Social Inequalities and Their Effect on Health and Well-Being

INCOME INEQUALITY, SOCIAL COHESION, AND CLASS RELATIONS: A CRITIQUE OF WILKINSON'S NEO-DURKHEIMIAN RESEARCH PROGRAM

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Wilkinson's "income inequality and social cohesion" model has emerged as a leading research program in social epidemiology. Public health scholars and activists working toward the elimination of social inequalities in health can find several appealing features in Wilkinson's research. In particular, it provides a sociological alternative to former models that emphasize poverty, health behaviors, or the cultural aspects of social relations as determinants of population health. Wilkinson's model calls for social explanations, avoids the subjectivist legacy of U.S. functionalist sociology that is evident in "status" approaches to understanding social inequalities in health, and calls for broad policies of income redistribution. Nevertheless, Wilkinson's research program has characteristics that limit its explanatory power and its ability to inform social policies directed toward reducing social inequalities in health. The model ignores class relations, an approach that might help explain how income inequalities are generated and account for both relative and absolute deprivation. Furthermore, Wilkinson's model implies that social cohesion rather than political change is the major determinant of population health. Historical evidence suggests that class formation could determine both reductions in social inequalities and increases in social cohesion. Drawing on recent examples, the authors argue that an emphasis on social cohesion can be used to render communities responsible for their mortality and morbidity rates: a community-level version of "blaming the victim." Such use of social cohesion is related to current policy initiatives in the United States and Britain under the New Democrat and New Labor governments.

Research on social inequalities is going through a period of resurgence in public health and epidemiology. Using the MEDLINE database of biomedical publications, Lynch and Kaplan have recently noted a steep increase during the last ten years in the number of articles per month that list social class, socioeconomic

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factors, income, or poverty as descriptors. Although the relevance of class analysis (e.g., pragmatic, functionalist, neo-Weberian, or neo-Marxist) is still debated in epidemiology (2–4) (along with other forms of research on social inequalities such as those due to gender, race/ethnicity, age, migration, or sexual orientation), the growing evidence of an increasing polarization of the U.S. social structure in terms of gradational measures of class (i.e., income, wealth) (5, 6) has become difficult to ignore. There are several possible explanations for the "class denial" that affected the biomedical and public health literatures between the mid-1970s and the mid-1980s. Political changes in the control of government funding can have a major impact on the content of scientific production. During the 1980s, the Reagan administration launched a backlash against social science in the government (7). For example, the National Institutes of Health section headed by Elliot Liebow that had funded research on social inequalities (studies on economic cycles, unemployment, and health) (8) was shut down. In spite of notable exceptions (9), few government epidemiologists and demographers conducted studies on social inequalities in health in the 1980s. Indeed, some of the most influential articles in the early 1990s by U.S. researchers came from other disciplines (10, 11). The British Black report (12, 13) could be considered the milestone that helped spur this new interest in class inequalities in health. Ten years later, in the early 1990s, several studies based on data collected at the National Center of Health Statistics provided evidence that class inequalities in health were substantial in the United States as well (10, 11). It is within this period of resurgence that Wilkinson and other investigators in Europe and the United States have built an original research program on social inequalities in health (14).

The main thrust of the program's empirical studies involves correlations between national mortality and morbidity rates and national measures of income inequality (e.g., Gini coefficient, percent share of total household income received by the least well-off 50 percent of the population), which are typically strong (correlations range between .6 and .8) (14, 15). A second aspect of this research program is the attribution of the effects of income inequality on population health to the breakdown of social cohesion (e.g., cooperation, reciprocity, trust, civic participation), in the Durkheimian[1] tradition of social integration and suicide. Although the relationship between income inequality and health is backed up by many empirical studies, the role of social cohesion as mediator of

[1] Wilkinson's program can be characterized as "neo-Durkheimian" (e.g., 14, pp. 15, 170–172) because of its emphasis on solidarity and morality (i.e., social cohesion) and health and its use of social\~facts (i.e., national mortality rates) (see 16). This characterization is a stereotype, such as "neo-Weberian" or "neo-Marxian," but helps in tracing some relevant antecedents of Wilkinson's research. Wilkinson's model appeals to social facts such as the national distribution of income and the density of a social network rather than to individual characteristics (a person's income, a person's sociability score). Ecological studies are also part of the history of social epidemiology in the United States (17, 18). For example, social epidemiologists have studied aggregated social indicators (e.g., unemployment rate) in relation to morbidity and mortality rates (19).

this relationship is mostly an untested hypothesis, to which Wilkinson arrives after reviewing a large body of research on social relations and health spanning several disciplines (including epidemiology, sociology, political science, anthropology, and behavioral neuroscience). However, recent work by Kawachi and colleagues (20, 21) provides some empirical support for the idea that social cohesion (i.e., organization membership) mediates the effects of income inequality on health.

In the following sections we begin by reviewing several contributions of Wilkinson's model on income inequality and social cohesion to the field of social inequalities in health. We then propose several amendments to the model, drawing mostly from research on class relations and class formation.

CONTRIBUTIONS OF WILKINSON'S MODEL OF INCOME INEQUALITY AND SOCIAL COHESION

An important contribution of Wilkinson's model is that it provides a sociological alternative to other explanations for social inequalities in health that have emphasized health behaviors such as smoking, overweight, drinking alcohol, using drugs, and being sedentary (e.g., 22, 23), in particular among the poor (24), or that advance subjective interpretations for social inequalities based on perceived status or prestige (e.g., 25). Income inequality is an emergent property of populations, a social fact that cannot be attributed to any single person, as income inequality only emerges from relations among individuals. Income inequality can only be defined in relational terms—it is literally the income or share of income of an individual or group relative to another individual or group (26). However, most research on income and health in the United States has looked exclusively at the health effects of low absolute levels of income (i.e., poverty) while reducing the health effects of poverty to personal attributes (such as culture of poverty, genetic or racial inferiority, low self-esteem, lack of "values," inability to delay gratification) (27, 28).

Wilkinson's analyses of developed capitalist countries that have gone through the epidemiologic transition (e.g., Europe, Japan, the United States, Canada, Australia) show that population health is strongly associated with the distribution of income, even after taking into account average disposable personal income, absolute levels of poverty, smoking, racial differences, and provision of health services. In these countries, relative income is more closely associated with mortality within countries than are absolute income differences between them (14). (An exception is research by Judge and colleagues (29) which finds little support for an association between income inequality and mortality in rich nations.) Income inequality has also been associated with mortality in some poor countries. For example, in a combined analysis of rich and poor countries, Waldmann (30) found that comparing countries where the income of the poor is equal, those where the rich are wealthier are more likely to have higher infant mortality rates. Studies

on income inequality also confirm that behavioral risk factors (e.g., smoking) are minor determinants of the social gradient in mortality (14, Chapt. 5).

When looking for explanations for the effects of income inequality on individuals, Wilkinson follows his own data-driven approach by examining findings from a variety of disciplines (research on social change, social capital, social isolation, child development, and stress, among other topics). He rejects some of the assumptions about human behavior associated with rational choice (e.g., that people behave only in pursuit of self-interest) (14, pp. 25, 145, 211).[2] Wilkinson's stance is important as rational choice has dominated theory on social inequalities during recent decades (31–33). Wilkinson's own empiricist inclination leads him toward social psychology when searching for the consequences of income inequality among individuals (e.g., social isolation) and rejecting a model of human behavior with weak empirical support (34–37) that has often been used to justify social inequalities.

Another major contribution of Wilkinson's work is that he has established a realist alternative to the use of socioeconomic status in contemporary social epidemiology. Research on social inequalities in health can now concentrate on income inequality or other objective indicators of social inequalities (38, 39), rather than perceptions of status, control, or prestige. Concepts of status and prestige refer to subjectively perceived social ranking (40) rather than to objective inequalities as measured by income or credentials (e.g., 11 years of schooling signals lack of a high school diploma) that are independent of respondents' perceptions.[3] In spite of high correlations between socioeconomic status, income, and occupational prestige[4] and the availability of composite measures of status that incorporate income (41), using income inequality is important as status conveys the notion that social inequalities are not real, or blurs the distinction between objective and subjective inequalities (38).

[2] The assumptions of rational choice vary among social scientists. They can encompass complex attributes such as cognitive proficiency, utility maximization, and autonomy (e.g., 31), or restrict assumptions to a minimum such as in "persons have at any point in time a set of ranked options for action and they choose the one that ranks first" (Roemer, personal communication).

[3] When researchers do not provide a rationale for what determines differences in education or income, they probably should use terms such as "social stratification" that do not convey the subjective nature of status. The functionalist school in American sociology has used measures of socioeconomic status based on the regression of income and education on occupational prestige scores. One could understand this practice in an academic environment that had trouble admitting the reality of social inequalities in health. Contemporary research on social inequalities in health already uses objective indicators (e.g., 38, 39). Furthermore, grouping major indicators of social stratification in a single concept precludes the understanding of their independent effects on mortality (e.g., 9). Nevertheless, perceptions of inequality are interesting in their own right (because of the "availability heuristic" people tend to over-represent the proportion of individuals in their own strata) (40).

[4] Wilkinson makes a distinction between status and income when he describes Eastern Europe (e.g., 14, p. 126) where wages of manual workers could be higher than those of white-collar workers.

Although Wilkinson concludes that what matters most for determining the health of populations is the quality of social relations (i.e., social cohesion) (14, p. 211), a public health implication of his research is that income should be redistributed more equitably to reduce mortality and morbidity rates. This epidemiologic evidence that supports an egalitarian distribution of national incomes is a welcome addition to health policy recommendations that target poverty (42–44). Thus, research on social facts leads to different social policies than research on health behaviors (14, pp. 184–185). Drawing on Rose's work on the failure of the high-risk approach to prevention (e.g., the number of people at high risk for dementia in a population is a function of the average cognitive ability in the whole population) (14, p. 19), Wilkinson presents a compelling case against the risk behavior approach to prevention (e.g., 45) while advocating the reduction of income inequalities.

A CRITICAL APPRAISAL OF THE INCOME INEQUALITY AND SOCIAL COHESION MODEL

Income Inequality

International Relations, Income Inequalities, and Health. By restricting its analysis of income inequalities to Europe and the United States, Wilkinson's model does not explain how the large international (between-country) variation of income affects the health of nations. More "developed" countries constitute only about one-fifth of the world's total population (46). (Wilkinson's terminology of "developed" and "developing" countries (development theory) implies that the latter will reach the living standard of the former, a hypothesis disputed by several rival theories (e.g., 47).) Wilkinson's rationale is that developed countries have passed through the epidemiologic transition from infectious diseases to noncommunicable diseases. This choice omits that some infectious diseases have re-emerged in developed countries (e.g., tuberculosis) (48) during the last decades, which have been marked by increases in income inequalities and poverty (49). In addition, "developing" regions suffer from noncommunicable diseases as well. The probability of death from noncommunicable diseases is higher in poor sub-Saharan countries than in wealthy countries (50). These data challenge a benevolent, evolutionary view of population health transitions and call for international models of social inequalities in health. The analysis of trends in the international distribution of income between the 1960s and the 1990s shows that between-country income inequality, rather than within-country, is the most important factor in world income inequality (51).

Several sociological theories have been proposed to explain world social inequalities: imperialism, dependency theory, world-system theory, and globalization (the latter being distinct from the rhetoric of "globalization" in which an increasingly competitive international economy renders futile the policymaking efforts of local governments (52)) (53–56). For example, world-system theory

has provided evidence that becoming peripheral in the international division of labor produces social conflict through income inequality (57). The negative health effects of transfers of resources between empires and their colonized countries, between core and peripheral countries, and between debt-ridden countries and the International Monetary Fund have also been documented (e.g., 58–60). Nevertheless, the income inequality and social cohesion model ignores the impact of international economic relations on levels of income inequality within nations.

Class Relations and Income Inequality. Although income inequality, an indicator of social stratification, is a strong predictor of mortality and morbidity rates, a model of social inequalities in health should address the social mechanisms that generate income inequality in the first place (61). In Wilkinson's analysis it is the receipt of income that is important, not the way income was generated. In this way, the model linking income inequality, social cohesion, and health is based on how income is used to consume various social goods rather than on how income results from particular production relations (e.g., 14, pp. 191, 211).[5] In Wilkinson's framework, Bill Gates's class position is characterized more by his capacity to buy a Leonardo da Vinci masterpiece than by his being a founder, director, and major shareholder of Microsoft. (That high income predisposes to a sort of consumer pathology (14, p. 191) is far from evident, however; a recent survey of U.S. millionaires shows their patterns of consumption to be *relatively* restrained (63).) The "starting fact" for Wilkinson's model is that by some process (which he does not discuss) income is distributed unevenly and that this has consequences for health. Theories of social stratification and class analysis seek to explain how relational positions in a social system (social formation in neo-Marxian terminology) generate income inequalities (64–66).[6] Different positions in production relations (e.g., moneylender, landlord, manager, worker) generate various sources of income (e.g., much greater income can be generated from the position of manager than that of worker; see the Appendix for an example of a social system with some class, political, and cultural relations). Although any class location can receive low incomes (e.g., there are many

[5] Absent from the income inequality and social cohesion model is any substantial reference to occupational health (i.e., the impact of the labor process on health at the point of production). Thus a main difference between "occupational hazards" and "labor process" approaches is that in the former, the connection to class relations is ignored, while occupational deaths, injuries, and illnesses are under-reported and understudied (62).

[6] For example, Robinson and Kelley's neo-Marxian model of the consequences of ownership and authority relations for income synthesizes production relations (ownership of the means of production) with authority relations. The basic form of their model specification is as follows (65):

$$Yi = Bo + B1Oi + B2Ai + ui$$

where Yi is earnings, O is a capitalist ownership variable (coded 1 for owners who hire labor and 0 otherwise), and A is an authority variable based on a scaling of supervisory rank (coded 0 for nonsupervisors, 1 for supervisors whose subordinates are nonsupervisors, and 2 for supervisors whose subordinates are also supervisors). See 67 for the health effects of the dimensional and categorical aspects of class relations.

poor business owners) (68), high income and wealth are overwhelmingly associated with capital ownership in capitalist economic systems (69).

Central to Marxian class analysis is the concept of exploitation that provides a social mechanism for explaining how income inequalities are generated. There are several non-Marxian (e.g., commonsense such as "taking unfair advantage of someone else's labor," Saint-Simonian, Lutheran, Lockean) and Marxian (e.g., neo-Marxist and classical) notions of exploitation. Among the most prominent neo-Marxist notions of exploitation we find Roemer's and Wright's. In brief, Roemer maintains that exploitation is generated by an unequal distribution of productive assets among rational actors (i.e., property relations). Following Roemer's 1982 theory (33), in a society divided into two groups, S and its complement S', S is exploited and S' is exploiting if S would be better off if it withdrew with its per capita share of productive, alienable assets; S' would be worse off if it withdrew with its per capita share of productive, alienable assets; and S' would be worse off if S withdrew from society with its own assets. Roemer (70) has since amended this definition in response to several criticisms (such as, his definition did not capture the relation of domination between exploiter and exploited and did not mention labor). Wright's definition of exploitation precisely includes these two factors (domination and labor). According to Wright (66), class exploitation occurs when: (*a) the material welfare of a social group causally depends* on the material deprivation of another; (*b*) the causal relation in (*a*) involves the asymmetrical exclusion of the exploited from access to certain productive resources, usually backed by force in the form of broadly defined property rights; and (*c*) the causal mechanism that translates exclusion in (*b*) into differential health and welfare involves the appropriation of the fruits of labor of the exploited by those who control the relevant productive resources (without implying that the value of what labor produces is exclusively determined by labor effort).

The "classical" or "traditional" view of exploitation[7] is of particular interest here because of the body of empirical tests to which it has been submitted (e.g., 72). "Classical" Marxism starts with a theory of value (the Labor Theory of Value) that leads to a theory of exploitation. In Marxian terms, class is defined as the process of producing, appropriating, and distributing surplus labor (73). Laborers perform a certain amount of labor that is sufficient to produce the goods and services that their current standard of living requires (necessary labor). Nevertheless, laborers perform more than this necessary labor (surplus labor), which might be retained by laborers or, alternatively, might be appropriated by non-laborers (exploitation). Exploitation thus occurs when the class process - involves appropriation of the surplus labor of laborers by non-laborers (73). Thus,

[7] Although this notion of exploitation usually refers to Marx's version of the Labor Theory of Value, it also encompasses recent developments such as the "New Solution" to the transformation problem which deals with the quantitative relation between labor values and prices (71).

exploitation can be quantified through the ratio of *s* (surplus value), the size of the difference between the necessary labor time embodied in the commodities produced by workers, to *v* (variable capital) that is embodied in their wages. This rate of exploitation, *s/v*, is hypothesized to determine the rate of profit, $s/(c + v)$, where *c* is "constant capital," or the necessary labor time that went into producing factories, materials, and equipment used by labor in production.[8]

Class exploitation can be measured at different levels (such as individual, neighborhood, national). For example, an indicator of class exploitation (the ratio of the total value added in the manufacturing sector to wages and salaries in the manufacturing sector) at the national level has been used to predict violent rebellion (72). However, even if the association between a class-based measure of exploitation and mortality rates were weaker than with income inequality, it does not mean that the class-based measure lacks heuristic value. In fact, a measure of exploitation based on value added to wage ratios may be preferable because the rate of exploitation provides an explicit social mechanism, while income inequality does not.

Various economic, political, and demographic explanations have been proposed to account for the extent and increases in income inequality. The economic explanations typically involve a variety of social class concepts that are implicitly Weberian or Marxian (explanations based on demographic factors and racial segregation have also been proposed (5, 74, 75)). For example, the increase of income inequality in the United States has been attributed to several factors, including: a shift toward a service sector economy that generates both high-wage and low-wage jobs, and declines in middle-wage jobs (76); the segmentation of the labor market (77); a steady increase in the demand for skilled workers relative to unskilled workers between and within industries (5, 78); the internationalization of financial markets and the relative decline in manufacturing jobs (79); and technological change and its consequences (e.g., computerization) (74). Most recently, Galbraith (80) has argued that U.S. income inequality results from U.S. government monetarist policies that have used high interest rates to control inflation while producing a series of recessions that led to high unemployment, which in turn resulted in wage inequality. Another set of explanations has emphasized political factors (e.g., class formation, the formation of class-based organizations acting in their economic and political interest) in the surge of income inequality. Among them we find: decline in union density (81–83); changes in fair labor practice rules (83); social policies such as cutbacks in income transfers (84); and political decisions such as changes in capital gain taxes and state corporate tax laws that promote an "investor

[8] The rate of profit is hypothesized to vary with the rate of exploitation and inversely with the "organic composition of capital" (*c/v*), or the ratio of "constant capital" to "variable capital": $s / (c + v) = s/v / (c + v)/v = s/v / (c/v) + (v/v) = s/v / (c/v) + 1$ = rate of surplus value/organic composition of capital + 1.

capitalism" strategy of low wages and high capital return (83). Many authors provide models that integrate these political and economic factors (e.g., 75, 77). The income inequality and social cohesion model cannot deal with these explanations because it does not include measures of class structure (e.g., the set of class relations in a country) or political factors.

Marxian class-based explanations are preferable because they expose the social mechanisms of exploitation in a way that income distribution models cannot. In this way, Marxian class analysis of the labor process is even deeper than Weberian class analysis as the former links exchanges in the labor market and production through the concept of exploitation, while Weberian class analyses keep labor market exchanges and production separate (66, p. 34). Such a Weberian approach is evident in social epidemiology, where research into the health effects of work stress and work organization have been conceptualized as independent of social class (e.g., 85).

Social Cohesion

The Concept of Social Cohesion. Over and above income inequality, the construct of "social cohesion," as played out through social trust, reciprocity, and concern for the well-being of one's community, is the cornerstone of Wilkinson's model (14, p. 211). As with many psychosocial constructs, social cohesion is intuitively appealing, but it is difficult to define (86). Following the work of Putnam (87) in Italy, Wilkinson defines social cohesion as participation in public affairs, civic responsibility, or involvement in public life (the social cohesion of the ex-communists in northern Italian regions). Social cohesion can be measured with indicators of voting participation, newspaper readership, or number of cultural voluntary associations (14, pp. 119–120). Somewhat curiously, although social cohesion should (by definition) deal with social relations, most of the aspects of social cohesion discussed by Wilkinson pertain to individual psychological attributes (such as emotions, stress, attributions, helplessness, motivation, self-perception, disrespect)[9] rather than indicators of relations per se.

[9] Wilkinson explains people's belief in the universality of self-interest and the emotional basis of individualism as rooted in erroneous attributions about the causes of human behavior (market relations make people behave selfishly, and people perceive that behavior as human nature) (14, p. 145). To show that emotions are socially determined, Wilkinson presents an example from a social cognitive theory of emotion. This theory originated in the clinical observations of Gregorio Marañon, a clinician close to the Francoist (fascist) regime in Spain. In the early 1960s, U.S. psychologists Schachter and Singer (88) conducted an experiment showing that the arousal induced by adrenaline was experienced emotionally by experimental subjects in accordance with the emotion (joy or anger) displayed by a confederate with whom the subjects were sharing a room. But Wilkinson does not reveal that in the experiment, subjects who were told to expect being aroused could explain the arousal as an effect of the drug. Thus, contrary to what Wilkinson seems to believe, most emotions are not a matter of cognitive interpretation but are rooted in objective material contingencies over time (e.g., Pavlov; 89, 90).

Moreover, lack of reference to labor unions created a "middle-class bias" in the measurement of social cohesion. Given its importance to the Wilkinson model of income inequality, it is unfortunate that he does not attempt a more rigorous definition of the construct of social cohesion, and settles for "the social nature of public life" (14, p. 146).

One way social cohesion could be defined would be the amount of individual participation in social groups in the community. Following this definition we suggest that social cohesion is not always good for the health of populations, contrary to what Wilkinson implies (i.e., more social cohesion produces better population health). We suggest that the relation between social cohesion and health is more likely to follow an inverted U shape. No participation, as in the many examples provided by Wilkinson, produces social isolation and its associated health hazards (e.g., suicide). On the other hand a society with no internal divisions into social groups, a uniform society with massive participation, will also have negative effects on health. (Actually, a society with no social group divisions will be like a collection of competitors (91).) Optimal social cohesion (i.e., without political coercion) will be more likely to happen at intermediate levels of participation (91).[10] Recently, Lynch and Kaplan (1) have noted that the hypothesis of social cohesion does not contemplate the fact that some of the most unhealthy societies in this century have been highly cohesive and that this hypothesis runs the risk of idealizing a communal past that never existed. Some fascist societies, most notably Nazi Germany, were characterized by high levels of participation, as mobilization was used as a form of social control (92). Nazi culture was indeed characterized by the idea of a single, undivided, and total People's Community (93). Any beneficial effect of social cohesion on health (such as anti-smoking campaigns) was definitely offset by the many other consequences of Nazi mass participation. A recent example that social cohesion is not always desirable stems from research on the AIDS epidemic in the United States, where the subjective experience of integration into social networks among men at risk for AIDS was associated with distress rather than with its reduction, as the social integration hypothesis would predict (94).

As discussed earlier in regard to income inequality, Wilkinson's model does not contemplate the relation between class and social cohesion. For example, political sociologists using the resource mobilization model have shown that members of the middle class have more time and resources to devote to civic participation than do members of the working class (95). Furthermore, in spite of Wilkinson's claim that market economies undermine social cohesion, the capitalist class (wealthy owners of capital) has been described as particularly cohesive

[10] The collection of social groups is the social structure of a society. A measure of the degree of differentiation of a society will be the sum of all the differences between social groups A and B of the form $(A \cap \neg B) \cup (\neg A \cap B)$.

by political sociologists (e.g., forming "inner-circle" cliques) (96). This omission of the relationship between social class and social cohesion is vulnerable to methodological problems similar to those signaled for income inequality. However, Wilkinson is probably right that capitalist economies produce conditions of income inequality that have negative effects on interpersonal relations, but the most important point is that these negative effects will not be evenly distributed across the population. As with other aspects of capitalist political and economic relations, disease rates linked to interpersonal relations will be higher among the working class and, in particular, among its female and non-white segments.

Wilkinson argues that the relation between social cohesion and health reveals an anthropological disposition toward equality and social cohesion.[11] He builds his evidence through reviewing research conducted in boundary disciplines, such as anthropology, social psychology, behavioral neuroscience, political science, and history. However, Wilkinson's argument is not fully convincing. For example, many of the supposedly egalitarian primitive societies studied by anthropologists (such as hunter-gatherers) have some elements of gender and age hierarchies (97). Wilkinson also does not mention the controversy surrounding Power's ethological research on the alleged egalitarian nature of chimpanzee social organization (98, 99). Overall, the examples provided by Wilkinson cast doubt on the universality of competition in human societies, but they do not prove that cooperation is a natural state in all human societies. One aspect that Wilkinson does not highlight is that most cohesive and cooperative societies not only are more egalitarian but are characterized by non-capitalist modes of production (100).

Political Change, Class Formation, Social Cohesion, and Health. A significant characteristic of the "income inequality and social cohesion model" is the absence of politics as a determinant of population health. Even when reviewing the historical transformation of the Soviet Union, changes in population health are interpreted as the consequence of a breakdown in social cohesion, rather than changes in the mode of production (i.e., from state socialism to some form of capitalism) (14, pp. 121–130). Even taking into account that social inequalities in Russia had been building before privatization (101), during the two years after the failed coup of 1991 half of the country's assets were transferred from state to private hands (102). Also, during the early 1990s, Russian life expectancy dropped sharply (a five-year decline between 1990 and 1994) (103). It is reasonable to expect that these major changes in class relations might have had an influence on national mortality and morbidity rates over and above social cohesion (such as participation in civic activities, membership in cultural community orga-

[11] Wilkinson's appealing, but not entirely convincing, "left sociobiology" is reminiscent of Koprotkin's in the 19th century.

nizations) (see 104). It seems parsimonious to suggest that the breakdown in social cohesion has been only one of several proximal mediators of the effects of political change on population health (105). The 20th century has provided several examples of significant changes in mortality and morbidity rates in countries that went through political revolutions (e.g., Cuba) (18, 106) or substantial changes in legislation brought about by elected governments (such as the United Kingdom (18) and Kerala (107)). Class formation played a pivotal role in many of these political transformations. For example, the political power achieved by the working class through worker mobilization was a key determinant in establishing European welfare states (108).

The Political Uses of Social Cohesion. Models that emphasize social cohesion as a potential determinant of population health have consequences for social and health policy (14, pp. 26–28). One is to downplay the beneficial role of medical care and social services in the determination of population health (e.g., 18, 109, 110). Although the advantageous effect of medical care on national mortality rates and life expectancy is smaller than that of other social factors, access to medical care is important in reducing mortality and morbidity rates and improving quality of life. In the United States, the contribution of medical care has been estimated to add 1.5 years of life for clinical preventive services and 3.5 to 4 years for curative services (111).

Wilkinson's major hypothesis places income inequality as a main determinant of social cohesion. Although reduction in income inequalities is a central piece of Wilkinson's policy recommendations, his views on its implications for increasing social cohesion/health are not shared by current U.S. and U.K. administrations and their associated scholars (112). In the United States, scholars and government officials during the New Democrat administration, while deeply aware of income inequalities, stress the need for increasing community social cohesion as an *alternative* to reductions in income inequality, either through taxation or state transfers (24, 113–117). Parallel developments have been noted in the United Kingdom under New Labour's "third way" (118–122). Among the policies that have been proposed to build social cohesion in communities we find community policing (114); non-standard, "flexible" work arrangements (115); involvement in *local* politics (although former Secretary of Labor Robert Reich also recommends progressive income taxation and minimum health insurance for employees) (116); and charities, nongovernmental organizations, and moralistic government programs (24, 60, 120, 121).

Thus the consequence of an emphasis on the necessity for communities to be socially cohesive, combined with a downplay of measures aimed at reducing income inequality, makes communities ultimately responsible for their health (e.g., 117, 123). As U.S. deprived and segregated working-class communities often lack the political and economic resources that ensure the social cohesion of the middle class (95), the result is a "blaming the community" model (124) that

can easily justify the need for more policing and other forms of government control of working-class communities (119). In the absence of detailed social mechanisms linked to class, gender, and race relations, it is easy to default to a community "responsibility" rhetoric that places the burden of reducing inequalities in health on the capacity of communities to be cohesive (e.g., 117). No model of income inequality and social cohesion that is conceived within a public health framework should be open to the interpretation that intervening to build social cohesion in communities is an "equal weight" alternative to more fundamental political and economic changes needed to alter income distribution itself. Indeed, it is worth pondering that the likely public health benefits of interventions designed to improve social cohesion will leave untouched more fundamental economic and political relations.

CONCLUSION

In spite of providing a large body of data on the association between economic inequality and health, the "income inequality and social cohesion" model lacks depth with regard to other sociological alternatives (such as class relations, class formation). The first determinant of population health in Wilkinson's model is defined by the distribution of income, while the second and most important determinant in this model is the theoretical construct of social cohesion that affects health through many different mechanisms, most of them psychological. Wilkinson has made important contributions to our understanding of the determinants of population health through his focus on income inequality, but faithful to the Durkheimian tradition, his model shies away from the central issue of what produces economic inequality in the first place. Neo-Marxian (e.g., control over productive assets) and even neo-Weberian (e.g., labor market position) models provide social mechanisms that explain why income inequality occurs. Marxian models also make an explicit linkage between ill-health and how economic inequality is generated through exploitation within the labor process. In addition, exploitation implies a structural conflict among classes that limits the amount of social cohesion achievable through income redistribution alone. Neo-Marxian and neo-Weberian models thus have more potential to explain a wider range of social phenomena linked to ill-health than do neo-Durkheimian models of social integration. Social cohesion, the construct in Wilkinson's model, is itself the consequence of social relations (here more broadly defined as economic, political, and cultural relations) that are absent from the income inequality/social cohesion model. For example, gender discrimination in wages, political underrepresentation of minorities, or negative stereotypes about the abilities of nonprofessionals might limit the degree of cohesion within populations due to their impact on economic, political, and cultural relations. While Wilkinson's model does not lay out the social mechanisms that might

determine social cohesion (economic, political, and cultural), this construct becomes key as a hypothesized mediator of the effects of income inequality.

We believe that the construct of "social cohesion" can easily be used to fit explanations that are the sociological equivalent of "blaming the victim," where communities, rather than individuals, are held accountable for "not coming together" or "being disorganized." For example, it is not unusual to hear members of both the Clinton and Blair administrations calling for more community cohesion at the same time that they are delivering economic policies that increase income inequality. More and better indicators of income inequality are not substitutes for an understanding of how social inequalities occur (such as class, gender, and race relations). Neither are constructs such as "social cohesion" likely to constitute an alternative explanation to political processes that historically have had a major impact on population health. Richard Wilkinson is to be congratulated for focusing attention on income inequality as a determinant of population health. His book has provided a basis for a continuing debate that could result in more comprehensive models that include how inequalities are generated in the first place and that more clearly define the social mechanisms through which economic inequalities affect population health.

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APPENDIX: EXAMPLE OF A SOCIAL SYSTEM

The following is an example of a social system. It does not pretend to include all class relations of any society (e.g., household class relations and gender and racial relations are not included). Similarly, the treatment of political and cultural relations is limited and could be substituted by many more elaborate conceptualizations. This formalization only attempts to provide a blueprint for the study of the income-generating class relations in societies as an alternative to single dimensional frameworks such as Wilkinson's.

SOCIAL SYSTEM

$S = <p \cup q, Env, E \cup C \cup P>$

where p and q are the components (persons); *Env* is the physical and material environment (state, firm, household); *E, C,* and *P* are economic, cultural, and political relations, respectively. (For example, singing a tune involves a cultural—artistic—relation; selling the CD involves an economic relation; and having a law prohibiting the use of certain sentences in the song involves a political relation.) Here we develop the example of class relations following the Marxian model of Resnick and Wolff (73), although other relational class frameworks could have been used, such as Wright's (125).

SOCIAL SUBSYSTEMS

Economic Subsystem

$$Es = <p_e^{1\,jk} \cup p_e^{2\,jk} \cup p_e^{3\,jk} \cup p_e^{4\,jk} \cup p_e^{5\,jk}, Env, E_{fcp,m,n} \cup E_{scp,m,n} \cup E_{a,m,n}>$$

Economic (Class and Non-Class) Positions of Persons

p_e^1 = *productive capitalist* (e.g., an industrial capitalist).[12] Anyone who makes his or her money expand in value by directly appropriating the surplus produced by productive workers; participates in the fundamental class process.

p_e^2 = *unproductive capitalist* (e.g., unproductive banker, landowner, wholesale trader, monopolist). Anyone who expands his or her value in any manner other than directly appropriating productive laborers' surpluses; participates in subsumed class or non-class economic processes. For example, a banker who lends at interest to a productive capitalist sees his value expand (because he gets back his principal plus interest), but such a banker does not appropriate any productive laborer's surplus. The industrial/productive capitalist to whom the banker lends distributes a portion of what she appropriates to the banker as interest (a subsumed class payment). If this banker also lends at interest to workers, his value expands: he is an "unproductive capitalist" whose interest receipts are not a subsumed class payment, but rather a non-class payment.

p_e^3 = *productive laborer* (e.g., productive miner, cook, construction worker, assembly line worker, computer engineer). Anyone who usually sells his or her labor power to industrial capitalists and produces surplus labor appropriated by productive capitalists; participates in the fundamental class process. Capitalism usually requires the sale of labor power as a commodity, but that does not make it always or necessarily the case. If, for example, some state agency allocated productive workers to various productive capitalists at assigned wages, they would still produce surplus appropriated by such productive capitalists notwithstanding the absence of a market in labor power (this has happened in wartime situations).

p_e^4 = *unproductive laborer* (e.g., unproductive bank teller, post office clerk, private household laborer, corporate lawyer, manager). Anyone who performs labor but does not perform surplus labor appropriated by a capitalist; participates in subsumed or non-class processes.

[12] The distinction between "productive" and "unproductive" labor follows Resnick and Wolff's (73) terminology (see 126, 127 for alternative positions on the productive/unproductive distinction).

p_e^5 = *ancient laborer* (e.g., self-employed/"petit bourgeois" M.D., lawyer). A productive laborer who appropriates his or her own individual surplus; participates in the ancient class process.

q_e = *consumers* (recipients of economic production). These could be disaggregated into class positions.

Environment

Env (household, firm, state)

Economic (Class and Non-Class) Processes[13]

E_{fcp} = *fundamental class processes*. Economic process of production and appropriation of surplus labor that is embodied in a surplus product. Only productive capitalists and productive laborers participate in this process. The fundamental class process refers to performing surplus labor that is embodied in a surplus product. It is a different matter whether or not that surplus product acquires a "value" by passing through the non-class process of market exchange. In other words, surplus products may, but need not, acquire the additional status of surplus value depending on whether class processes occur in a society that also displays market exchange processes for the products of such surplus labor. When a worker sells labor power for a wage, that is an exchange process, not a class process. Hence we cannot infer whether a worker participates in a class process or how he or she participates from the fact that a commodity exchange process (i.e., labor power for money) has occurred.

E_{scp} = *subsumed class process*. Economic process of distribution of surplus labor. Productive capitalists are distributors in this process; unproductive capitalists and unproductive workers are recipients of this distributed surplus labor.

E_{ncp} = *non-class process*. All economic processes that are not directly related to the production, appropriation, or distribution of surplus labor. Unproductive capitalists and unproductive laborers participate in this process in which no surplus labor is being produced, appropriated, or distributed.

E_a = *ancient class process*. Economic process in which the laborer appropriates her or his own surplus labor. Only ancient laborers (i.e., self-employed, petit-bourgeois) participate in this process.

Cultural Subsystem

$$Cs = <p_c^{ij1} \cup p_c^{ij2} \cup q_c, Env, C_{art,1,m} \cup C_{sci,1,m} \cup C_{id,1,m}>$$

[13] In Resnick and Wolff's (73) theory, non-class processes are all economic processes other than fundamental and subsumed class processes, plus all cultural processes, plus all political processes.

Cultural Positions of Persons

p_c^1 = person who performs new cultural activities (e.g., researcher, inventor, composer)

p_c^2 = person who does not produce new cultural activities (e.g., scholar, performer, interpreter, technician)

q_c = recipient of cultural activity (e.g., reader, public, audience)

Environment

Env (household, firm, state)

Cultural Processes[14]

C_{art} = artistic occupation

C_{sci} = scientific/technical occupation

C_{id} = ideological occupation

Political Subsystem

$$Ps = <p_p^{i1\,k} \cup p_p^{i2\,k} \cup p_p^{i3\,k} \cup q_p, Env, P_{rd,1,n} \cup P_{pd,1,n} \cup P_{d,1,n}>$$

Political Positions of Persons

p_p^1 = subordinate, follows orders

p_p^2 = supervisor, gives orders

p_p^3 = does not give or receive orders

q_p = recipient of political relation

Environment

Env (household, firm, state)

Political Processes

P_{rd} = representative democracy (liberal democracy)

P_{pd} = participatory democracy (anarchism)

P_d = dictatorship, authoritarian relation (fascism)

Note: A biological subsystem could be included (e.g., including kinship relations). Persons are usually involved in more than one relation within subsystems, as indicated by subscripts and superscripts (e.g., a worker who owns a 401(k) plan) (68).

[14] In Resnick and Wolff's (73) theory, all persons in a social system engage continuously in many sorts of cultural processes (via songs, speech, dance, prayer, etc.).

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