In Support of a Broad Model of Public Health: Disparities, Social Epidemiology and Public Health Causation

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This article defends a broad model of public health, one that specifically addresses the social epidemiologic research suggesting that social conditions are primary determinants of health. The article proceeds by critiquing one of the strongest arguments in favor of a narrow model, advanced by Mark Rothstein. The critique sets up the argument that a model of public health that does not address what actually causes health and disease is unlikely to improve public health. Assessing the substantial evidence regarding the social determinants of health, the article engages the policy paradox that precludes utopian prescriptions but demands more than mere expedience.

Introduction

In this essay, I will defend a vision of a broad model of public health, by which I mean a model of public health that involves sustained attention to the social determinants of health. Akin to Plato and Socrates, who defined justice by examining injustice, I will make a case for a broad model of public health primarily by analyzing and critiquing an argument for a narrower model of public health (which is not to contend that such a model is perforce unjust). In the interests of avoiding a straw man argument, I will assess and critique one of the strongest calls for a narrow model of public health, put forward by Mark Rothstein. In registering this critique, it is important to note that I concur with a significant portion of what animates Rothstein's argument—fears of government overreaching. These fears are, I will demonstrate, historically and conceptually well founded, but nevertheless are insufficient to justify preferring a narrow model of public health.

In many ways, the dialogue Rothstein and his interlocutors are engaged in is simply a microcosm of what I think is the paradox of the ethics of health policy: what policies we ought to pursue may be pragmatically untenable, yet what is pragmatically tenable may fall short of what policies we ought to pursue. Oversimplified, Rothstein's thesis is that the kinds of policies implicated in expansive models of public health are not within the proper purview of public health practice. However, I will argue that a vision of public health practice, which by design is not intended to address the primary causes of poor health, is impoverished. From an ethical perspective, public health is simply too important for a model that allocates responsibility for redressing the root causes of poor health to actors not expressly involved in public health practice. One can fairly question the worth of public health as an enterprise if its practitioners knowingly engage in activities that by definition are unlikely to improve public health (Verweij and Dawson, 2007).

One reason for Rothstein's concern is that those who articulate broad models of public health cannot hope to achieve their policy goals. Yet, as I will argue, if we permit what we can accomplish through policy to define the limits of what public health policies we ought to pursue, we have virtually guaranteed that the policies we do pursue will do little to positively impact population health. Again, the paradox grips us: a broader notion of public health may make progress to its goals unlikely, yet a narrower model of public health may render achieving the most worthwhile goals impossible.

I know of no facile means of resolving this paradox. More fundamentally, I am dubious of the tendency in modern thought to seek always to resolve paradoxes. To engage paradoxes, as R. M. Sainsbury reminds, 'is not merely to engage in an intellectual game, but is to come to grips with key issues' (Sainsbury, 1995: 1). To put it in Charles Taylor's terms, paradoxes illuminate important problems in our hermeneutic circle (Taylor, 1989), in our understandings of the conceptual schemes we inhabit and create meaning within. Arthur Kleinman has

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even suggested that a paradox can be therapeutic inasmuch as its contradictions and ambiguities provide space for the illness sufferer to construe their problems from a variety of different prisms and perspectives (Kleinman, 1988; Jackson, 2000). My goal here is not to resolve the paradox, but merely to shed some light on the contours of the cluster of problems. Verweij and Dawson note that because conceptions of public health often imply normative commitments, it is important to make explicit the ethical implications of an argument for or against a particular model of public health (Verweij and Dawson, 2007). As such, I do not pretense neutrality here; I have a definite preference for a broader vision of public health, one which does imply normative commitments for various public health stakeholders, and this essay constitutes an attempt to defend that preference. Nevertheless, if my efforts here are of any value, it will hopefully derive as much from elucidation of the policy dilemmas that face us as from recommendations for particular policy approaches.

Rothstein's Argument

Rothstein begins by stressing a legalistic conception of public health, asserting that the term 'public health is a legal term of art, and it refers to specifically delineated powers, duties, rights, and responsibilities' (Rothstein, 2002: 144). He acknowledges two different broader conceptions of public health: human rights as public health and population health as public health, but suggests that simply because various social problems exist does not mean they are part and parcel of public health. His larger argument is that an 'all-inclusive notion of public health is not only ineffective but counterproductive' (Rothstein, 2002: 144; Epstein, 2003; Epstein, 2004).[1]

Rothstein argues that the human rights model of public health is conceptually flawed in that it is imprecise, raises problems beyond the reach of any specific public health methodologies or capacities and is necessarily politicized inasmuch as it implicates notions of 'economic redistribution and social restructuring. . . .' (Rothstein, 2002: 144). It is not that Rothstein denigrates the 'noble struggle to ensure that every person has a minimum standard of living to support a healthy life,' but he contends that such battles should be fought without 'annexing human rights into the public health domain' (Rothstein, 2002: 145).

His critique of the population health model of public health proceeds on similar grounds. He disapproves of the population health model's assessment that 'public health is the province of both the public and the private sectors' (Rothstein, 2002: 145). The primary fear here is that the importance of public health 'will become diluted,' and public health will come to resemble public relations. Moreover, Rothstein contends, the population health model renders impossible any bright lines for distinguishing individual from public health, because 'cumulative individual health measures become population health' (Rothstein, 2002: 146). Finally, the population health model is infirm because the absence of population health interventions 'does not place the health of other individuals in jeopardy' and therefore may not 'justify coercive measures on the part of the government' (Rothstein, 2002: 146).

Rothstein advocates a third conception of public health, one based on government intervention. In this model, 'public officials tak[e] appropriate measures pursuant to specific legal authority, after balancing private rights and public interests, to protect the health of the public' (Rothstein, 2002: 146). Under this narrower conception of public health, a public health clinic providing primary care is not participating in public health activities (Rothstein, 2002). This is significant, according to Rothstein, because the lack of guaranteed access to care results in public health clinics providing primary care services (Rothstein, 2002). In turn, this taxes the resources of the clinics such that 'many health departments lack the resources to engage in core public health functions, such as epidemiology, disease surveillance, and environmental regulation' (Rothstein, 2002: 147).

Rothstein provides five reasons for supporting a narrower, government-based model of public health. First, only activities falling within a narrow definition of public health can justify the government's coercive power. Second, and related, the limits of government's coercive power are marked by those activities falling within the narrow model. Third, the clear demarcations of responsibility signal the proper public health roles among public, private and nonprofit entities. Fourth, the classification scheme assists in setting public health priorities. Fifth, given the historical propensity for unethical state programs justified on public health grounds, a 'narrow definition of public health will help steer public health officials away from activities that are inappropriate for the government' (Rothstein, 2002: 147). Rothstein concludes by noting that a narrower conception of public health would not require any change to the curricula of public health schools, and would best enable the government to balance competing considerations of individual's rights and public interests.

Critique of Rothstein's Argument

The core of my critique of Rothstein's argument is that it confuses the (legitimate) practical problems of implementing policies consistent with a broad model of public health with an ontological claim about what causes public health. That is, the question of what policies we can actually enact is not the same as the question of what causes good health or bad health. As a result of this confusion, Rothstein's argument permits the practical limits of public health policy to define the parameters of public health practice. The problem with this approach is that if the scope of public health policy under the narrow model is not causally related to health, policies consistent with the narrower approach are essentially guaranteed to be ineffective in promoting public health or preventing illness. It is fair to question the utility of public health practices and policies that are expressly intended to avoid addressing or ameliorating the root causes of poor health.

To explain this further, consider the analysis of Daniels, Kennedy and Kawachi in the field of social epidemiology (Daniels *et al.*, 2000).[2] Social epidemiology is so named for its emphasis on the social determinants of epidemiologic sequelae, or, to put it more simply, the effect of social conditions and structures on health (Krieger, 2001). Daniels, Kennedy and Kawachi marshal an impressive body of evidence establishing a robust correlation between socioeconomic status ('SES') and health. Specifically, they chart the existence of a health gradient across the socioeconomic spectrum (Daniels *et al.*, 2000). This gradient is constant across all levels of income, meaning not simply that the rich are healthier than the poor, but that the well-off are healthier than the slightly less well-off, who in turn are healthier than those less well-off, and so on and so forth.

As Michael Marmot, one of the world's leading social epidemiologists, puts it, the key is that

> [t]he demonstration of the social gradient of health requires that we go beyond binary thinking and appreciate that we are not dealing simply—as if it were simple—with the problem of absolute deprivation and health. We need to understand inequalities. (Marmot, 2003: S10)

The health gradient is relative rather than absolute, which means that even the poor in the United States, who enjoy a substantially higher GDP than the poor in many developing countries, have lesser health indicia across a variety of measures. Perhaps the most compelling illustration of this is the comparison Marmot makes between health outcomes for African-Americans and for Costa Ricans. Adjusting for dollars at the time of the writing in 2003, the GNP for Costa Ricans was approximately $6000 per person, with a life expectancy of 74 years (Marmot, 2003). In comparison, the GNP for African-American men was roughly $26,000 with a life expectancy of 66 years (Marmot, 2003). Similarly, Brunner and Marmot write in 2006 that 'the average life-span of African-American men in Harlem, despite much higher material living standards, is shorter than that of men in Bangladesh' (Brunner and Marmot, 2006: 10).

Marmot freely acknowledges that poverty is a problem for African-American men in the United States, but uses the example to demonstrate 'that, as important as money might be, we need to go beyond absolute measures of income to understand the relationship between social position and health' (Marmot, 2003: S16). The health gradient is relative to the particular income inequalities that affect the society to whom the individual under analysis belongs. Nor is the gradient peculiar to the U.K. or the United States only. A very recent study demonstrated the existence of such a gradient in 22 European countries, though the magnitude of the inequalities observed varied (Mackenbach *et al.*, 2008). A current working paper documents a robust gradient in South Korea between SES and health even after controlling for behavioral risk factors (Kim and Ruger, 2008).

Moreover, the recently issued Final Report of the World Health Organization Commission on Social Determinants of Health (chaired by Marmot) painstakingly details the evidence connecting socioeconomic disparities and population health (Commission on Social Determinants of Health, World Health Organization, 2008). The Report documents the social gradient of health in a number of societies—developing and developed—across the globe for such health parameters, as e.g.,

- Life expectancy of Indigenous Australian males is 17 years less than all other Australian males;
- The difference in adult mortality between the least and most deprived neighborhoods in the U.K. is more than 2.5 times;
- In the United States, $\sim$ 900,000 deaths occurred between 1991 and 2002 as a result of disparities in mortality rates between whites and African-Americans (Commission on Social Determinants of Health, World Health Organization, 2008).

In some sense, the observance of a correlation between socioeconomic disparities and health is hardly novel. Ramazzini cited it as long ago as 1713, and the sanitarians of the nineteenth century, including Chadwick in the U.K. and Shattuck in the United States also used the relationship as a basis for their urged public health reforms (Adams, 2001). Yet, Daniels, Kennedy and Kawachi are

correct in noting that bioethicists—and, I submit, public health policymakers as well—have been slow to appreciate the significance of the social epidemiologists' findings over the last few decades (Daniels *et al.*, 2000). Interestingly, the extensive Whitehall studies of civil servants in the U.K.[3] demonstrate that the correlations remain constant even when persons enjoy guaranteed access to care, suggesting that socioeconomic disparities are far and away the most significant determinant of population health.[4]

Admittedly, the correlation between socioeconomic disparities and health is just that, and one must take care to avoid confusing correlation with causation. Yet, the correlation is particularly robust, and has been empirically demonstrated in multiple contexts and in well-designed studies. Moreover, Daniels, Kennedy and Kawachi take care to suggest some possible mechanisms by which socioeconomic disparities cause poor health. They argue, for example, that, in the United States, 'the states with the most unequal income distributions invest less in public education, have larger uninsured populations, and spend less on social safety nets' (Daniels *et al.*, 2000: 12). They note that the facts as to educational spending are particularly revealing, as 'controlling for median income, income inequality explains about 40 per cent of the variation between states in the percentage of children in the fourth grade who are below the basic reading level. Similarly strong associations are seen for high school dropout rates' (Daniels *et al.*, 2000: 12).

Also addressing causal mechanisms, Brunner and Marmot argue that 'there can be no doubt that the effects of social organization on population health are mediated by psychological and biological processes' (Brunner and Marmot, 2006: 9). Their model of the social determinants of health emphasizes the effects of chronic stress on neuroendocrinological and immunological pathways. More specifically, they describe how the stimulus of chronic stress results in continuous activation of the fight-or-flight response, centered on the sympatho-adrenal pathway and the hypothalamic–pituitary–adrenal axis (Brunner and Marmot, 2006). Periods of acute stress punctuate the chronic stress and exert further biopsychosocial effects. The allostatic load (defined as 'stress-induced damage') hypothesis (McEwen, 1998; Brunner and Marmot, 2006) suggests that the 'price of adaptation to external and internal stress may be wear and tear on the organism, the result of chronic over- or underactivity of allostatic systems' (Brunner and Marmot, 2006: 15). Brunner and Marmot conclude: 'Disturbance of usual homeostatic equilibrium by the repeated activation of the fight-or-flight response may be responsible for social differences in neuroendocrine, physiological, and metabolic variables which are the precursors of ill health and disease' (Brunner and Marmot, 2006: 27).

While there exist plausible epidemiologic theories of the pathways through which social conditions cause disease, much work remains to be done on disease causality in general. Nevertheless, the implications of such a robust, well-studied and persistent correlation between socioeconomic disparities and health cannot fairly be dismissed simply by noting that the causal mechanisms remain to be delineated.[5]

Indeed, some find the link so compelling that they argue that social conditions are fundamental causes of health (Link and Phelan, 1995; Link *et al.*, 1998; Lutfey and Freese, 2005).[6] 'Fundamental causality' is a term of art, which defines as fundamental causes, those which stay distally constant even while more proximal causes are altered by intervention. Socioeconomic standards are a fundamental cause because they implicate

> access to resources. . . . that help individuals avoid diseases and their negative consequences through a variety of mechanisms. Thus, even if one effectively modifies intervening mechanisms or eradicates some disease, an association between a fundamental cause and disease will re-emerge. As such, fundamental causes can defy efforts to eliminate their effects when attempts to do so focus solely on the mechanisms that happen to link them to disease in a particular situation (Link and Phelan, 1995: 81).

In any case, either the social epidemiologists' contention that socioeconomic disparities are a primary factor in causing good public health is accurate, or it is not. If it is relatively accurate, it follows that the most direct means of augmenting population health is eliminating socioeconomic disparities. Alternatively, policies that might ameliorate the effects of health problems on income—which may increase disparities—could also be justified based on Daniels, Kennedy and Kawachi's analysis. These include, e.g.,

- funneling greater public monies to public health and prevention so as to prevent health catastrophes before they occur;
- reducing disparities in health literacy;[7] and
- investing capital in early childhood development programs,[8] which has demonstrated efficacy (Barnett, 1995; Anderson *et al.*, 2003).

Indeed, the bulk of the Final Report of the WHO Commission on Social Determinants of Health is devoted to assessing and ultimately recommending policies that would ameliorate socioeconomic disparities and compress if not eliminate the social gradient of health

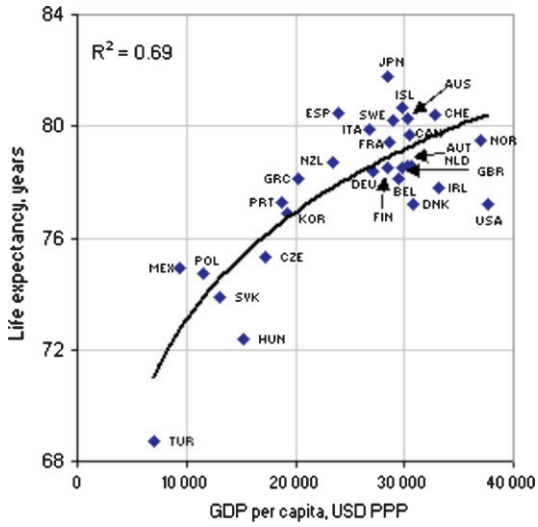

Figure 1. Life expectancy at birth and GDP per capita, 2003. Source: *Health at a Glance: OECD Indicators 2005.*

across the globe (Commission on Social Determinants of Health, World Health Organization, 2008).

The social epidemiologists who argue for a robust correlation between social conditions and health are making a claim about the factors that produce health. Although health ought not be defined by SES, the existence of such a robust correlation—as well as several extensive explanatory models for the correlation—suggests that a substantial feature of good public health is smaller socioeconomic disparities (Kaufman and Cooper, 1999; Merlo *et al.*, 2005). Such a correlation, for example, could well explain why some countries with significantly lower GDP per capita than the United States enjoy higher life expectancy rates (Figure 1): they have significantly lesser socioeconomic disparities than the United States (Daniels *et al.*, 2000; Kennedy and Kawachi, 2006). Similarly, there is good evidence that homicide rates are correlated with socioeconomic disparities (Wilkinson, 2006).

In policy terms, one implication of social epidemiology is that social policy seems in some important sense coextensive with public health policy. For example, there is a current focus on the relationship between health and 'place,' 'place' being understood expansively, as including the effects of, e.g., housing and neighborhoods on public health (Commission to Build a Healthier America, 2008a,b).[9] While it might be true that most would concede the connection between 'place' and public health, administrative units charged with regulating housing policy and zoning policy have generally not been under the auspices of public health governance. Indeed, in the US government, housing and urban development policy is delegated to an entirely different department than public health policy (the Department of Housing and Urban Development vs. the Department of Health and Human Services). Accordingly, the very kinds of policies that are typically deemed to be outside the ambit of a narrow model of public health are those most needed and most likely to improve public health.

If the social epidemiologists are correct in their surmise that social conditions exert a profound influence on public health, Rothstein's arguments for a narrower model of public health are unpersuasive. This is because the narrow model he advocates by definition excludes remediation of social conditions as an appropriate public health activity. Yet, if such social conditions are the primary factor in producing health, any public health policy that fails to address such conditions will *ipso facto* produce little in the way of health improvements. A narrow public health model may in such a case lack the desired impact, because it is specifically intended *not to* ameliorate socioeconomic disparities. Thus, whatever the practical arguments against a broad conception of public health (which I will address in further detail below), policies consistent with the narrow model are unlikely to have a significant impact on the public's health if social conditions are a primary causal factor of health (Verweij and Dawson, 2007).

It is important here to note that readers may well deny the antecedent of the conditional, that social conditions exert a significant influence on public health. Indeed, though I generally endorse this premise, there are certainly problems and weaknesses with some of the social epidemiologic claims (which I address *infra*). Rothstein's argument, however, does not address the crucial causal questions: what causes public health, or prevents it, or produces high mortality and morbidity rates? Instead, Rothstein is concerned with the practical problems related to implementing public health policy and the dangers of governmental overreaching. To be sure, these are worthy subjects of inquiry, but they do little to counter the social epidemiologists' arguments about the determinants of health. This is problematic for a narrow model of public health, because if it is the case that more equal social conditions are productive of public health, policies consistent with the narrow model are unlikely to have any significant effect in promoting public health. As Gostin, Bouffard and Martinez note, 'addressing the broad determinants of health leads to more effective social policy. Discrete interventions cannot create the conditions to promote and protect the public's health because they do

not attend to the underlying causes' (Gostin *et al.*, 2006: 64; see also Link and Phelan, 1995).[10]

It should be plain that the social epidemiologists' arguments are subject to a host of objections. In general, there exists a vigorous and timely debate on the role of income inequality in health (Kaplan, 2004; Lynch *et al.*, 2004a,b; Subramanian and Kawachi, 2004, 2006; Babones, 2008; Jen *et al.*, 2009). First, SES is a fairly crude measure in and of itself, as it is a complicated and dynamic phenomenon, comprised of a number of different factors. It is far from clear that SES and any number of social conditions are truly independent variables. One would surmise, for example, that SES status is in part a function of access to care, and for a rough indicia of this one need only look at the claims that a relatively high percentage of personal bankruptcies in the United States arise from medical debt (Himmelstein *et al.*, 2005; but see Dranove and Millenson, 2006).[11] Furthermore, even assuming the problems related to SES can be overcome, the social epidemiologists have articulated a correlation, albeit a particularly persistent one. Correlation is not causation, and, especially given the complexity of SES as a social variable, it is difficult to know whether SES itself has a causal role in public health or whether SES merely exists as a proxy for some other factors that chiefly cause health outcomes.

Finally, as Gopal Sreenivasan has recently suggested, if the social epidemiologists are correct in their claim that social determinants are primary factors in producing health, it is unclear why the appropriate policy is not simply to eliminate socioeconomic disparities via radical redistribution of wealth (Sreenivasan, 2007). Daniels, Kennedy and Kawachi rely on the correlation between SES and health to argue that a Rawlsian distribution of health care is needed (Daniels *et al.*, 2000). Yet, for one, the Whitehall studies suggest that access to care does not significantly ameliorate the health gradient along SES, and, in any case, it remains for Daniels, Kennedy and Kawachi to explain why social policy directly targeted to reducing socioeconomic disparities would not be more efficacious than enacting a policy of universal health care.

The chief problem with Rothstein's case for a narrow model of public health is that, because the argument does not focus on the causation of public health, it does not address some of the shortcomings of the social epidemiologists' approach.[12] The argument could be more persuasive if it acknowledged the existence of the cited correlation between socioeconomic disparities and health, and then offered reasons for discounting or repudiating it. That it does not do so leaves the narrow model of public health open to the charge that, if socioeconomic disparities are truly productive of public health, policies consistent with the narrow model, which by definition do nothing to ameliorate social conditions, will do little to actually improve health in the aggregate.

To this, proponents of the narrow model might respond by noting that its model of public health *practice* is not designed to enhance population health. That is, even if it is true that social conditions exert large effects on public health, it might well be that other administrative units and organizations, both public and private, ought to have the responsibility for addressing those conditions.

Such a rebuttal would not be compelling, for several reasons. First, a model of public health which is unconcerned with promoting population health is impoverished. I fail to understand the social utility of public health activities if they are not geared toward improving health in the aggregate. If public health practice is not intended to facilitate the public's health, it is unclear what use such practice has and why public monies should be forthcoming to support it.

Second, such a vision of public health is adrift from its historical moorings. It is no accident that the social epidemiologists' contention that SES is a chief determinant of health has antecedents in the sanitarians' programs of the nineteenth century.[13] The inception of public health as a distinct and recognizable set of practices in the United States grew out of the reform movements of the same time (Duffy, 1991; Warner and Tighe, 2001). There is no question that the Chadwickians were outright social reformers, and the analogous forces in the United States similarly aimed to facilitate public health by ameliorating social ills (Duffy, 1991). Furthermore, the public health programs of the early twentieth century were fostered by progressivism, which was at least in part defined by the goal of improving the social conditions that stymied human flourishing (Duffy, 1991). In short, whatever the reasons for a narrower model of public health, the rise of public health as a distinct set of practices is unequivocally marked by exactly the kinds of broad commitments and vision that Rothstein rejects.

Thus, the calls for a broader model of public health are arguably more faithful to the ethos of the sanitarians and the early public health reformers than the model practiced throughout much of the twentieth century.[14] Rothstein appeals to the traditional narrow model of public health as the proper standard for twenty-first-century public health practice, but that 'traditional' practice must be viewed as part of a public health dialectic in which prior events and conditions shape subsequent movements and ideas. Viewed as such, it is far from clear

whether the narrow model of public health is really so traditional at all.

Third, the notion that the social determinants of health are best viewed as the responsibility of other stakeholders is, I suspect, a factor in the dangerously weak US public health infrastructure. Given that public health has largely been practiced in the United States according to the narrow model for much of the twentieth century, it is notable that the edifice is in such disrepair. Gostin, Bouffard and Martinez note:

> The Centers for Disease Control and Prevention (CDC) concludes that despite recent improvements, the public health infrastructure 'is still structurally weak in nearly every area.' Indeed, structural deficiencies exist in each of the major components of the public health system, including outdated statutes; a poorly prepared workforce; lack of state-of-the-art information and communications systems (to improve surveillance, outbreak investigations, program evaluations, and interventions); and inadequate capacity (Gostin *et al.*, 2006: 59).

To be sure, the reasons for the deficiencies in the public health infrastructure are complicated and manifold, and it would be naïve to argue that public health practice consistent with the narrow model of public health is largely responsible for the status quo. Yet, at least if measured by resources allocated, there is no question that public health and preventive care are insignificant in comparison to individualized acute care and biomedical research. 'More than 95 per cent of US federal and state health spending is directed toward personal health care and biomedical research; only 1–2 per cent is directed toward prevention' (Gostin *et al.*, 2006: 58).

These allocations seem particularly hard to justify if the causation of public health is primarily characterized by social conditions. That is, if it is the case that social conditions exert a profound effect on population health, it is difficult to perceive the justification for directing such a minuscule percentage of health care resources to public health and prevention. Even the very notion of prevention has itself morphed into a concept that more strongly resembles models of acute care than a model targeted at social and economic interventions early in the lifespan (Starfield *et al.*, 2008). Starfield, Hyde, Gérvas and Heath argue persuasively that the merits of prevention are a function of its orientation to populations rather than to risk factors for individuals, and they expressly note that a primary focus of prevention ought to be the reduction of socioeconomic disparities (Starfield *et al.*, 2008).

Though there is nothing in Rothstein's narrow model that precludes policies based on this concept of prevention, a broader model that expressly incorporates attention to socioeconomic disparities as a criterion of prevention is more likely to facilitate production, execution and dissemination of remedial policies than one which delegates the authority to do so to other actors. In addition, suggesting that greater monies for prevention ought to come from administrative units and sources other than those expressly labeled 'public health' seems question-begging, because the issue is whether responsibility for the kinds of prevention that seem, based on relevant evidence, most likely to improve public health should fall to actors *other than* public health practitioners. My argument is precisely that a broad model of public health is much more likely to facilitate expenditures on population-based prevention than a narrow model.

Here, I want to note that this critique of allocation policy is based on notions of relative priority. That is, the social epidemiologists' contentions do not necessarily imply that dollars should be funneled away from caring for those in need. Daniels, Kennedy and Kawachi expressly deny that their views posit any kind of false choice between providing care for any given moral agent and improving population health. They note first that '[e]ven if we had a highly just distribution of the social determinants of health and of public health measures, people will still become ill and need medical services' (Daniels *et al.*, 2000: 24). More specifically, they readily acknowledge that "'identified victims'—people who are already ill and have known needs' may exert greater moral claims on scarce resources than "'statistical victims "'—[people] whose lives would be spared illness by robust public health measures and a fairer distribution of social determinants of health' (Daniels *et al.*, 2000: 24–25; see also Verweij and Dawson, 2007).[15]

Similarly, Fairchild and Oppenheimer point out the fallacy of the binary thinking that opposes acute and preventive care in their analysis of the causes of the decline of tuberculosis in the early twentieth century. They argue forcefully that positing a dichotomy between amelioration of the social conditions that cause disease and targeted interventions is ill-conceived: 'We have created a false choice between broad social change and one or another targeted interventions. . . ' (Fairchild and Oppenheimer, 1998: 1114).

Nevertheless, granting that acute care is morally important in a just social order does not negate the argument that 'some reallocations of resources to improve the social determinants [of health] are justifiable' (Daniels *et al.*, 2000: 25). The argument is that the body of allocation policies that affect population health could be

substantially improved by a lower ratio between spending on acute care and spending on public health and prevention—lower, that is, than the current 19:1 ratio (Gostin *et al.*, 2006). Moreover, given the body of evidence produced by the social epidemiologists linking SES and health, it is plausible to argue that the remediation of social conditions that cause poor health is superior from an evidence-based perspective than policies designed to increase access to care (Deaton, 2002).[16] Numerous studies, including both Whitehall studies, demonstrate the existence of a robust (and relative) health gradient along SES even when access to care is held constant.[17] The Milken Institute reached similar conclusions in its 2007 report quantifying the costs of preventable chronic disease in the United States (estimated at $1.4 trillion):

> The rapid growth of chronic disease is costing us lives, quality of life, and prosperity. The current health-care debate rightly focuses on the extension of coverage to the uninsured and the design of a financing mechanism that is both fair and efficient. We suggest that the nature of prevention and early intervention deserves equal place in the debate. An increased emphasis on prevention would both improve the health of America and offset some of the costs of an aging population by increasing economic productivity (The Milken Institute, 2007: iv).

Accordingly, while considerable energy is expended on analyzing whether expanding access to care will cost more, there is ample justification for simply reconsidering the ratio of resources spent on acute care and related research to those spent on public health and prevention medicine. The latter set of policies, while involving transaction costs that inevitably attend any regulatory change, would be unlikely to cost as much as many of the estimates that inevitably trail any detailed policy for expanding access.[18] This is because the recommended policies here are relative; they are focused on altering the way we currently allocate health care resources, rather than increasing the absolute amount of resources devoted to health care. The Milken Institute concludes that directing more attention and resources to prevention could save roughly $5.7 trillion in real GDP terms by 2050 (The Milken Institute, 2007).

Yet relatively little attention is directed to the importance of public health and prevention as opposed to the attention paid to access to care. Callahan reasons that '[i]ts focus on the health of populations is enough to get the field off to the wrong foot in an individualistic American culture. . . That is the inherent political problem with a population-oriented approach to health, which focuses on statistical, not individually identifiable, lives' (Callahan, 1998: 179; Kingdon, 2005).

I submit that an additional factor in our current allocation policy as to public health and prevention is connected with the predominance of the narrower model of public health, a model that does not tie policy to the social determinants of health. While nothing in Rothstein's government intervention model precludes him from endorsing a revision of the current funding scheme, it is plausible to suggest that including the amelioration of social conditions within the scope of public health practice would make such a revision urgent rather than simply prudent.

However, my critique of the narrow model of public health, and my preference for a broad model that focuses on the social determinants of health should not be taken as a repudiation of Rothstein's concerns. Quite the contrary, I share many of his apprehensions about a broad model of public health. Nevertheless, because I see public health as caused by social conditions, I see no policy alternative other than to engage some of these problems within the ambit of public health practice.

Specifically, there is little doubt that calls to ameliorate socioeconomic disparities engender intense political contest, especially in the United States with its legacy of individualism (Kingdon, 2005). Rothstein is hardly acting the part of the alarmist in warning that undue focus on wealth redistribution may not only be ineffective, but may dilute the imperative for other, arguably more modest public health objectives (Verweij and Dawson, 2007). Here Rothstein is drawing attention to the demands a health policy approach places on ethics in public health; a utopian vision is of little pragmatic use in crafting public health policy (though this is not to say aspirational goals are of no use at all). In addition, his concerns of government overreaching in the name of public health are well founded, especially given the long and painful history of stigma, eugenics and violation that attends so much of twentieth-century United States disability policy and history (Longmore and Umansky, 2001; Kudlick, 2003).

Though it is well known within the public health community, it is worth pointing out once again that many of the eugenics ideas that infiltrated German culture in the 1920s and 1930s originated west of the Atlantic Ocean, rather than the other way around (Allen, 1986; Pernick, 1997, 1999; Kevles, 1998).[19] That so singular and visionary a mind as Oliver Wendell Holmes could blithely note that '[t]hree generations of imbeciles are enough' in declaring Virginia's involuntary sterilization law constitutional speaks volumes about the power such narratives

exerted (*Buck v. Bell*, 1927; Lombardo, 2003; Lombardo, 2008). Those who deem such history to be purely a historical artifact do not see the dialectic nature of history, of the ways in which past events and conditions continue over time to shape and inform subsequent conditions and ideas (Goldberg, 2008). Disability rights advocates have voiced significant concern over the ways they perceive eugenic ideas and tropes have infiltrated public health discourse, perhaps most notably in the arenas of prenatal testing, fertility and assisted reproductive technology (Shakespeare, 1999; Parens and Asch, 2001). Whether such voices are correct is besides the point here. Rather, what matters is that dismissing the possibility of government overreaching in the name of public health is a perilous enterprise. The abyss always stares into us, too.[20]

Nevertheless, it is far from clear that the government intervention model of public health modulates such dangers to a greater extent than a broad model of public health. Rothstein's preferred model is defined in legalistic terms, and is directed almost exclusively to activities that pose a conflict between the government's coercive power and an individual's rights. As to the notion that public health is purely a legal term of art, this seems somewhat question-begging. While there is little question that rights conflicts in public health crises are crucial, the entire question is whether the field of public health can or should be characterized in terms of those conflicts. Moreover, unless one is to adopt an essentialist notion of public health—an approach I eschew—the mere fact that rights conflicts are an important component of public health practice and policy does not limit the scope of the practice to such conflicts.

Finally, as feminist and critical race theorists have documented, there are reasons to be suspicious of rights talk as a shelter from the extensive powers of government (Glendon, 1993; Mutua, 2002; Pieterse, 2007). Given that republican government is in an important sense founded on majoritarian rule, public health controversies often involve conflicts between different sets of rights, and it is unclear how a model of public health based on government intervention is of significantly greater assistance than a broad model in adjudicating these rights conflicts. Simply because the government intervention model is limited to instances of such conflicts does not imply it will be of greater assistance in resolving them. It is similarly unclear whether Rothstein's speculation that a narrow model of public health is less likely to facilitate government overreaching than a broad model is well founded, especially where twentieth-century public health practices, presumably closer in spirit to the narrow model, displayed just the kind of overreaching Rothstein quite legitimately fears.

Conclusions

In many ways, my disagreement with Rothstein reflects a basic paradox of the ethics of health policy. One of his chief concerns is that far-reaching or lofty goals for public health practice may do little or even harm more modest public health policies. This reasonable concern represents one arm of the paradox, the possibility that ethical objectives may frustrate pragmatic and tenable policy goals. In large part, my rejoinder is that permitting what policy goals we can pragmatically attain to set the standards for what public health goals we ought to pursue is ill-advised—this is the second arm of the paradox. The October 2006 issue of *PLoS Medicine* centered on social medicine and featured an editorial co-written by the journal editors in which they stated that "the stark fact is that most disease on the planet is attributable to the social conditions in which people live and work" (*PLoS Medicine* Editors, Stonington and Holmes, 2006: e445). Accordingly, if it is the case that social conditions are primary causal factors of health, policies that expressly avoid addressing those root conditions of morbidity and mortality are exceedingly unlikely to impact health in the aggregate.

While I concur with Rothstein's fears in adopting a broad model of public health, I see no policy alternative. Because I maintain that social conditions are primary if not exclusive causal factors in public health, expressly adopting a policy approach that is designed to avoid addressing such social conditions is untenable to me. Rothstein is correct in noting that the path to ameliorating such conditions, or at least pursuing policies that are intended to have some effect on the social determinants of health, is arduous and is riddled with practical difficulties. Yet Nietzsche's point was surely not that we should avoid fighting monsters, but rather that we must exercise caution in doing so.

Notes

1. Epstein is one of the most vocal defenders of the more traditional model of public health. However, while both he and Rothstein prefer an older model of public health, they do so for different reasons. In any case, Epstein's views have been critiqued by numerous commentators, and, therefore will not be addressed in detail here (Gostin and Bloche, 2003; Novak, 2003).
2. The field of social epidemiology, of course, is hardly limited to Daniels, Kennedy and Kawachi (Berkman and Kawachi, 2000; Marmot, 2003;

Marmot and Wilkinson, 2006). Yet, it is Daniels, Kennedy and Kawachi who have vocally and persuasively argued that bioethical, legal and policy discourse about preferable public health policies cannot continue to ignore many of the central claims advanced in the field.

3. The Whitehall studies, directed by Michael Marmot, have proceeded in two parts, with the long-term follow-up still ongoing. Whitehall I, begun in 1967 and completed in 1969, examined mortality rates among 18,000 British civil servants aged 20–64. Whitehall II was begun in 1985 with a cohort of roughly 10,000 British studies. A short summary of the studies is available from http://www.workhealth.org/projects/pwhitew.html (last accessed 3 November 2007), and a list of publications relating to Whitehall II is available from http://www.workhealth.org/projects/pwhitepub.html (last accessed 3 November 2007). Gopal Sreenivasan explains why the Whitehall studies are seminal in the annals of social epidemiology:
   [Marmot's] data are unusually good. To begin with, they are generated from data points on specific individuals. Each datum reports the relation between the class position of a particular person and the lifespan (and cause of death) of the very same person. By contrast, almost every other study begins from aggregate data. In addition, a number of important background factors are held constant for this study population. Notably, all of the subjects are stably employed, live in the same region (greater London) and have free access to health care provided by the [National Health Service].(Sreenivasan, 2007: 23–24).
4. This is an important point that I will return to *infra*. For one, this suggests that there are greater causal factors on health than access to care. Second, this point has implications for Daniels' call to establish universal health care in the United States as a means of ameliorating the health gradient.
5. However, this is not to deny the existence of problems with the social epidemiologists' contentions. I address these criticisms below.
6. While there is much I agree with in the conceptualization of fundamental causality, I am not entirely persuaded of either its novelty or its impact beyond the claims already advanced by many social epidemiologists.
7. While Daniels, Kennedy and Kawachi's book was published in 2000, roughly prior to the explosion of work on health literacy, I believe that health literacy is even now underestimated as a primary determinant of health, and that rigorous analysis of the links, if any, between socioeconomic disparities, health literacy and public health is sorely needed.
8. The reader who doubts the factual premise of my argument (that social conditions are a primary determinant of health) is encouraged to keep reading, as I engage several reasons for doubting some of the social epidemiologic claims advanced thus far. However, the chief problem with Rothstein's argument, like many of the arguments advanced in favor of a narrow model, is that it does not deploy such criticisms to undermine the force of the claims that social conditions are a primary determinant of public health.
9. There is a journal devoted entirely to the subject entitled *Health & Place*.
10. This analysis suggests a potential problem in efforts devoted to health promotion if such practices are not tied to a robust policy focus on the social determinants of health. This is because health promotion seems exactly the kind of 'discrete intervention' Gostin, Bouffard and Martinez identify. While I certainly am not contending that health promotion is undesirable, it is legitimate to question the effects, if not the aims, of an approach that targets individuals in at-risk populations if that approach is unaccompanied by policy focus on the macro-level determinants that seem to produce health and illness. In large part this is what Starfield, Hyde, Gérvas and Heath suggest is the problem with a focus on prevention that is oriented to individuals rather than to populations (Starfield *et al.*, 2008).
11. The issue of the role of medical debt in bankruptcy is contentious and is well beyond the scope of this paper. Even if those who argue that such debt is only a small factor in bankruptcy are correct, it nevertheless seems reasonable to suggest that costs of access may be substantial and may therefore exert a significant influence on SES.
12. The alternative, of course, is that Rothstein accepts the root causes of poor public health but nevertheless maintains that remedying such causes is not appropriately contained within the ambit of public health practice. This argument does not obviate the problems with the narrow model, for it ensures that public health practices will by definition do little to improve population health. I address this deficiency in detail *infra*.
13. However, some scholars have questioned the breadth of the sanitarians' commitment to social reform (Hamlin, 1992; Tesh, 1995).

14. Full analysis of twentieth-century public health practice is well beyond the scope of this paper, and detailed analysis of the extent to which particular public health policies incorporate social epidemiologic evidence remains largely unexplored. However, there is no evidence that such practice in the United States has widely incorporated such evidence in implementing policy. In any case, for purposes of this paper, I assume without argument that the majority of twentieth-century U.S. public health practice—and certainly more recent U.S. public health practice—more closely resembles a narrow model than the broad model described here.
15. There is a robust literature on the question of what duties are owed to strangers (Ignatieff, 2001; Abelson, 2005; Appiah, 2006).
16. Deaton observes that 'the [health] gradient exists, and takes much the same form, in countries, with and without health care that is free at the point of service' and concludes that, if so, 'differences in health cannot be explained by differences in access to it' (Deaton, 2002: 17–18).
17. However, while there is little evidence that access to health care affects the social gradient of health, it is legitimate to suggest that such disparities would be likely to increase in the absence of such access. My argument is not that access to care is unimportant, but rather that abundant evidence suggests it is not a primary determinant of population health.
18. According to Kaiser's Health '08 Website, President-Elect Obama's access policy features cost estimates of $50–65 billion. *See* Health '08, available from http: //www.health08.org/sidebyside_results.cfm?c=5&c=16 (last accessed 10 July 2007). Even if there is a paucity of evidence that increasing access to care would have a significant effect on population health, this obviously does not exhaust the normative claim that such access is the due of a just social order (Phillips, 1986). Though this is a topic I reserve for future discussion, it seems unlikely to me that the U.S. access problem can be resolved without expenditures even matching inflation, let alone the hyperinflationary growth rates of the period 1995–2005.
19. Pernick, who is a leading scholar on the history of American eugenics, begins his 1997 essay by demonstrating the extensive connections between American progressivism and American eugenics (Pernick, 1997). Moreover, eugenics and public health overlapped considerably in the first few decades of the twentieth century (Pernick, 1997; Cooke, 1998; Stern, 1998).
20. The entire quotation, taken from pt. 4, § 146 of *Beyond Good and Evil* reads: 'He who fights monsters should take care lest he become one. And when you look long into an abyss, the abyss also looks into you.'

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References

Abelson, R. (2005). Moral Distance: What Do We Owe to Unknown Strangers? *Philosophical Forum*, **36**, 31–39.

Adams, H. (2001). A Short History of Occupational Health. *Journal of Public Health Policy*, **2292**, 45–82.

Allen, G. E. (1986). The Eugenics Record Office at Cold Spring Harbor, 1910–1940: An Essay in Institutional History. *Osiris*, **2**, 225–264.

Anderson, L. M., Shinn, C., Fullilove, M. T., Scrimshaw, S. C., Fielding, J. E., Normand, J., Carande-Kulis, V. G. and Task Force on Community Preventive Services. (2003). The Effectiveness of Early Childhood Development Programs: A Systematic Review. *American Journal of Preventive Medicine*, **24**(S1), 32–46.

Appiah, K. A. (2006). *Cosmopolitanism: Ethics in a World of Strangers*. New York: W.W. Norton.

Babones, Salvatore J. (2008). Income Inequality and Population Health: Correlation and Causality. *Social Science & Medicine*, **66**, 1614–1626.

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

Brunner, E. and Marmot, M. (2006). Social Organization, Stress, and Health. In Marmot, M. and Wilkinson, R. G. (eds), *Social Determinants of Health*. New York: Oxford University Press, pp. 6–30.

Buck v. Bell. (1927). 274 U.S. 200.

Callahan, D. (1998). *False Hopes: Why America's Quest for Perfect Health Is a Recipe for Failure*. New York: Simon & Schuster.

Commission on Social Determinants of Health, World Health Organization. *Closing the Gap in a Generation:*

Health Equity Through Action on the Social Determinants of Health. (2008). Final Report of the World Health Organization's Commission on Social Determinants of Health.

Cooke, K. J. (1998). The Limits of Heredity: Nature and Nurture in American Eugenics Before 1915. *Journal of the History of Biology*, **31**, 263–278.

Daniels, N., Kennedy, B. and Kawachi, I. (2000). *Is Inequality Bad for Our Health*? Boston: Beacon Press.

Deaton, A. (2002). Policy Implications of the Gradient of Health and Wealth. *Health Affairs*, **21**, 13–30.

Dranove, D. and Millenson, M. L. (2006). Medical Bankruptcy: Myth versus Fact. *Health Affairs*, **25**, w74–w83.

Duffy, J. (1991). *The Sanitarians: A History of American Public Health*. Urbana: University of Illinois Press.

Epstein, R. (2003). Let the Shoemaker Stick to His Last: A Defense of the 'Old' Public Health. *Perspectives in Biology and Medicine*, **46**, S138–S159.

Epstein, R. (2004). In Defense of the Old Public Health. *Brooklyn Law Review*, **69**, 1421.

Fairchild, A. and Oppenheimer, G. M. (1998). Public Health Nihilism vs. Pragmatism: History, Politics, and the Control of Tuberculosis. *American Journal of Public Health*, **88**, 1105–1117.

Farmer, P. (2003). *Pathologies of Power: Health, Human Rights, and the New War on the Poor*. Berkeley: University of California Press.

Glendon, M. A. (1993). *Rights Talk: The Impoverishment of Political Discourse*. New York: The Free Press.

Goldberg, D. S. (2008). The Sole Indexicality of Pain: How Attitudes towards the Elderly Erect Barriers to Adequate Pain Management. *Michigan State University Journal of Medicine and Law*, **12**, 52–72.

Gostin, L. O. and Bloche, M. G. (2003). The Politics of Public Health: A Response to Epstein. *Perspectives in Biology and Medicine*, **46**(3S), S160–S175.

Gostin, L. O., Bouffard, J. O. and Martinez, R. M. (2006). The Future of the Public's Health: Vision, Values, and Strategies. In Bayer, R., Gostin, L. O., Jennings, B. and Steinbock, B. (eds), *Public Health Ethics: Theory, Policy, and Practice*. New York: Oxford University Press, pp. 57–70.

Hamlin, C. (1992). Predisposing Causes and Public Health in Early Nineteenth-Century Medical Thought. *Social History of Medicine*, **5**(1), 43–70.

Himmelstein, D. U., Warren, E., Thorne, D. and Woolhandler, S. (2005). MarketWatch: Illness and Injury as Contributors to Bankruptcy. *Health Affairs*, **24**, w63–w73.

Ignatieff, M. (2001). *The Needs of Strangers*. New York: Picador Reading Group.

Jackson, J. (2000). *'Camp Pain': Talking with Chronic Pain Patients*. Baltimore: Johns Hopkins University Press.

Jen, Min Hua, Jones, Kelvyn and Johnston, Ron. (2009). Compositional and Contextual Approaches to the Study of Health Behaviour and Outcomes: Using Multi-level Modelling to Evaluate Wilkinson's Income Inequality Hypothesis. *Health & Place*, **15**, 198–203.

Kaplan, G. A. (2004). What's Wrong with Social Epidemiology, and How Can We Make It Better? *Epidemiologic Reviews*, **26**, 124–135.

Kaufman, J. and Cooper, R. S. (1999). Seeking Causal Explanations in Social Epidemiology. *American Journal of Epidemiology*, **150**, 113–120.

Kennedy, B. and Kawachi, I. (2006). *The Wealth of Nations: Why Inequality Is Harmful to Your Health*. New York: New Press.

Kevles, D. (1998). *In the Name of Eugenics: Genetics and the Use of Human Heredity*. New York: Knopf.

Kim, H. and Ruger, J. P. (2008). Socioeconomic Disparities in Behavioral Risk Factors and Health Outcomes in the Republic of Korea. Working Paper, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1118801[last accessed 3 July 2008].

Kingdon, J. (2005). The Reality of Public Policy Making. In Danis, Marion, Clancy, Carolyn and Churchill, Larry C. (eds), *Ethical Dimensions of Health Policy*. New York: Oxford University Press, pp. 97–116.

Kleinman, A. (1988). *The Illness Narratives: Suffering, Healing, and the Human Condition*. New York: Basic Books.

Krieger, N. (2001). A Glossary for Social Epidemiology. *Journal of Epidemiology and Community Health*, **55**, 693–700.

Kudlick, C. J. (2003). Disability History: Why We Need Another 'Other'. *The American Historical Review*, **108**, <http://www.historycooperative.org/journals/ahr/108.3/kudlick.html> [accessed 10 July 2008].

Link, B. G., Northridge, M. E., Phelan, J. C. and Ganz, M. L. (1998). Social Epidemiology and the Fundamental Cause Concept: On the Structuring of Effective Cancer Screens by Socioeconomic Status. *Milbank Quarterly*, **76**, 375–402.

Link, B. G. and Phelan, J. C. (1995). Social Conditions as Fundamental Causes of Disease. *Journal of Health and Social Behavior*, Extra Issue: 80–94.

Lombardo, P. A. (2003). Taking Eugenics Seriously: Three Generations of Imbeciles Are Enough. *Florida State University Law Review*, **30**, 191–218.

Lombardo, P. A. (2008). *Three Generations, No Imbeciles: Eugenics, the Supreme Court, and Buck v. Bell*. Baltimore: Johns Hopkins University Press.

Lutfey, K. and Freese, J. (2005). Toward Some Fundamentals of Fundamental Causality: Socioeconomic Status and Health in the Routine Clinic Visit for Diabetes. *American Journal of Sociology*, **110**, 1326–1372.

Lynch, J., Smith, G. D., Harper, S. and Hillemeier, M. (2004a). Is Income Inequality a Determinant of Population Health? Part I: A Systematic Review. *Milbank Quarterly*, **82**, 5–99.

Lynch, J., Smith, G. D., Harper, S. and Hillemeier, M. (2004b). Is Income Inequality a Determinant of Population Health? Part II: A Systematic Review. *Milbank Quarterly*, **82**, 355–400.

Mackenbach, J. P., Stirbu, I., Roskam, A. J. R., Schaap, M., Menvielle, G., Leinsalu, M. and Kunst, A. (2008). Socioeconomic Inequalities in Health in 22 European Countries. *New England Journal of Medicine*, **358**, 2468–2481.

Marmot, M. (2003). Understanding Social Inequalities in Health. *Perspectives in Biology and Medicine*, **46**, S9–S23.

McEwen, B. S. (1998). Protective and Damaging Effects of Stress Mediators. *New England Journal of Medicine*, **338**, 171–179.

Meier, B. M. (2006). Employing Health Rights for Global Justice: The Promise of Public Health in Response to the Insalubrious Ramifications of Globalization. *Cornell International Law Journal*, **39**, 711–774.

Merlo, J., Chaix, B., Yang, M., Lynch, J. and Rastam, L. (2005). A Brief Conceptual Tutorial of Multilevel Analysis of Social Epidemiology: Linking the Statistical Concept of Clustering to the Idea of Contextual Phenomenon. *Journal of Epidemiology and Community Health*, **59**, 443–449.

Mutua, M. (2002). *Human Rights: A Political and Cultural Critique*. Philadelphia: University of Pennsylvania Press.

Nietzsche, F. (1995 [1885]). *Beyond Good and Evil*. Kaufmann, W., trans. New York: Vintage Books.

Novak, W. J. (2003). A Critique of Richard Epstein's Defense of the Old Public Health. *Perspectives in Biology and Medicine*, **46**, S176–S198.

Pernick, M. S. (1997). Eugenics and Public Health in American History. *American Journal of Public Health*, **87**, 1767–1772.

Pernick, M. S. (1999). *The Black Stork: Eugenics and the Death of 'Defective' Babies in American Medicine and Motion Pictures Since 1915*. New York: Oxford University Press.

Phillips, D. L. (1986). *Towards a Just Social Order*. Princeton: Princeton University Press.

Pieterse, M. (2007). Eating Socioeconomic Rights: The Usefulness of Rights Talk in Alleviating Social Hardship. *Human Rights Quarterly*, **29**, 796–822.

Parens, E. and Asch, A. (eds) (2001). *Prenatal Testing and Disability Rights*. Washington, DC: Georgetown University Press.

Robert Wood Johnson Foundation Commission to Build a Healthier America. (2008a). Issue Brief: Housing and Health. Available at http://www.commissiononhealth.org/PDF/033756c1–3ee3–4e36-bb0e-557a0c5986c3/Issue%20Brief%202%20Sept%2008%20-%20Housing%20and%20Health.pdf [accessed 5 November 2008].

Robert Wood Johnson Foundation Commission to Build a Healthier America. (2008b). Issue Brief: Neighborhoods and Health. Available at http://www.commissiononhealth.org/PDF/fff21abf-e208–46dd-a110-e757c3c6cdd7/Issue%20Brief%203%20Sept%2008%20-%20Neighborhoods%20and%20Health.pdf[accessed 5 November 2008].

Rothstein, M. A. (2002). Rethinking the Meaning of Public Health. *American Journal of Law, Medicine & Ethics*, **30**, 144–149.

Sainsbury, R. M. (1995). *Paradoxes*, 2nd edn. Cambridge, UK: Cambridge University Press.

Shakespeare, T. (1999). Losing the Plot? Medical and Activist Discourses of Contemporary Genetics and Disability. *Sociology of Health & Illness*, **21**, 669–688.

Marmot, M. and Wilkinson. R. G. (eds) (2006). *Social Determinants of Health*, 2nd edn. New York: Oxford University Press.

Berkman, L. F. and Kawachi. I. (eds) (2000). *Social Epidemiology*. New York: Oxford University Press.

Sreenivasan, G. (2007). Health Care and Equality of Opportunity. *Hastings Center Report*, **37**, 21–31.

Starfield, B., Hyde, J., Gérvas, J. and Heath, I. (2008). The Concept of Prevention: A Good Idea Gone Astray? *Journal of Epidemiology and Community Health*, **62**, 580–583.

Stern, A. M. (1998). Making Better Babies: Public Health and Race Betterment in Indiana 1920–1935. *American Journal of Public Health*, **92**, 742–752.

Subramanian, S. V. and Kawachi, I. (2004). Income Inequality and Health: What Have We Learned Thus Far? *Epidemiologic Reviews*, **26**, 78–91.

Subramanian, S. V. and Kawachi, I. (2006). Being Well and Doing Well: On the Importance of Income for Health. *International Journal of Social Welfare*, **15**(S1), S13–S22.

Taylor, C. (1989). *Sources of the Self: The Making of Modern Identity*. Cambridge, MA: Harvard University Press.

Taylor, C. (1995). Irreducibly Social Goods. In Taylor, C. (ed), *Philosophical Arguments*. Cambridge, MA: Harvard University Press, pp. 127–145.

Tesh, S. (1995). Miasma and 'Social Factors' in Disease Causality. *Journal of Health Politics, Policy, and Law*, **20**, 1001–1024.

The Milken Institute. (2007). *An Unhealthy America: The Burden of Chronic Disease*.

Longmore, P. K. and Umansky, L. (eds) (2001). *The New Disability History: American Perspectives*. New York: New York University Press.

The *PLoS Medicine* Editors, Stonington, S. and Holmes, S. M. (2006). Social Medicine in the Twenty-First Century. *PLoS Medicine*, **3**, e445.

Verweij, M. and Dawson, A. (2007). The Meaning of 'Public' in 'Public Health'. In Dawson, A. and Verweij, M. (eds), *Ethics, Prevention, and Public Health*. New York: Oxford University Press, pp. 13–29.

Warner, J. H. and Tighe, J. (eds) (2001). *Major Problems in the History of American Medicine and Public Health*. Boston: Houghton Mifflin Press.

Wilkinson, R. G. (2006). Ourselves and Others—For Better or Worse: Social Vulnerability and Inequality. In Marmot, M. and Wilkinson, R. G. (eds), *Social Determinants of Health*, 2nd edn. New York: Oxford University Press, pp. 341–358.