decades, thousands of studies and several books (e.g., Berkman and Kawachi 2000; Oakes and Kaufman 2006; Cwikel 2006) have identified a range of individual and, more recently, contextual characteristics that are associated with a wide variety of health status measures and disease processes. Social epidemiology is now known for its ability to demonstrate that there are large differences in health status among identifiable social groups, and for the implication that these differences are unjust and avoidable (Commission on Social Determinants of Health 2008; Braveman 2006). As such, social epidemiologists in the last decades have built a large empirical base for an expanding set of potentially deleterious and hazardous exposures emanating from the social, cultural, political and economic environments (Acevedo-Garcia et al. 2003; Sorensen et al. 2004; Bernstein et al. 2007; Goldberg et al. 2002; Kasl and Jones 2002; Matheson et al. 2008; O'Campo et al. 1995).

At the start of the twenty first century, we continue to experience the enormous social problems contributing to poor health in individuals and in populations. Examples include poverty, wealth inequities, unemployment, oppression and, more recently, financial strain resulting from the recent global economic crisis (Hacker and Pierson 2010; Seabrook 2007; Ellwood 2006). In most countries (even prior to

the recent global economic recession), various sectors including labour, housing, transportation, health, justice, environment and education, to name a few, are not meeting the needs of all individuals equally. This statement is true even for countries that have the financial resources to meet the basic needs of their entire population. These economic and resource problems are not confined within the borders of nation-states. Overconsumption of valuable natural resources by high-income countries impacts the well-being of populations in lower-income countries where the resources are located. Production efficiencies in the affluent countries are achieved at the expense of labour and human rights of people in other parts of the globe. While natural hazards seem to be on the rise, including geological (e.g., hurricanes, earthquakes), hydrological (e.g., floods, tsunamis), meteorological (e.g., tornados, droughts, heat waves) and health (e.g., pandemics) disasters, it is the *social* circumstances that shape population vulnerability to their impacts (e.g., excess mortality rates among low- versus high-income populations experiencing earthquakes worldwide, highest mortality among the poor in recent heat waves, or the heavy health and social burden placed on the poor as a result of the Katrina hurricane in New Orleans) (Chou et al. 2004; Atkins and Moy 2005; Fothergill et al. 1999; Borrell et al. 2006; Naughton et al. 2002; Kruk et al. 2011; Bambra 2011; Elliott and Pais 2006; Centre for Research on the Epidemiology of Disasters 2011).

In almost any one of the aforementioned circumstances, whether regarding the consequences of economic downturns or of a geological disaster such as an earthquake, social forces determine who bears the greatest health burden (Ellwood 2006). Not surprisingly, there has been an exponential growth in studies focused on documenting the longstanding and increasing social and health inequalities worldwide (Commission on Social Determinants of Health 2008; Asthana and Halliday 2006; Braveman 2007; Macinko et al. 2003; Phelan et al. 2004; Starfield 2007; Syme 2008; Wilkinson 2007). Yet a focus on the existence and growth of gaps in income or health alone will not inform effective solutions. As others before us have noted, social epidemiology has reached a critical turning point in its development (Braveman et al. 2011; Schwartz et al. 1999; Oakes 2005; Rychetnik et al. 2002; Venkatapuram and Marmot 2009; Kaplan 2004). Throughout this book, we seek to challenge the field of social epidemiology. We aim to advance and accelerate our field's efforts to the next logical phase, during which epidemiologists will be prepared to address key questions on the causes of social inequalities in health (i.e., *problem-focused research*) and more critically generate the epidemiologic evidence required for the design of effective interventions to alleviate conditions of marginalization and poverty (i.e., *solution-focused research*). Too much of social epidemiology, we argue, currently focuses on problem identification, including describing the magnitude of problems, identifying risk factors and establishing associations between risk factors or markers and health outcomes. If social epidemiology continues on its current path, we are likely to see a continued growth of empirical studies demonstrating the existence of a variety of different health inequalities, with relatively little contribution to studies that characterize and inform solutions to those inequities.

One epidemiologist recently noted that while our field faces “a feast of descriptive studies of socio-economic causes of ill health we still face a famine of evaluative

intervention studies” (Bonneux 2007). Solution-focused research includes identifying causal mechanisms that have intervention potential for contributing to health outcomes. This type of research might include program evaluations, evidence syntheses (e.g., systematic reviews of interventions), policy analyses or syntheses and even tailored programs for subpopulations (Muntaner et al. 2010; O'Campo et al. 2009, 2011; O'Campo and Rojas-Smith 1998; Edwards et al. 2010; Gómez-Olmedo et al. 1996). And while there is evidence of some movement towards such a research program already in other fields (e.g., Smedslund et al. 2006; Welsh and Farrington 2008), there is no evidence of it in social epidemiology. Continuation with the *status quo* increases the probability of our field becoming complacent (Kaplan 2004; Berkman 2004), with social epidemiologists making little to no contributions in the formulation of solutions to growing social problems and health inequities.

In this chapter and throughout this book we highlight some of the barriers to fostering a discipline capable of investigating both the nature of and the remedy to social inequalities in health. If social epidemiology does in fact have unique domains of investigation related to the social influences on population well-being, it should also have unique approaches and mandates that shape its practice. We are by no means suggesting that the new directions we are promoting in this book are the only changes that would enable our young subdiscipline to progress. We are, however, suggesting that the research areas we are highlighting are a critical and necessary advancement of our field. In this chapter, we review the challenges facing social epidemiology while reviewing the themes of the book and specific chapters.

1.2 An Expanded Vision of Social Epidemiology

As modern social epidemiology has gained momentum over the last few decades, explanatory models of health have increasingly included social factors and contextual social processes (Berkman and Kawachi 2000; Oakes and Kaufman 2006). What holds this large body of mostly problem-focused research together is the repeated finding that health status is not distributed equally in society and that persistent differences exist between groups along a number of axes of social differentiation, including gender, income, education, race, ethnicity, immigration status and housing status, to name a few. With but few exceptions, these health inequalities can be characterized as situations in which the less powerful experience poorer health outcomes. Understanding the problem, describing its magnitude, trends and risk factors, however, is not the same as generating the necessary evidence on effective interventions needed to solve the problem (Brownson et al. 2009a, b). Generating epidemiologic evidence to inform solutions around the social determinants of health requires that we resolve the question of whether a focus on solutions or the policy implications of our research is a legitimate mandate for social epidemiologists and should be pursued more vigorously.

Many social epidemiologists are motivated to study the social determinants of health out of concern for the injustice of growing health and social disparities or out

of the desire to alleviate the misery of those experiencing oppression and deprivation. Applied epidemiology has a longstanding history of generating evidence to promote positive social change (Mackenbach 2009; Wallerstein and Duran 2010). However, not all epidemiologists agree that the purview of our field should include a focus on the uses of the evidence that we generate (Savitz et al. 1999; Rothman et al. 1998; Epstein 2003). This position is in part fueled by the idea that being concerned about the uses and implications of epidemiologic research for policy, practice or advocacy can threaten the perceived objectivity of the scientific process. Yet, others feel strongly that our scientific activities must include a focus on the means to solving these longstanding and seemingly intractable social problems (Krieger 1999; Ruffin 2010; Mackenbach 2009). This focus on solutions can take the form of studying the ways in which interventions and policies can improve population well-being, or even adopting an advocacy position either individually or as part of a coalition or interest group to promote positive social change (Mackenbach 2009; Wallerstein and Duran 2010). Thacker and Buffington (2001), in arguing for an applied epidemiology for the twenty first Century, note that an

applied epidemiologist is by definition an activist, moving rapidly from findings to policy, putting epidemiological knowledge to good use. Skills in communication must be an integral part of an epidemiologist's repertoire, as must the ability to work in multi-disciplinary coalitions. The 21st century epidemiologist must do all these things in addressing public concerns while maintaining a foundation of high quality epidemiologic research and practice.

Nancy Krieger (1999), in commenting over a decade ago on the two extremes of this debate, proposed that we move from our current position of presenting this issue as an "either/or" situation and adopt the stance that "epidemiology is, like any science, at once objective (using defined, rigorous, and replicable methods to assess refutable propositions) and partisan (reflecting underlying values and assumptions guiding conceptualization, choice, and analysis of research problems)." Like Krieger, we support the idea that, in directly engaging these seemingly opposing positions, social epidemiologists should utilize this inherent tension to reconcile differences in these views and further advance the field.

To meet this challenge, social epidemiology must recognize the legitimacy of different audiences and scientific methods for our research, as well as different goals for this research (Krieger 1999; Schwartz and Carpenter 1999; Rothman et al. 1998; Morabia 2009). Right now, there are broad audiences, from our colleagues and students to policy makers, program planners and the public, interested in the abundant problem-focused research that social epidemiologists generate, which establishes associations between social factors or processes and health outcomes. A subset of these audiences – program planners, policy and decision makers – might closely follow, be engaged in or partner with epidemiologists in generating applied social epidemiologic research. Yet another audience, advocates, might seek to engage scientists in gaining access to existing or new scientific knowledge concerning problems facing the public (Altevogt et al. 2008; Brown 1992; Fuchs 1996; Morgan 2005). Michael Burawoy (2004), a professor at University of California, Berkeley, while describing a disciplinary division of labour within sociology, identifies four

types of sociological research, each of which has its own primary audience, approach to generating knowledge, legitimacy and accountability. This framework, Burawoy argues, can be applied to any discipline. Such a typology, if applied to social epidemiology, might facilitate the recognition of a myriad of forms of research that should be present within any applied field. Table 1.1 applies Burawoy's typology to social epidemiology.

Two approaches, *professional-* and *policy-focused research*, derive from what Burawoy calls *technically rational* or *instrumental knowledge*. Originating from positivism a few centuries ago, during a time when science and technology were thought to drive progress in society, technically rational approaches to science, especially among professional scientists, were considered deterministic, specialized, quantitative, reliable and objective (Broom and Willis 2007). Thus, the focus on quantitative methods, reliability, generalizability and their accurate implementation is one of the defining characteristics of professional knowledge generation using a positivist paradigm. Much of the training, research and publication in epidemiology adhere to these standards (Bhopal 1997). *Policy-focused research* is the application of such methods to specific problems that are defined by the end users of that knowledge. For social epidemiologic research, these end users include decision makers and those involved in policy making within organizations and at varying levels of government, or even advocates in coalitions concerned with improving the social conditions that impact upon health (Boulton et al. 2009; Walke and Simone 2009).

In contrast to those types of knowledge that are informed by positivist paradigms, the two types of *reflexive knowledge* in the typology explicitly recognize values inherent in the scientific process and encourage critical reflection and dialogue between those who generate and those who use this knowledge. Burawoy argues that *critical science* is needed to challenge those engaged in professional scientific activities to improve and advance the discipline. A number of examples of such efforts within epidemiology can be found, including the arguments over the last two decades for explicitly including contextual data and variables in research studies (O'Campo et al. 1995, 1997; Diez-Roux 1998), and debates about the status of randomized clinical trials for epidemiologic research (Rychetnik et al. 2002; Sanson-Fisher et al. 2007). *Popular epidemiology*, as has been argued by several authors (Wallerstein and Duran 2010; Leung et al. 2004; Brown 1987, 1992; Morgan 2005; San Sebastián and Hurtig 2005), is critical to ensuring that epidemiologic evidence and knowledge are relevant for informing and solving contemporary social problems that impact on population health. This approach to epidemiology is undertaken with and for those who are concerned with and affected by the issues under study. Initiation of research by affected communities (Brown 1987, 1992; Fuchs 1996) and formation of scientific-community partnerships with communities, a method that is increasingly utilized in epidemiologic research, are but two examples of this approach (Leung et al. 2004; Yen 2005; Minkler 2005; Wallerstein and Duran 2010).

In exploring this framework as it applies to epidemiology, policy and popular approaches are currently underrepresented, which in part explains the imbalance in problem- versus solution-focused social epidemiologic research. Popular epidemiology may be particularly important for ensuring that the social problems of interest are accurately captured in our research and that solutions, once identified, are

Table 1.1 Types of knowledge generation in social epidemiology

Approach to social epidemiology	Professional epidemiology	Critical epidemiology	Policy epidemiology	Popular epidemiology
Type of knowledge	Technically rational knowledge: theoretical /empirical	Reflexive knowledge: foundational	Technically rational knowledge: concrete	Reflexive knowledge: engaged
Audience	Academic audience	Academic audience	Extra-academic audience	Extra-academic audience
Legitimacy	Scientific norms	Moral vision	Effectiveness	Relevance to addressing social determinants of health
Accountability	Peers	Critical intellectuals	Clients/decision makers	Designated publics
Politics	Disciplinary self-interest	Internal debate	Policy intervention	Public
Examples	Population-based studies on the social determinants of health	Disciplinary discussions and debates about role of individual versus social determinants in epidemiologic research	Assessment of the health impacts or benefits of social or economic policies	Community-based participatory health research

Adapted from Burawoy (2004)

feasible and acceptable to affected populations. While examples of epidemiological research involving community-based participatory research are growing in number (Leung et al. 2004; Yen 2005; Minkler 2005; Wallerstein and Duran 2010), new research approaches to academic-community partnerships, defined and controlled by affected communities, are also emerging. An example is the set of principles put forth by Canadian Indigenous populations to guide research undertaken about their communities and populations, called OCAP – Ownership (community ownership of cultural knowledge, information or data), Control (communities control and are involved in all aspects of the research project), Access (communities must have access to the research information and data) and Possession (communities should be able to hold information in their possession). In addition to requiring meaningful engagement between the researchers and community, these principles support self-governance and self-determination of research concerning Indigenous populations in Canada. While this approach may challenge the way research is traditionally undertaken in academic settings (e.g., the principal investigator is the owner of research data), these practices were developed in response to the observation of the outright failure of past research to improve the well-being of Canadian Aboriginal populations. OCAP is therefore “a political response to colonialism and the role of knowledge production in reproducing colonial relations” (Schnarch 2004). In practice these principles enable Indigenous communities to gain control over which researchers they collaborate with. They also yield several benefits to the research process and outcomes, including but not limited to: building and restoring community trust in research; improving the quality, accuracy and relevance of research; and building capacity of community as well as among researchers (Schnarch 2004). These principles, reflecting an approach to community-controlled popular epidemiology, have been adopted by the national health research funding agency, the Canadian Institutes to Health Research (CIHR), to be adhered to when conducting research on or with Canadian Aboriginal populations.

Although applying Buroway to epidemiology is not the only way to examine our discipline, his framework facilitates a greater understanding of the current strengths and limitations of our field. We immediately recognize that there is a preponderance of professional epidemiology and perhaps critical epidemiology (Table 1.1). Yet, if social epidemiologists seek a greater focus on informing, designing and evaluating the programs and policies that will address growing inequities, our discipline needs to engage in more policy and public epidemiology.

To remedy the current imbalance, we must move beyond the simplistic debates about whether epidemiologists should stay within the bounds of professional epidemiology, on the one hand, or, on the other, become a discipline of scientists engaged in public epidemiology. Those engaged in policy or practice and public epidemiology fields would primarily, but not exclusively, undertake the solution-focused research that we are encouraging. Yet, to ensure appropriate methods and legitimacy of the research, such knowledge generation should draw from professional and critical epidemiologic research activity approaches. Moreover, epidemiologists could, as Buroway notes, engage in more than one type of approach in their own research programs.

1.3 Going Beyond the Need for Social Theory

Recent calls for more social theory to inform social epidemiologic research should be heeded (Krieger 2011; Carpiano and Daley 2006; Dunn 2006). Currently, much of social epidemiology focuses on the downstream determinants of health, and too few studies examine the macrosocial determinants of health (Schwartz et al. 1999; House 2002; Putnam and Galea 2008; Berkman 2004; Williams 2003; Woodcock and Aldred 2008; Whitehead 2007). Any cursory exposure to the media reveals the critical contemporary social issues of our day that, because of their direct and indirect impacts upon population well-being, should be the subject of our social epidemiologic inquiries. Examples of contemporary social problems with implications for population health include: national policies that enable rapid concentration of power and wealth; overconsumption of valuable global resources by those in developed countries; “structural adjustment” policies that lead to widespread deprivation of basic necessities of life (e.g., shelter, food, water); revolutions against contemporary oppressive governments; and even the adverse consequences of increasingly popular programs such as micro lending (Roy 2010). These examples offer a small view of a growing list of global social problems at the start of the twenty first century. These global issues are, no doubt, at the root of the local social problems contributing to the growth in the very health inequities that comprise an increasing focus of social epidemiologic research. Yet where are these social determinants within the body of research that we are so rapidly generating?

Part of the explanation stems from the dominant explanatory model traditionally used in epidemiologic inquiry, the biomedical or “disease-specific model,” which seeks to identify mostly individual-based risk markers and risk factors for specified health conditions. This model is consistent with the increasing specialization in health research, through which those concerned with particular conditions (e.g., diabetes, unintentional injury) seek specific models that apply to their area of inquiry. Consequently, social epidemiologists continue this tradition by researching a narrow range of social questions concerning health that primarily focus on downstream social health determinants.

It may be of little comfort to know that this problem is not specific to epidemiology. The social sciences, the basis for much of social epidemiology, experienced a similar misplaced focus on individual risks for poverty and welfare participation at the end of the last century with detrimental consequences to key national poverty-related policies in the United States. Alice O'Connor (2001), Professor at the University of California Santa Barbara, while writing about the multimillion-dollar “poverty knowledge” industry, demonstrated that social scientists failed to study and recognize the role of macrosocial labour and economic factors that were major contributors, if not causes, of growing long-term poverty. She notes “how completely the energies of the poverty research industry, with all its advanced technology, were being channeled into a very narrowly defined set of issues revolving around the characteristics, behaviour, and attitudes of poor people,” resulting in policy solutions being focused on individual factors. Given that individual characteristics were

the focus of the analyses informing the policy recommendations concerning poor families and families receiving welfare, it should not be surprising that the major features of the federal act that ended “welfare as we know it” and created the Temporary Assistance for Needy Families (TANF) in 1996 emphasized remedial solutions to the flaws of individuals (i.e., failure to be gainfully employed) and proposed increasing marriage rates (in 2002 with newer federal legislation) as means for addressing deep poverty. Of the type of research that was informing policy formulation, O’Conner notes that the “problem was with what was being left out. Poverty analysts at that time rarely incorporated institutional practices, political decisions, or structural economic changes into their research; the focus was on individuals and families, not society.” This legislation permanently eliminated a long-standing guaranteed income for women and families in deep poverty, and the misguided focus of the evidence being generated to inform policy options supported the new controversial policies (O’Connor 2001).

Lest we repeat such experiences in social epidemiology, solution-focused research must expand beyond individual and proximal social risk factors and markers. Recent frameworks more explicitly and more appropriately identify the macrosocial determinants of health that should be included in the focus of our work, especially when conducting solution-focused research. For example, in 2008 the World Health Organization (WHO) Commission on Social Determinants of Health put forth a framework that builds upon several existing frameworks and ideas and explicitly identifies the role of macrosocial as well as proximal social determinants of health (Fig. 1.1).

Although social inequality has become a major focus of social epidemiologic research and of many major, authoritative reports (Commission on Social Determinants of Health 2008) in the last two decades, and has even been implicated as a major cause of morbidity and mortality, there are others who feel as Navarro (2009) does when he claims that “it is not *inequalities* that kill, but *those who benefit from the inequalities* that kill” (emphasis in original). There are also those who argue that macrosocial interventions might be less effective than proximal interventions (Rothman et al. 1998), but we disagree. Macrosocial policies and processes are efficient ways of both increasing and curtailing social and health inequalities and should be a greater focus of our work, both in terms of identifying how they contribute to inequalities and how they can be modified to bring about positive social change (Goldberg et al. 2002; House 2002; Muntaner and Chung 2008; Putnam and Galea 2008; Stuckler 2008). This is not to say that we should not focus at all on proximal social determinants, but rather that the focus on macrosocial factors has been too sparse to date and should receive greater emphasis if our research is to inform policies and programs to address social inequities.

A number of chapters in this book illustrate how social epidemiologists can and do incorporate macrosocial factors into frameworks and research studies. Not surprisingly, some (but not all) of this research involves qualitative methods or mixed qualitative and quantitative approaches – methods that do not typically appear in epidemiology textbooks or get taught in epidemiology training programs. In this volume, Shankardass (Chap. 6) presents a conceptual framework for the mediating

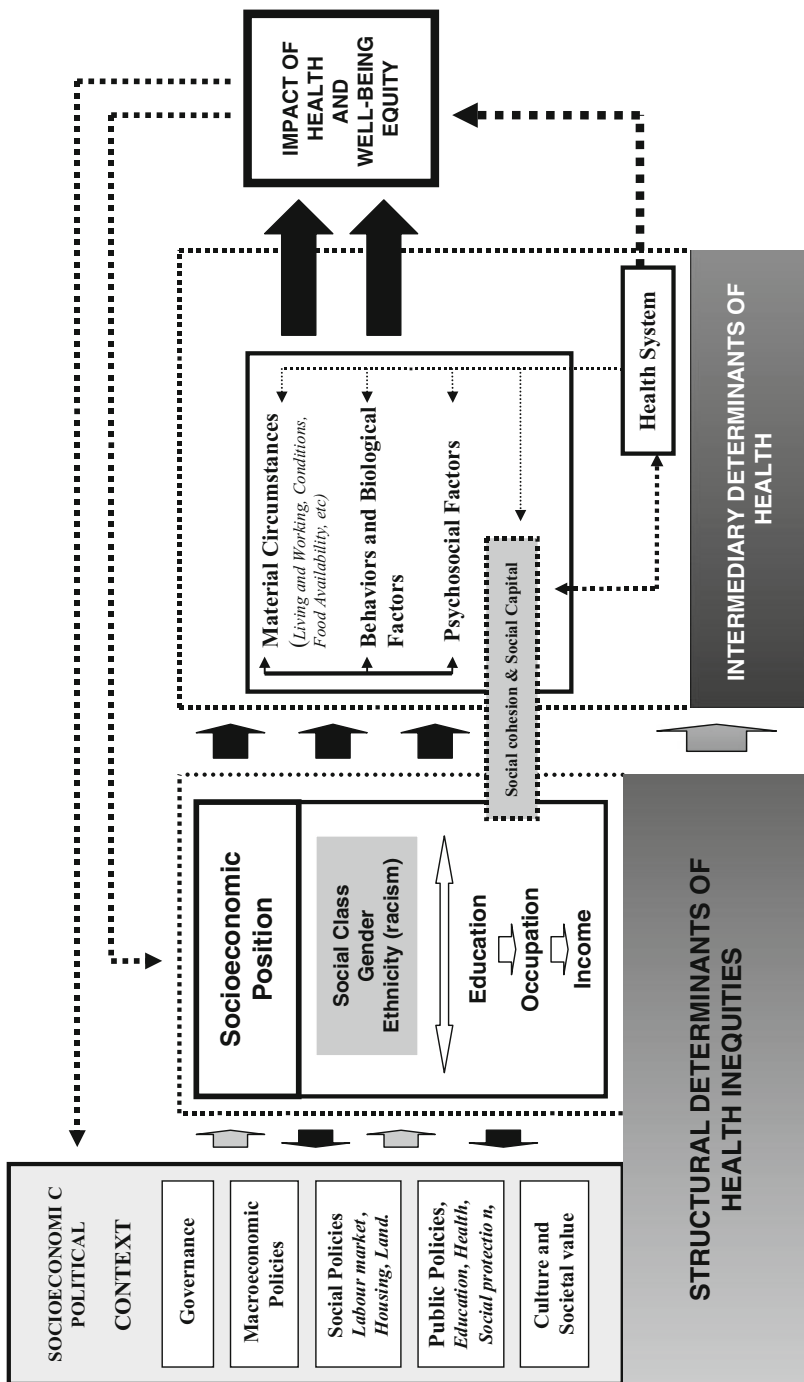


Fig. 1.1 Social determinants of health framework from the WHO Commission on Social Determinants of Health, 2007 (Reprinted from Solar and Irwin 2007)

role of place-based stress on chronic disease disparities. Drawing on sociological, psychological and psychoneuroimmunological research, and integrating notions of geographical “place,” the chapter presents a multidisciplinary narrative review of the stress discourse and adopts a systems view to describe the macrosocial environmental determinants of chronic stress and its impact on chronic disease. Yen, Shim and Martínez (Chap. 8) apply two sociological paradigms – conflict theory and interactionist theory – to neighbourhood-health research, using Eric Klinenberg’s *Heat Wave* as an illustrative example. They also discuss how these social theories can be used to expand upon the proposed mechanisms, namely social capital and physical disorder, connecting neighbourhoods, place and health. Rhodes and colleagues (Chap. 10) apply the concepts of “structural violence” and “structural vulnerability” to the social epidemiology of HIV risks among marginalized populations. Using four illustrative case studies of sex trade workers and injection drug users, they consider how methods and concepts in the social and epidemiologic sciences can be used to understand HIV risk as an effect of social, cultural and political conditions. Muntaner and colleagues (Chap. 9) discuss the role of politics in social epidemiology. Using political economy of health and welfare regimes frameworks, they present the results of a systematic literature review of 73 empirical and comparative studies on politics and health. Through this review, they show that political and welfare state variables are salient determinants of population health and health inequalities and that absolute and relative health differences exist across countries along a range of political variables. The chapter also takes into account important considerations regarding comparative political studies in social epidemiology. Shankardass and Dunn (Chap. 7) provide a discussion of space, geography and neighbourhoods. They argue that despite a longstanding focus on neighbourhoods, social epidemiology has failed to identify the social mechanisms of causation that result in inequalities. In particular, they critique the treatment of neighbourhoods as “containers” and argue for a more diverse use of theory to capture and explain complexity in neighbourhood processes.

Social epidemiologists will not generate critical evidence needed to inform the solutions to the most pressing social problems unless we use frameworks and theories that tap into the macrosocial determinants of health (Kaplan 2004; Schwartz and Carpenter 1999; Krieger 2008; Morabia 2009; Putnam and Galea 2008). A major barrier to studying the influence of macrosocial factors on health is the absence of appropriate data and research methods to operationalize the study of these frameworks. As can be seen in the WHO Commission on Social Determinants of Health framework (Fig. 1.1), macrosocial determinants have complex relationships to the proximal determinants of health inequities or health outcomes. Not only are macrosocial and economic factors at a different level of analysis than individual-based health outcomes, but the interaction between macrosocial factors and individual-level risks and outcomes (i.e., cross-level interactions) complicate their study. Currently, most research on inequities relies primarily on individual-level, cross-sectional and (more rarely) longitudinal data sets that are not ideally suited for the study of macrosocial determinants of health (Crone 2011; Dahlgren and Whitehead 1991; Wallace 2008; Westley et al. 2006). Even when newer methods for complex,

multilevel social determinants of health are proposed (Galea et al. 2009), methodological issues present ongoing challenges. As noted previously, databases of individuals, while useful for understanding proximal contributors to health, cannot reveal the key pathways of macrosocial and economic processes that influence individual well-being. Two chapters in this book address issues surrounding data and the systems that generate relevant data for social epidemiology. Smylie, Lofters, Firestone and O'Campo (Chap. 4) offer strategies for the transformation of population-based data and data systems currently used in social epidemiology into social resources that actively contribute to social, economic and political solutions to reduce health inequities. They argue that population health data collection, management, analysis and use systems are too often disconnected from communities. In order for data to become a tool for social empowerment and social change, the social structuring of data governance and management must transform from systems that reinforce social exclusion to systems in which communities are fully and centrally involved in data collection decision making. Lofters and O'Campo (Chap. 5) explore how the practice of stratification based on variables or indicators such as race, ethnicity, gender and socioeconomic position can evolve from simply demonstrating social inequalities to identifying underlying causes of gaps in health status. Through a discussion of theories about casual mechanisms, societal and contextual factors, and the heterogeneity of experiences within socially-defined groups, they offer key recommendations for how stratification in social epidemiologic analyses can be used to go beyond just describing inequalities and gaps to generating evidence to inform interventions – and evaluations of interventions – that target identified health inequities.

One issue that deserves much more explicit attention in our field is the role of values in informing social epidemiologic research. Bayoumi and Guta (Chap. 3) use theories of ethics – including deontological ethics, consequentialism, rights theory, virtue ethics, communitarianism and the capability approach – to show how core values can inform social epidemiology research. Using two illustrative examples from harm reduction and obesity research, the authors demonstrate that social epidemiology research is inherently value-laden. They draw upon critical theory and sociological models to develop a value-based vision of social epidemiology that is critical, engaged and relevant.

Another area where methods are being refined and developed to generate strong evidence for solutions draws from realist philosophy (Chap. 2). Realist philosophy is fruitful for what we hope is a forthcoming theoretical turn in social epidemiology, as it provides an alternative to positivism for conducting causal analysis and explanation. This alternative framework reflects the reality that social phenomena, like social inequalities in health, are open systems, and require theoretical explanations. Two other chapters in this volume draw explicitly upon realist philosophy, focusing on evidence synthesis and evaluation of interventions, respectively. Kirst and O'Campo (Chap. 11) apply realist philosophy to systematic literature review methods and offer these methods as a critical research tool that can be used by social epidemiologists to evaluate interventions for complex health problems. Using the example of a realist-informed review of universal intimate partner violence screening

programs in health care settings, they use these methods to identify key intervention mechanisms and contextual effects associated with successful programs. Sridharan, Dunn and Nakaima (Chap. 12) discuss realism as it applies to the evaluation of social programs and interventions to address health inequities. The authors emphasize the importance of understanding the contexts and mechanisms needed for interventions to work in addressing health inequities and focus on the time-dependent dynamics of interventions and their implications for evaluation of complex population-based programs.

1.4 Making Social Epidemiology Matter

Social epidemiologists should be strongly committed to generating actionable evidence for the solutions to the problems under study. As such, we must not only refocus the topics of our research to generate evidence to inform solutions, but we must also become more effective at disseminating our existing research, and, perhaps more importantly, we must ensure that we generate evidence and explanations that can be used to inform and support positive social change. While the topics of policy-relevant research and knowledge translation have been addressed previously, we seek to extend those discussions by incorporating the perspective of those engaged in designing programs and/or disseminating research findings. The final section of our book explores how social epidemiology can make a difference to policy and practice in terms of knowledge translation, community-academic partnerships and public health practice. Murphy and Fafard (Chap. 13) review the applicability of conventional knowledge translation strategies and argue that increased recognition of the complex social, political and value-based dimensions of policy and research is required for social epidemiology research to have practical and political impacts. Drawing on Jürgen Habermas' "knowledge constitutive interests" framework, they discuss how taking power, politics and values seriously can ensure that social epidemiology research plays a significant role in advancing social change. Schafer (Chap. 14) looks at how social epidemiologists who train and work in academic institutions can collaborate with program planners and policy makers in the community to address health problems. Interspersed within this chapter are excerpts from a conversation between its author, Peter Schafer (a community-based program planner), and Patricia O'Campo (an academic social epidemiologist) about the successes and challenges of their longstanding community-academic partnership for the Baltimore Healthy Start Program in Maryland. Finally, Mowat and Chambers (Chap. 15) discuss how social epidemiologists can produce evidence that is more relevant to public health policy and practice. Based on Dr. Mowat's experiences as the Medical Officer of Health for the Region of Peel in Ontario, Canada, they examine the challenges associated with integrating social epidemiology research into practice and offer guidance for how a social epidemiology research agenda can be implemented.

1.5 Conclusions

This volume is intended to be a constructive contribution to help guide the future of social epidemiology, a field that has much to contribute to the reduction of health inequities among many groups in many parts of the world. Yet at this stage of its development, the very things that helped social epidemiologists gain legitimacy in mainstream epidemiology (e.g., a strong focus and attention to scientific rigour, generalizability, etc.), may be what inhibit its wider impact in redressing health inequalities. That it not to say that we are promoting weaker studies; the same kinds of scientific activity that have been the cornerstones of social epidemiology must continue, but they must be supplemented by more theoretical research, a more pluralistic approach to methods and, ultimately, a more solution-focused emphasis that embraces the needs of decision makers. The purpose of this book is to assist in broadening the focus of social epidemiology from analysis to action. Although many will disagree with the premise of the book, we hope that all social epidemiologists can take something from it for their work. The health of many could be profoundly affected by evidence that directly informs greater action.

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