Inequalities in Health

THE SOCIAL CLASS DETERMINANTS OF INCOME INEQUALITY AND SOCIAL COHESION

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The authors argue that Wilkinson's model omits important variables (social class) that make it vulnerable to biases due to model mis-specification. Furthermore, the culture of inequality hypothesis unnecessarily "psychopathologizes" the relatively deprived while omitting social determinants of disease related to production (environmental and occupational hazards) and the capacity of the relatively deprived for collective action. In addition, the hypothesis that being "disrespected" is a fundamental determinant of violence has already been refuted. Shying away from social mechanisms such as exploitation, workplace domination, or classist ideology might avoid conflict but reduce the income inequality model to a set of useful, but simple and wanting associations. Using a nonrecursive structural equation model that tests for reciprocal effects, the authors show that working-class position is negatively associated with social cohesion but positively associated with union membership. Thus, current indicators of social cohesion use middle-class standards for collective action that working-class communities are unlikely to meet. An erroneous characterization of working-class communities as noncohesive could be used to justify paternalistic or punitive social policies. These criticisms should not detract from an acknowledgment of Wilkinson's investigations as a leading empirical contribution to reviving social epidemiology at the end of the century.

I. FURTHER COMMENTS ON WILKINSON'S REPLY

What follows is several comments on Richard Wilkinson's reply (1) to our article (2) on his "income inequality and social cohesion" model (3). Wilkinson's reply spans a review of findings on income inequality and health, an expansion of

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his hypotheses on the relation between social cohesion and health, and a reply to some of our criticisms. Because Wilkinson does not respond to a number of issues we raised—for example, international dependency as determinant of national income inequality; the role of political factors as determinants of income inequality and population health; exploitation as explanation for income inequalities; the need for formal definitions of social cohesion, functional forms of its relation with health, and the exchange aspect of social cohesion (its potential negative effects on health); the social psychology and the ethology of social cohesion; the impact of income inequality among individuals in different class locations; the policy implications of current research programs on social cohesion; and the systemic approach to social inequality—we direct the reader to the original article (2) and we concentrate here on Wilkinson's reply.

Thus, we provide new arguments for incorporating social class in models of social inequalities in health; we critically examine the support for the psychological hypotheses that Wilkinson proposes as proximal determinants of health; we challenge the notion that research on income inequalities per se generates support for reducing social inequalities; and we provide a philosophical framework that reveals some fundamental differences between the "income inequality/social cohesion" model and other models of social inequalities in health. Because Wilkinson criticizes us for not providing data[1] in our analysis on the role of social class in his model ("a bald assertion that is simply a matter of changing class relations" (1, p. 539)), we provide empirical evidence in part II of this response. In part II we show that social cohesion is shaped by class relations, and that Wilkinson's measurement of social cohesion excludes working-class forms of collective action.

INEQUALITY UNEXPLAINED

Wilkinson's reformulation of his income inequality, social cohesion, and health model still does not explain the origins of income inequality (1). In our previous critique (2) we proposed a series of economic and political determinants of income inequality, and we addressed the public health implications of placing this artificial boundary in the problem being analyzed. Thus, omission of economic and political variables that might have an impact on income inequality and population health may lead to biased estimates of the aggregate relationship between income inequality and mortality rates. The field of international studies, where social class and income inequality

[1] Epidemiologic pragmatism (e.g., as in "race" or "income" categories without hypotheses) defends itself against realism (a synthesis of rationalism and empiricism) with accusations of "lack of data." However, more data on "race inequalities in health" do not provide any explanation and precisely function as a deterrent of serious investigations on economic, political, and cultural racism (4).

are considered predictors of democratization (rather than health), provides a precedent for the current debate in public health. Following Bollen and Jackman (5):

> This omission [of direct measures of class structure] creates grave problems in interpreting the coefficient estimate for income inequality. The omitted variables are probably correlated with both income inequality and political democracy, so the coefficient for income inequality is biased. . . . Thus, although the coefficient estimate for income inequality may indicate the operation of unspecified aspects of the class structure, the exclusion of direct measures of the class structure means that we cannot judge which particular classes play key roles in the process of democratization.

For example, even crude dichotomous class categories can account for 25 percent of earnings inequalities as measured by the Theil Index (6).

A second methodological problem originates in Wilkinson's interpretations of these macro correlations (3). Ecological correlations of income inequality and mortality or morbidity rates could emerge at the aggregate level even if income inequality per se had no impact on individual mortality or morbidity risk (7). Recently, though, with the incorporation of methods that take into account the clustering of individuals into larger social units (8, 9), Sobaader (10) and Kennedy and colleagues (11) have provided evidence that income inequality indeed has an effect on individual health risk. However, in these studies, the strength of the association between income inequality is lower than typically reported by Wilkinson (3). This is in part due to the addition of aggregate (e.g., county poverty and absolute income) and individual level (e.g., income) covariates (10) and to the fact that the strength of the relation between income inequality and health depends on the level of aggregation (10). For example, the effect of census tract income inequality on individual risk of anxiety disorders can be weak because race and class segregation makes neighborhood incomes homogeneous (12).[2] This is an instance where knowledge of political and economic mechanisms, those that generate segregation above the neighborhood level, is necessary to choose the appropriate level of aggregation to test for income inequality effects.

[2] Multilevel analyses, though originally developed to estimate contextual effects, can be used to emphasize the effects of individual behavior on health (e.g., 13). In fact, survey methods, because they cannot measure the contextual nature of individual behavior itself, place the real limit on teasing apart "individual" and "social context" contributions to individual health.

On "Misconceived Materialism," "Outmoded Prejudices," and Other Red Scares

Wilkinson (1) states that our example on the recent increases in mortality in the former Soviet Union (2) implies an endorsement of the centrally planned economy that characterized that country before the "merchant capitalist" period of the 1990s. We find this inference unjustified. Our point is that a sudden change in the class structure (i.e., a political and economic change) had a major effect on the health of its population (14). We did not deal with the potential causes of declining population health since the mid-1960s, a phenomenon that we acknowledged, however (2). Increased exploitation, which can exist in centrally planned economies (1; see Economic Subsystem in 2, p. 73), could account for this decline. The political oppression of labor organizations in the Soviet Union, which Muntaner and Llorente (15) noted almost two decades ago, could also account for that trend. In fact, because Wilkinson's population health model calls for reducing income inequality but leaves intact class relations, it gives implicit support to any social system that reduces income inequalities regardless of its class structure (e.g., the Soviet Union's state socialism or the new example (1, pp. 537–538)). On the other hand, the implications of a class exploitation model (2) lead to the implicit rejection of both these social systems despite their relative success in reducing income inequality. With regard to "misconceived materialism" (1, p. 540), our example of a class system (2, Appendix) shows that there is no manual/nonmanual labor distinction. Neither do we have any "outmoded prejudice"[3] against psychosocial factors affecting health (16–18). The issue is that psychosocial factors need to be integrated with social relations rather than approached as isolated individual perceptions of relative inequality position (17; see below).

Social Class: Relational and Stratified

Wilkinson states that class is mostly determined by income differences, making class de facto an attitudinal response of individuals to their relative position in the distribution of income. This framework does not specify where income comes from, which is ultimately from production, as value is ultimately created from labor, not the other way around (19). Similarly, the thought experiment presented by Wilkinson (1, p. 537) is unrealistic because he does not detail the relations of production in that society, only unequal distribution of incomes. As we showed earlier (2, Appendix), a mere statement about lack of ownership (a legal

[3] Wilkinson's preoccupation with novelty often makes him overlook previous research. See the section "Psychology in a Social Vacuum," below.

criterion) does not describe the economic and political processes that take place in the production of goods and services.

Contrary to Wilkinson's interpretation, the presented class framework (2, p. 73) is not dichotomous (e.g., capitalist vs. worker) but integrates class relations within a continuum. Muntaner and his collaborators have conducted several studies that show associations between relational/stratified class indicators and health (e.g., wealthy capitalist, poor capitalist; large capitalist, small capitalist; worker, manager; supervisor, worker) (4, 17, 20–22). Wilkinson is correct when he points out that Boswell and Dixon's rate of surplus value uses income (23). However, theories of exploitation provide social mechanisms for the emergence of economic inequality beyond income (e.g., wealth) and yield multiple measures that are empirically distinct from income inequality (e.g., according to the role of business services, depreciation, or benefits and pension plans in the calculation of the rate of surplus value (24)). Therefore, the rate of surplus value is preferable to catch-all income inequality indicators that do not specify social mechanisms (24). Similarly, measures of "SES" (socioeconomic status) are strong predictors of health outcomes but explain little (17), while its component indicators (occupational stratification, income, educational credentials) are interrelated through different social mechanisms (e.g., status attainment, inter- or intra-generational mobility, age, labor markets, institutions) (eg., 25) and have unique effects on health (26).

PSYCHOLOGY IN A SOCIAL VACUUM: WILKINSON'S CULTURE OF INEQUALITY

Wilkinson's culture of inequality fulfills the urgent need for explaining the micro effects of social inequalities. This is yet another instance where class analysis provides a more encompassing framework than the "income inequality and social cohesion model." The task of class analysis is precisely to understand not only how macro structures (e.g., class relations at the national level) constrain micro processes (e.g., interpersonal behavior) but also how micro processes (e.g., interpersonal behavior) can affect macro structures (e.g., via collective action) (27).

Wilkinson is certainly correct in addressing the lack of research on the psychological effects of inequality. While there is a substantial scholarship on the psychology of racism and sexism, little research has been done on the effects of class ideology (i.e., classism). This asymmetry could reflect that in most wealthy democratic capitalist countries, income inequalities are perceived as legitimate while gender and race inequalities are not (4). Most work on the psychology of inequality and classism has been qualitative (28–32). Most of these ethnographies, as well as some recent empirical studies (33, 34), point to the relational aspects of classism (e.g., the educated upper middle class holding views of inferiority about the working class or its most deprived elements).

But it is not only the psychological effect (e.g., humiliation) associated with lower capacity to purchase goods and services that seems to matter. Thus, although Wilkinson uses Sennett and Cobb's classic *The Hidden Injuries of Class* (29) for his argument about the psychology of inequality, he fails to mention Sennett's new volume (30), which stresses the erosion of control over the labor process even among persons of *relatively high* income (e.g., the rise of nonstandard work arrangements, lack of control due to mechanization). Attitudes about the causes of social inequalities (i.e., classist ideology) are part of class relations. Those with relatively high incomes (e.g., capitalists, managers, and professionals) hold attitudes that justify social inequalities, cast in terms of reductionist biological hypotheses (e.g., the inheritance of intelligence) or idealist lay psychology (e.g., self, effort, morality, responsibility, will power) (32).

Wilkinson is correct in stressing the need to explain the social psychology of health inequalities—that is, psychological social psychology (i.e., the study of how society affects individual behavior and health)—as associations between social indicators and mortality rates presuppose individual-level mechanisms whereby social relations affect individual behavior and health. Nevertheless, Wilkinson's social psychology neglects precisely the impact of social (economic, political, and cultural) relations on individual behavior. His approach is similar to the U.S. interpersonal social psychology that was criticized by British psychology more than 20 years ago (35, 36). That approach to social psychology was abandoned because it focused on interpersonal behavior without analyzing the social relations that determine it.

In addition to social psychology, Wilkinson uses the literature on animal and human stress to summarize the evidence on the health effects of social inequalities. While these fields have shown substantial progress in recent years (e.g., Sapolsky's research on stress), Wilkinson's presentation of them as "novelty" does not acknowledge a long research tradition in the physiology of social hierarchies among primates (37) and in the study of human physiological psychology (e.g., the Swedish school that linked responses of the sympathetic–adrenal medullary system and the pituitary–adrenal cortical system to workplace stress (38)). These omissions might contribute to overstating the degree of progress that has been achieved with the "income inequality" approach and overlooking what is known about the health effects of hierarchies within the labor process (38).

We next review several hypotheses advanced by Wilkinson that have already been refuted decades ago in social psychology, or for which there is enough evidence to cast doubt on their alleged generality.

The Relatively Deprived as "Men of Respect": A New Version of the Frustration/Aggression Hypothesis

Disrespect is now claimed to account for the association between inequality, violence (i.e., lack of social cohesion), and health. But this sweeping generaliza-

tion does not take into account the social relations where "disrespect" takes place. The history of a comparable violence hypothesis, the "frustration/aggression" hypothesis of the 1940s (39) can shed light on the plausibility of the "disrespect/ violence" hypothesis. Once researchers started to take into account the social context of behavior (as in Bandura's Social Learning Theory), the frustration/ aggression model was rejected (40). For example, frustration (or humiliation, or disrespect) under authoritarian social relations is not a good predictor of aggression (e.g., soldiers under instruction; a worker reprimanded by a supervisor in the workplace). Military and most forms of criminal aggression do not require being offended: actually, emotional arousal can interfere with effective aggression. Most aggression is instrumental; it is emitted because it has been rewarded in the past or under instructions that signal future rewards (41). For example, the pilot of a Lockheed F-117A Stealth Fighter that drops bombs over Iraq or Kosovo does not have to be upset, or frustrated, or feel any kind "disrespect" to emit aggressive behavior. The role of "disrespect" as a determinant of aggression changes in organizations according to economic, power, and cultural relations. Thus, inside mafia organizations, enforcing "respect" kept the cost of business transactions low, as there was no possibility of appealing to external law enforcement (42, 43). Once this culture of "disrespect" and violence proved unnecessary for the economic goals of the organization (due to technological change, among other factors), it drastically declined (44).

The notion that large income inequality undercuts community cohesion through its emotional effects (e.g., frustration, bitterness) was a popular hypothesis in political sociology (45). Wilkinson, like some political sociologists, conflates the idea of inequality with inequity (5), thus implying that the experience of inequality is perceived as unjust. However, inequality refers to the distribution of income while equity refers to the evaluation of people's relative position (5). From what is known in political sociology, there is no basis to expect that a high degree of income inequality will necessarily be seen as unjust or undermine the legitimacy of a society by itself and give rise to antisocial behavior as Wilkinson claims. For example, surveys conducted in wealthy capitalist countries indicate that inequality does not necessarily translate into perceptions of inequity and that populations can view inequality as legitimate (46). Moreover, a population's objective perception of inequality is made difficult by the availability heuristic, a social cognitive phenomenon that impels people to over-represent the proportion in their own social class (or income bracket), which constitutes the majority of those with whom they interact (47, 48). Although many other factors could be invoked (e.g., class, race and ethnic formation, media propaganda), these two social facts alone (i.e., the asymmetry between inequality and equity, and the availability heuristic) cast doubt on the soundness of this aspect of the psychosocial hypothesis proposed by Wilkinson.

The above argument does not mean that at the aggregate level we cannot find strong associations between income inequality and violence. Such a relation is

complex, however, involving different types of inequality (e.g., exploitation, agrarian inequality) and types of violence (e.g., collective revolt, different sorts of crime, state-sanctioned violence) (23). What can be challenged is that such relationship, if found, is likely to originate from an individuals' perception of his or her position in the distribution of income.

The Relatively Deprived as French Existentialists:[4] The Anxiety Hypothesis

According to Wilkinson, anxiety is an important consequence of income inequality that affects individual health. Psychiatrists distinguish between medically treated anxiety disorders (e.g., the DSM-IV's panic disorder, obsessive compulsive disorder, specific phobia, social phobia) and psychological, everyday anxiety that is measured in a continuum (e.g., MMPIs MAS scale, Spielberger's State/trait scale). Psychological anxiety could be defined as conditioned fear or as an expectation that includes negative affect, resulting from perceptions of threat and inability to predict the outcomes of future situations (49). This distinction is relevant because it avoids medicalization and its potential iatrogenic consequences, among them labeling and stigma (1). Wilkinson seems to refer to this latter form of anxiety, less severe and more pervasive than psychiatric disorders (1).

Stressing the psychopathology of the relatively deprived is a common approach in mental health research (e.g., research on vulnerability to stress, lack of self-esteem, fatalism, (50)) that runs the risk of portraying the relatively poor as passive victims (e.g., Franz Fanon's notion of victimization; both current authors are also vulnerable to this criticism). This approach to psychopathology ignores the resiliency, endurance, and capacity for collective action among relatively deprived persons even when they face severe, uncontrollable events (e.g., homelessness, unemployment) (28).

Actually, evidence suggests that mild forms of everyday anxiety (uncertainty) seem to be a characteristic of the middle class, in particular among those who fear downward mobility (31, 51). On the other hand, anxiety *disorders* are more frequent among the working class: in a recent survey of East Baltimore, Muntaner and colleagues (17) have shown higher rates of anxiety disorders among those with absolute lower family incomes and those who *do not* derive income from property. Thus Wilkinson's culture of inequality hypothesis reflects a middle-class notion[5] of pervasive cognitive anxiety that, even if valid, would underestimate the severe psychiatric impact of social inequalities among the lowest strata of the income distribution.

[4] The term "French existentialist" refers to the middle-class intellectual movement inspired by Jean Paul Sartre in post–World War II France that underscored the role of anxiety in everyday life.

[5] Another aspect of this alleged "middle-class bias," namely in the definition of social cohesion as well as in recent articles on "collective efficacy" and "social capital," is addressed empirically in part II of this article.

The Relatively Deprived as Leisure Class: Do Persons with Relatively Low Income Work at All?

Another problem in Wilkinson's theory is that it overlooks the nonpsychological effects of income inequalities (e.g., environmental exposures, injuries, infectious diseases) (52–55). Given that production (occupational and environmental health) is considered one of the top determinants of population health (56, 57), it is surprising that in Wilkinson's model people do not work, they just receive paychecks. Wilkinson's hypothesis amounts to stating that the health of, for example, Appalachian nurse aides is determined by their perceptions of being at the lower end of the income distribution in their community (where, owing to class segregation, they seldom interact with higher-income persons) rather than by exposure to job strain, authoritarian management, and lack of health benefits. Nurse and health aides have some of the highest rates of musculoskeletal disorders, back injuries, and assaults on the job (58). But in Wilkinson's model, nowhere can we find a labor process that would expose aides to high demands (ten-hour shifts, understaffing resulting in high client loads, no lunch breaks), low control (lack of ergonomic standards, exposures to emotionally demanding interactions with dying clients, lack of supplies that would allow for proper care of the elderly), and indignity (such as older women being patronized by the young male MBAs who manage them). In particular, issues of lack of respect (the SEIU AFL-CIO's "Dignity Campaign") are framed in terms of lack of *respect at work*, not shameful or humiliating perceptions of relative deprivation or interpersonal interactions outside the labor process (59).

Culture Is (also) about Social Relations

Thus, psychosocial explanations, although real and necessary, need to take into account social[6] relations (2, Appendix) to give a deep account of how social inequalities affect health. Wilkinson could take advantage of what has been

[6] In order to support the existence of social epidemiology as a research field, we need to establish the distinctiveness of social facts. Mortality and morbidity rates are *biosocial concepts*, as death is a biological fact while dying as a result of a city's contaminated water supply or war is a social fact—making epidemiology a biosocial science. *Social facts* occur above the level of the individual organism, in social systems. A social system is defined by an environment, animals of the same species, and the set of their relations or structure of their social system, and presumes biological processes (e.g., homicide implies biological death). But in epidemiology, "social factors" are seldom defined as social facts. Social facts have properties that are not shared by any individual in isolation. For example, although modern manufacturing plants might have many employees working under conditions of high autonomy, manufacturing a car is a social fact as no single individual in isolation can build a car. Similarly, in racial social systems, political exclusion such as barring non-whites from unions, economic discrimination such as whites receiving higher incomes, or blacks being exposed to ideologies claiming white superiority, are social facts associated with some biological or geographical element such as skin color or place of origin.

learned during the last decades to build realistic socio-psychological models of social inequalities in health that incorporate gender, race, and class relations (60). Just as the macro component of the model ("income inequality") overlooks economic, political, and cultural relations, its micro components (social cohesion, culture of inequality) do not spell out how social relations affect individual behavior (i.e., the task of contemporary psychological social psychology) (59) and health (60).

REGRETTABLE BUT TOLERABLE: REACTIONS TO INCOME INEQUALITY RESEARCH AMONG THE UPPER MIDDLE CLASSES

Sen[7] has recently lamented that unemployment is "regrettable but tolerable" in Europe but not in the United States, where the Protestant work ethic of individual responsibility and accountability considers lack of opportunity to help oneself socially unacceptable (62). The argument could be turned around with regard to income inequality, to suggest that in the United States income inequality is "regrettable but tolerable" as the American self-amelioration culture does not include any provision for equality of outcome (e.g., protecting against poverty and lack of health care). This seems to be true among the educated elites (33), precisely those academics and government officials who read research on income inequalities.

Contrary to Wilkinson's claim, it is doubtful that his research on income inequality has had a major impact on the understanding of social cohesion. Using the MEDLINE database on articles in the health sciences, we found 76 articles on social cohesion and zero articles on income inequality and social cohesion between 1980 and 1989. In the 1990s, at the beginning of which Wilkinson published his most visible empirical articles, the corresponding figures were 170 and four. Even if these four articles on income inequality and social cohesion were published in journals having a large impact, it is unlikely that students of social cohesion have incorporated the notion that income inequality determines social cohesion. A more parsimonious view would be that these two research areas have little impact on each other. Some features of Wilkinson's model could account for this observation: (*a*) lack of explanations for the social origins of income inequalities and their link to interpersonal behaviors; and (*b*) overabundance of conjectures on individuals' perceptions of inequality and their associated breakdown in social cohesion as determinants of health inequalities.

An emphasis on the psychology of social cohesion rather than income inequality should be expected as people seek explanations (63), and Wilkinson provides only post-hoc psychological hypotheses on the breakdown of social cohesion.

[7] Amartya Sen (often quoted by authors in the "income inequality and social cohesion" model) has a reputation as an advocate for reducing social inequalities that is probably exaggerated (61).

Thus readers appropriately emphasize that aspect of the model of which they can make some sense. For example, a political science journal states that "Richard Wilkinson and other academic authorities have concluded that inequalities of health and education are *not merely* the product of income differences" (64). Another publication summarizes Wilkinson's research as follows: "A leading figure in this work, says that what seems to matter are the *social meanings* attached to inferior living conditions . . . the quality of the social fabric *rather than* increases in average wealth" (65). Similarly, the *British Medical Journal*'s comment on Wilkinson's research states, "*as important* for health as income differentials is social capital—that is, features of social organization (civic participation, social trust) that facilitate cooperation for mutual benefit" (66). (Emphasis added in all three quotations.) A common feature of these interpretations of Wilkinson's research is that subjective appraisals and a loss of social cohesion are understood as independent of income inequalities, not as a consequence. Also consistent with our argument, it is significant to note in the last example that the author *does not* seem to consider income inequalities as part of "social organization." So why does Wilkinson shy away from class, gender, and race relations, repeating instead a known empirical association (67) and restricting explanations to mostly discredited psychological hypotheses (40)?

WHAT IT REALLY COMES DOWN TO: THEORETICAL DIFFERENCES HAVE POLITICAL IMPLICATIONS

Table 1 presents the two basic theoretical differences between models of social inequalities in health: whether inequality relations are binding or nonbinding (e.g., a business owner implies a worker that works for her[8] vs. a ranking of income), and whether the model's implicit values do or do not promote the end of social inequalities in health. Thus, class analysis concurs with the income inequality and social cohesion model in the goal of ending social inequalities in health, but calls for a substitution of social relations that generate economic inequalities (e.g., eliminating "owner/worker" relations). The income inequality and social cohesion model would maintain those social relations and merely reduce income inequalities through some other unspecified mechanism (i.e., a nonbinding relation). Some varieties of class analysis (e.g., Marxian crisis theory) also predict that capitalism cannot survive with substantial redistributions of income (e.g., the rising "organic composition of capital" hypothesis (1, p. 66, footnote 8)). Moreover, it could be argued that the social cohesion model (Table 1) that informs most of New Democrat and New Labour "community" initiatives does not even aim at reducing social inequalities to improve population health through income redistribution (2, 68).

[8] This dichotomy is a short-cut simplification for an elaborate map of class processes and locations (see 2).

Table 1

Models of social inequalities in health according to kind of inequality relation proposed (binding or nonbinding) and their implicit values (equality or inequality)

	Kind of inequality relation	
Values	Binding ("unchangeable")	Nonbinding ("changeable")
Equality	Class, gender, and race	Income inequality and social cohesion
Inequality	Functionalism, sociobiology	Social cohesion

Thus, both class analysis and income inequality approaches share egalitarian values that aim at eliminating social inequalities in health. However, Wilkinson's model avoids class, gender, and race relations, implying that the (psychological) effects of income *distribution* are the determinants of health inequalities and that there is nothing harmful about the way income inequalities are *produced*—which is the focus of the class approach to health inequalities (2). As opposed to class-based, social democratic policies, the emphasis of Wilkinson's model on social cohesion is reminiscent of Christian democratic public policies in Europe, one of the main traditions of European welfare states (69). Christian democratic social policies have produced a smaller reduction in economic inequality than have social democratic policies (e.g., pension systems). This was achieved by transferring social responsibility to families and communities (i.e., social cohesiveness) while weakening the power of class-based labor movements (69).

CONCLUSION

In a period of unprecedented international economic inequalities, not even concealed by members of the emerging transnational capitalist class (70, 71), it is even more important that researchers do not shy away from uncomfortable explanations, even at the risk of negative consequences (72, 73). This is not an easy task. Particularly in Europe and the United States, the individualist ethic of Protestant liberalism among the elitist upper middle class (32) provides justification for adopting positions that avoid or disregard conflict (e.g., unfulfilled expectations of "making a difference" or "being a winner" (74). (There is a substantial amount of theoretical and empirical scholarship on this topic (e.g., 32).) Nevertheless, given the evidence reviewed here and in our previous article (2), the impact of class relations on income inequality and population health should not be ignored (5). A basic disregard for the class, gender, and race relations that generate income inequality (empirical studies have been conducted for more than

20 years (75–80)) has implications for social policy. For example, scholars that are supportive of Wilkinson's model (81) seem to believe that organizing conferences of enlightened consumer advocates and philanthropic billionaires (e.g., Ralph Nader, Bill Gates, Warren Buffet) might be a sound strategy to reduce income inequalities (82). From a class analysis perspective this proposition seems *extremely* naive and ineffective as it reflects a lack of understanding of the conflict of interests underlying class relations.

It is not our goal to diminish the leading contribution of Wilkinson's income inequality studies to the advancement of social epidemiology in the last decades of this century. However, important as they might be to update and monitor social inequalities in health, associations between income inequality and health had been documented earlier (67, 83–85), and deeper models that incorporate political and economic determinants of income inequality have been advanced (2). In a period of conservative hegemony, it could be argued that going back to simple models that do not address how the workings of capitalism affect health provides the sole venue under which health inequalities can be studied. Models such as the "income inequality and social cohesion" model provide a pragmatic and safe middle ground where left, liberal, and conservative researchers eschew the social mechanisms that generate income inequalities, thus avoiding the issue of whether eliminating health inequalities requires fundamental policies (e.g., replacing managed care with a national health insurance) or reformist policies (giving tax breaks so the relatively deprived can afford some managed care) (Table 1, right column). Nevertheless, the aim of science is still to provide the best possible explanations without attention to the powers that be. Unless social epidemiologists are willing to take intellectual risks (4) their discipline is unlikely to provide any serious insight into how social systems generate health inequalities.

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II. PRESENTATION OF AN ALTERNATIVE MODEL

The psychosocial construct of social cohesion, broadly understood as social behaviors indicating trust, reciprocity, and concern for the well-being of the members of one's community, is the key determinant of health in Wilkinson's model (1, p. 211). More specifically, Wilkinson defines social cohesion as participation in public affairs, civic responsibility, or involvement in public life. Thus, social cohesion can be measured with indicators of voting participation, newspaper readership, or number of cultural voluntary associations (1, pp. 119–120). In our previous analysis (2), we critically examined Wilkinson's notion of social cohesion and we proposed some alternatives. Here we concentrate on two components of that critique, namely that (*a*) social class determines the type of social cohesion emerging in communities, and (*b*) Wilkinson's proposed indicators exclude or minimize forms of social cohesion emerging from working-class communities, thus resulting in lack of content validity (3).

While social cohesion should by definition refer to social relations, several elements of social cohesion examined by Wilkinson (1) concern individual psychology (e.g., emotions, stress, attributions, helplessness, motivation, self-perception, disrespect). We focus here on the sociological aspects of

Wilkinson's notion of social cohesion and define social cohesion as the amount of individual participation in social groups in the community (2). Indicators of membership in civil organizations, a central measure of social cohesion used in Wilkinson's research program (3), would correspond to this definition. But in order for a psychometric measure to have content validity it must include a representative sample of indicators of the construct it is supposed to measure (4). Thus, measures of social cohesion based on organization membership exclude or minimize forms of group participation that are characteristic of working-class communities, such as informal help networks, gift giving, or union membership (5, 6). This omission is relevant to social epidemiology because working-class forms of cohesion can affect the health of communities through collective political action (e.g., research on collective control) (7).

In political sociology, research within the resource mobilization framework has revealed that members of the middle class have more time and resources to devote to civic participation than members of the working class (8–10). Therefore we expect that the forms of civic social activism tapped by Wilkinson's indicators will be positively associated with "non-working-class" locations and negatively associated with working-class location. Next, because group participation antecedes collective political participation (e.g., voting, strikes) (6, 10), we hypothesize that Wilkinson's forms of organization membership will mediate the association between middle-class and political participation while union membership will be the mediator of political participation for working-class locations. In testing these hypotheses we take into account the role of potential confounders such as expected efficacy of individual political action, income, and education.

The Need to Account for Individual Political Efficacy

The need to adjust for individual expectations of political efficacy stems from a long-standing body of work in political sociology and from recent developments in class analysis: namely, from the search for ways of explaining collective action using methodological individualism, in particular through rational action models of individual behavior (e.g., 11–14). Rational action, in its methodological individualist version used by rational choice Marxists,[9] is a descriptive theory of human behavior which develops from several strong assumptions, such as expected utility maximization, autonomy, and cognitive proficiency (see 17–22). Rational choice, or instrumental rationality, has been defined as a set of rules for choosing among alternatives. Available alternatives are first evaluated by multiplying certainty and utility, and the alternative

[9] Rational choice is far from exhausted by methodological individualism, nor do rational choice advocates such as Coleman (15) or Burt (16) neglect the relevance of social structure.

yielding the maximum value is then selected (23).[10] Przeworksi (11) provides a typical example of the application of instrumental rationality to the question of class and political participation—arguing that major social transformations will not be attempted by powerful movements under capitalism because they are costly to rational workers. That is, organizations of rational workers will consent to capitalism when this strategy is best for the material interest of individual rational workers (12).

The relationship between class and political participation is thus explained by the expected political efficacy of individual workers (26). Political efficacy, the belief in one's ability to influence the political environment, is a significant psychological predictor of political participation (27–30) and has also been related to an individual's location in the social structure (29–33). Efficacy should therefore be considered a potential mediator of the relation between social class and political participation. Different definitions of political efficacy tend to focus on the expected effectiveness of one's political behavior. For example, Almond and Verba (34) consider efficacy "subjective competence," while Gamson's (35) definition stresses "individuals' perception of their ability to influence." Such definitions of political efficacy establish a correspondence with individual rationality, since rational actors are guided by efficacy concerns (36). Inasmuch as the rational choice framework stresses the notion of an optimal relationship between means and ends, political action can thus be seen as the rational course of action for efficacious individuals. Besides the link that students of political participation have drawn between political efficacy and individual rationality, political efficacy has exemplified the paradigm of methodological individualism in political sociology since the early 1960s (e.g., 37). The belief that individual political action does or can have an impact upon the political process is a psychological variable (34, 37). As a consequence, models relying on political efficacy as the main determinant of political participation qualify as methodological individualism.

Thus, by adjusting for individual expectations of political efficacy we can claim that the effects of social cohesion (organization or union membership) are indeed social (i.e., cannot be reduced to individual behavior) (e.g., 38).

[10] Although influential in class analysis (e.g., 13, 14), the empirical support for models based on rationality varies greatly across social and behavioral sciences (24). For example, while rational choice economists often assume that individuals tend to maximize expected utility (i.e., the assumption that there is an objective individual "utility" or self-interest which the subject optimizes), some behavioral psychologists have conducted experimental research supporting at least one alternative behavioral equilibrium in which individuals do not maximize expected utilities but distribute their behavior to obtain an average return across different options (25).

Hypotheses

According to the preceding examination of theoretical and empirical amendments to the construct of social cohesion and its relation to social class, we formulate two hypotheses on the relation between class, organization membership, union membership, and political participation.

Hypothesis 1. Capitalist, managerial, or professional ("non-working-class") class location will be positively associated with organization membership, while working-class location will be positively associated with union membership, even after accounting for the effects of income and education.

Hypothesis 2. Organization membership and union membership will mediate the relationship between social class and political participation even after accounting for the effect of individual expectations of political efficacy, income, and education on political participation.

METHODS

We used data from the American portion (N = 1,719) of the Political Action I survey (39) and from a sub-sample (N = 523) of the American portion of the Political Action II survey (40). The sub-sample is comprised of respondents to the Political Action I survey who were re-interviewed seven years later as part of the Political Action II project.[11] These data are particularly appropriate for our study because they facilitate the operation of class in a manner that measures the presence or absence of control over the means of production (i.e., capitalist, managerial, and professional class ("non-working-class") vs. working-class positions) and include multiple indicators of social cohesion (i.e., organization and union membership) as well as different forms of political participation (i.e., conventional and protest).

We used two structural equation models (SEM) with latent variables (41) to determine the relative mediating roles of organization and union membership and their relation to social class. These models combine structural equation and factor modeling, and they directly adjust for the fact that latent variables are imprecisely measured (42). The preliminary model, depicted in Figure 1, is based on cross-sectional data from the Political Action I survey. The exogenous variables are the dichotomous *social class* indicator (working-class location versus non-working-class location) and the two control variables, *income* and *education.* The explanatory variables are social cohesion (*membership in civic organizations* and *union membership*), and individual perceptions of *political*

[11] The American portion of the Political Action I survey was conducted between June and September of 1974, and the American portion of the Political Action II survey was conducted between May and September of 1981. Both surveys are based on multi-stage area probability samples of households.

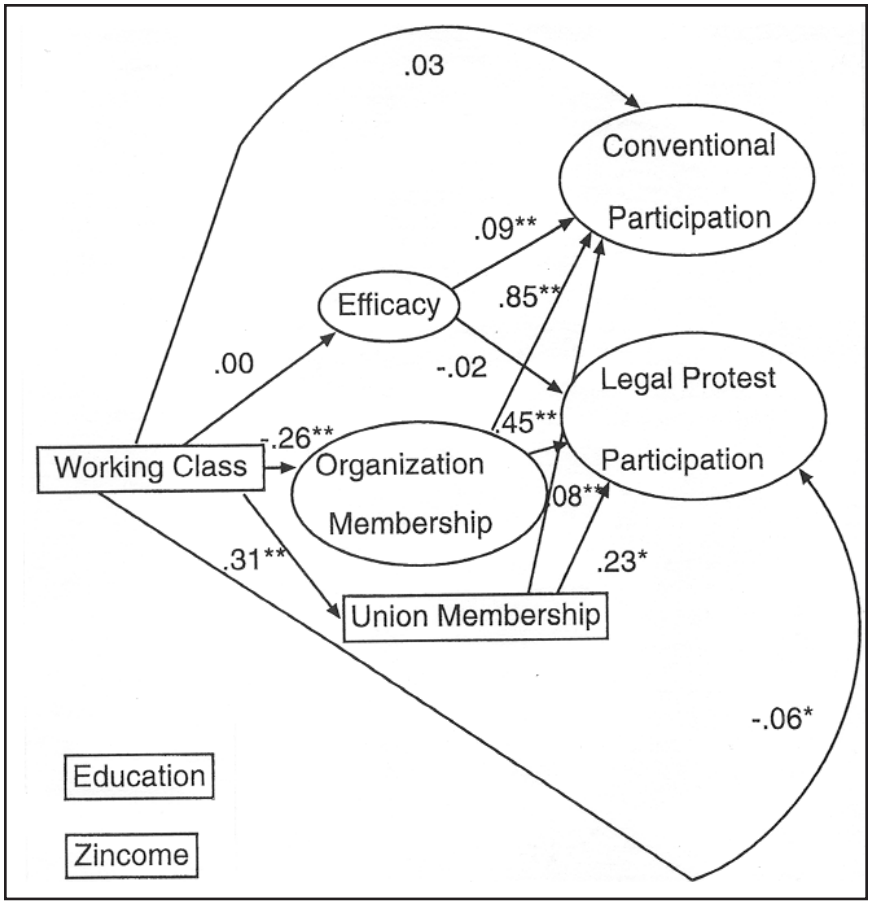

Figure 1. Coefficients from the preliminary "recursive" structural equation model of the relationship between class, political efficacy, organization membership, and political participation in the United States. ** $P < .01$; * $P < .05$. (Zincome = Z of family income; see Appendix.)

efficacy, and the two ultimate dependent variables are *conventional participation* and *legal protesting.*[12] Four of the variables included in this model—organization

[12] Political sociologists study different realms of political participation—pointing out that individuals who engage in unconventional activities might not engage in conventional activities, and vice versa. Thus studies that examine a single realm risk mislabeling as nonparticipants individuals who may in fact be active. We should expect that organization and union membership have a stronger relationship to political participation for the more demanding forms of political participation (e.g., protest) (43).

membership, political efficacy, conventional participation, and legal protesting—are latent variables, and a complete description of their indicators is provided in the Appendix (loadings for these indicators are listed in Table 4). The 1974–1981 period covered by our analyses was chosen because it covers moments of singular political participation (conventional and protest) in the United States, with special significance for health policy (44).

A preliminary analysis of the Political Action I data allowed us to take advantage of a large sample size (N = 1,719) to test our hypothesis on the association between social class and different forms of social cohesion (organization and union membership). The preliminary model presented in Figure 1 does not allow for the possibility that perceptions of political efficacy and social cohesion (membership in civic organizations or unions) occupy different temporal planes. A politically efficacious individual might, for example, be predisposed to join an organization or union out of the belief that his or her presence will be beneficial to it. On the other hand, the experience of belonging to an influential organization or union may boost an individual's sense of political efficacy. Thus any effect that organization membership exerts on participation in the preliminary model could nonetheless be attributable to political efficacy—since it may be the case that efficacy influences organization or union membership. Similarly, if organization or union membership actually influences political efficacy, the former could be the ultimate source of any observed political efficacy effect on participation.

The second model, presented in Figure 2, is designed to remove the effects of political efficacy and organization or union membership on participation of any reciprocal relationship between the two variables. It utilizes panel data from the sample of Americans who were interviewed in 1974 and again in 1981. Measures of working-class membership, income, and education are included at time 1 (1974) only, while conventional and legal protest participation are measured exclusively at time 2 (1981).

The Political Action I survey provided class indicators that closely approximate neo-Marxian categories based on the notion of control over productive assets (45, Appendix). Studies comparing neo-Marxian and neo-Weberian indicators of class position tend to produce similar results for broad class categories (46). Our results on the relationship between class, organization membership, union membership, and political participation were not substantially affected by alternative specifications that omit indicators of income and education from the model.

Organization membership, union membership, and political efficacy were measured at both time 1 and time 2, with direct paths from the time 2 measures to the two forms of participation. Social class, income, and education, the three exogenous variables in the model, also exert direct effects on the two participation variables. There are also paths from the three exogenous variables to the time 1 measures of organization membership, union membership, and political efficacy. Each of the time 1 organization membership, union membership, and political efficacy measures in turn influences the corresponding measure at

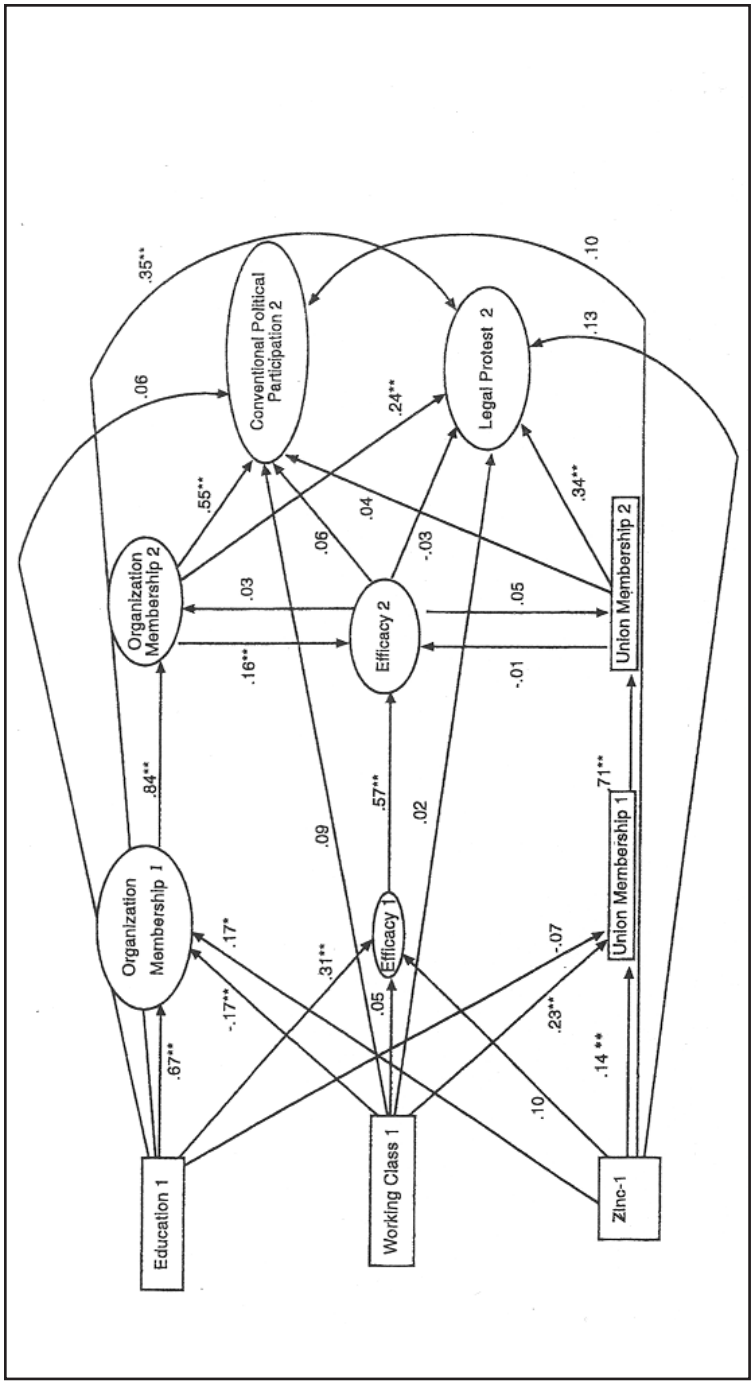

Figure 2. Coefficients from the reciprocal effects model of the relationship between class, political efficacy, organization membership, and political participation in the United States. $^{**}P < .01$; $^{*}P < .05$. *Note:* 1 indicates time 1 (1974); 2 indicates time 2 (1981). (ZInc = *Z* of family income; see Appendix.)

time 2. Reciprocal relationships are specified between political efficacy and each of the two forms of social cohesion (organization membership and union membership). Identification is obtained by using the time 1 measures of organization membership, union membership, and political efficacy as instruments for their time 2 counterparts and by excluding cross-lagged effects from the model.[13] The Root Mean Square Error of Approximation (RMSEA) (47) was used to assess the similarity between the observed and the estimated variance-covariance matrices (goodness-of-fit). As opposed to the chi-squared statistic, the RMSEA does not have the strong assumption that the model holds exactly in the population, while it takes into account the error of approximation in the population and the precision of the fit measure itself (41). Values of .05 or less indicate a close fit, and values of up to .08 represent close approximations in the population.

RESULTS

Findings from both preliminary and reciprocal effects models are consistent with the proposition that organization membership and union membership are associated with "non-working-class" (i.e., capitalist, manager, and professional locations) and working-class locations, respectively, and that both forms of social cohesion are mediators of the social class–political participation relationship.

The preliminary model (which predicts membership in organizations and unions and two forms of political participation) provides the first hint as to the association between class, organization membership, and union membership (Table 2). (Loadings for indicators of the latent variables included in the preliminary model (political efficacy, organization and union membership, conventional participation, and legal protesting) are presented in Table 4 in the Appendix.) Membership in organizations is associated with "non-working-class" location and exerts a strong positive effect on conventional activism and legal protesting (particularly the former).[14] The second social cohesion variable, union membership, also facilitates conventional and legal protest activism but is associated with working-class location. Individual expectations of political efficacy induce conventional participation

[13] The absence of cross-lagged effects means that each observed contemporaneous effect in the reciprocal effects portion of the model actually represents the sum of two effects: the excluded cross-lagged effect and the "true" contemporaneous effect. Thus the observed effect of efficacy at time 2 on organization membership at time 2, for example, is in fact the sum of the (unmodeled) path from political efficacy at time 1 to organization membership at time 2 and the true path from efficacy at time 2 to organization membership at time 2.

[14] The surprisingly negative path from education to conventional participation is apparently attributable to linear dependency between education and organization membership. The correla- tion between these variables is .66. The education effect on conventional participation becomes .28 ($P <$ .01) when the equation is estimated without organization membership as a predictor. This collinearity also appears to inflate (slightly) the path from organization membership to conventional participation. Without education in the model, this path becomes .79 ($P < .01$).

Table 2

Estimates for preliminary model, United States, 1974,[a] standardized coefficients

	Political efficacy	Organization membership	Union membership	Conventional participation	Legal protest
Working class	.00	–.26**	.31**	.03	–.06*
Political efficacy	—	—	—	.09**	–.02
Organization membership	—	—	—	.85**	.45**
Union membership	—	—	—	.08**	.23**
Z of family income	.11**	.20**	.20**	.08**	.01
Education	.25**	.01	.01	–.18**	.18**

[a]RMSEA < .05; N = 1,256.
**$P < .01$; *$P < .05$.

(although to a seemingly lower degree than do organization membership and union membership), but fail to significantly influence legal protesting.

Political participation remains more a function of social cohesion than of expectations of political efficacy even after the reciprocal relationships between efficacy and the two social cohesion variables (organization membership and union membership) are controlled for (Table 3 displays the results from the reciprocal effects model). (Loadings for indicators of the latent variables included in the reciprocal effects model (the time 1 and time 2 measures of political efficacy and organization and union membership, and the time 2 measures of conventional participation and legal protesting) are presented in Table 4 in the Appendix.) The impact of organization and union membership on the two modes of participation remains significantly positive, with conventional participation again being especially responsive to both forms of social cohesion. The positive effect of union membership now becomes confined to the protest realm, after being also significant for conventional participation in the preliminary model. Individual expectations of political efficacy, a stimulant of conventional activism but not of protesting in the preliminary model, now becomes statistically irrelevant to both forms of participation.

The reciprocal effects portion of the model (i.e., the observed effects of the time 2 measures of individual political efficacy and organization membership on each other and of efficacy and union membership on each other) offers some

Table 3

Estimates for reciprocal effects model, United States,[a] standardized coefficients

	Political efficacy		Organization membership		Union membership		Conventional participation	Legal protest
	T1	T2	T1	T2	T1	T2	T2	T2
Working class, T1	.05	—	–.17**	—	.23**	—	.09	.02
Political efficacy, T1	—	.57**	—	—	—	—	—	—
Political efficacy, T2	—	—	—	.03	—	.05	.06	–.03
Organization membership T1	—	—	—	.84**[b]	—	—	—	—
Organization membership, T2	—	.16**	—	—	—	—	.55**	.24**
Union membership, T1	—	—	—	—	—	.71**	—	—
Union membership, T2	—	–.01	—	—	—	—	.04	.34**
Z of family income, T1	.10	—	.17*	—	.14**	—	.10†	.13†
Education, T1	.31**	—	.67**	—	–.07	—	.06	.35**

[a]RMSEA < .05; N = 327; χ^2 = 870.78; *df* = 626.

[b]The errors between organization membership at time 1 (T1) and time 2 (T2) were allowed to correlate. This yielded a significant ($P < .01$) correlation of .45.

**$P < .01$; *$P < .05$; †$P < .10$.

insight into the diminished predictive power of individual expectations of political efficacy (vis-à-vis its effects in the preliminary model). Thus, findings indicate that organization membership (significantly) stimulates efficacy (.16), but that the reverse effect is nonsignificant (.03).[15] Thus it is social cohesion (organization and union membership), rather than political efficacy, that apparently assumes temporal precedence in any causal relationship between these two

[15] Given the model's design, we cannot say precisely when each of these effects occurs, since each observed contemporaneous effect actually represents the sum of the unmodeled cross-lagged effect and the true contemporaneous effect. For example, the observed effect of organization membership at time 2 on efficacy at time 2 is the sum of the (unmodeled) effect of organization membership at time 1 on efficacy at time 2 and the "actual" effect of organization membership at time 2 on efficacy at time 2.

variables and is more appropriately deemed the ultimate source of effects exerted by both variables on participation.[16]

Findings presented in Tables 2 and 3 also address the question of whether political efficacy and social cohesion (membership in organizations or unions) are rooted in the class structure (the class effects can be examined by inspecting either of these tables). Organization membership is a significant function of social class, rendered less likely by working-class position. Conversely, the likelihood of union membership, the second social cohesion variable, is enhanced by working-class position. As to the question of which variable—efficacy or social cohesion (membership in civic organizations or unions)—is more strongly influenced by social class, the answer appears to be social cohesion. The effect of class on organization membership is appreciably higher than the corresponding effect on efficacy, and the class effect on efficacy trails the class effect on union membership as well.

DISCUSSION

Results support our two hypotheses and thereby are consistent with the conclusion that measures of social cohesion used in the "income inequality and social cohesion" research program lack content validity because they exclude forms of social cohesion emerging from working-class locations (union membership). Thus, not measuring unionization and other forms of working-class solidarity might result in a characterization of these communities as not socially cohesive and attribute their population health experience to this alleged collective liability (see 1, 2 for examples of community disintegration). The often unintended consequence of such erroneous characterization could be to justify punitive moralistic (e.g., welfare reform) or oppressive (e.g., community policing) policies, as currently implemented in Britain and the United States (48, 49).

Results also support the hypothesis that social cohesion is a mediator of the relation between class and political participation, itself an indicator of social cohesion that has important implications for the health of nations (44). Unions mediate the association for the working class while other types of organizations mediate it for other classes (i.e., capitalist, managerial, and professional classes, the surplus appropriating and receiving classes (2)).

In the liberal democratic capitalist country examined, social cohesion (i.e., membership in organizations and unions) is shown to be a stronger predictor of political participation than is individual expectation of political efficacy. The predictive power of organization and union membership remains apparent even after controlling for the reciprocal relationship between organization membership, union

[16] Apparently it is organization membership that spurs the relationship between social cohesion and political efficacy, as efficacy and union membership are seemingly statistically irrelevant to each other (the path from political efficacy to union membership and its reverse being a nonsignificant .05 and –.01, respectively).

membership, and political efficacy. However, in spite of the good fit of the model, a relatively small sample in the analysis of reciprocal effects cautions against strong inferences and recommends replication of these results with larger samples.

The observed tendency for social cohesion to be strongly influenced by class location supports the argument that its role as mediator of a class-health relationship should be examined in models of social inequalities in health (2). In addition, the pronounced explanatory role of organization and union membership in our models indicates that the mechanisms by which civil organizations and unions may effect their influence need to be empirically ascertained.[17] Singular attention to indicators of civic organizations and unions in our study represents a limited depiction of the social psychological mechanisms through which class influences social cohesion—the encompassing nature of organization membership and its likely association with many such mechanisms notwithstanding (50, 51). Network analyses focusing on norms of fairness and rationality (e.g., 36) or links to friends and associates (52) and on social learning theory, which emphasizes processes of modeling, instructional control, and contingencies of reinforcement (20), might both be of assistance in capturing social cohesion more precisely. Variables reflecting these perspectives were not analyzed owing to the absence of suitable indicators.

Our study also has implications for the limits of methodological individualism in social epidemiology. Given that the findings point to the centrality of collective action, viewing methodological individualism as a constraint on social explanation appears to be unwarranted (53). Thus, the strength of the association between social cohesion (organization and union membership) and political participation, as opposed to the weaker effects of individual efficacy, suggests that exclusive reliance on properties of individuals might offer an incomplete explanation of the relationship between class and health as well (54, 55).[18]

[17] Although our study does not address the issue, several authors have argued that "non-rational" factors such as emotions, norms, and commitment—all of which are linked to membership in groups—might be important mediators of the relationship between class and political participation (20, 23, 36, 43). For example, results from Weakliem and Heath (38) suggest that social contact (face-to-face discussions of political topics) was the most parsimonious mechanism mediating the relationship between class and party choice. A more explicitly "rational" alternative (reading about political issues in newspapers) was included in the list of options examined.

[18] The inclusion of education and income as control variables provides a partial test of the non-economic control over the labor process (Wright's "lived experience" (56, 57)) and political (58) consequences of class locations. Some class theories have considered education in the definition of class locations (e.g., skills/credentials (14)), and according to Roemer's neo-Marxist definition of class, there is a deductive correspondence between class location and income (13). Nevertheless, other contemporary theories of class that are thought to be closer to Marx's own conceptualization in Volume III of *Capital* have provided some evidence that challenges this hypothesis (e.g., 59). Controlling for these variables could be understood as an approximation to partial out the economic effects of class locations (i.e., the differential distribution of the social surplus) on political participation. Class effects are thus presumably grossly reflective of political and cultural consequences of control over the means of production.

Overall, our study provides empirical evidence for the limitations of current measures of social cohesion and highlights the role of social class as a determinant of social cohesion. Models of social inequalities in health, such as Wilkinson's income inequality and social cohesion model, should amend the measurement of social cohesion by adding forms of social participation that characterize working-class communities (e.g., union membership, informal forms of cooperation) and add social class as a determinant of social cohesion.

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APPENDIX
DESCRIPTION OF INDICATORS BY LATENT VARIABLE

Conventional Participation

	"How often do you
OFFICIAL	. . . contact public officials or politicians?"
MEETING	. . . attend a political meeting or rally?"
DISCUSS	. . . discuss politics with people?"
CONVINCE	. . . try to convince friends to vote the same as you?"
CAMPAIGN	. . . spend time working for a political party or candidate?"
WORK	. . . work with other people in this community to try to solve some local problem?"
VOTED	"Did you vote in the [last general] election?"

The first six indicators are accompanied by the response categories 4 = often; 3 = sometimes; 2 = seldom; 1 = never. The seventh (VOTED) is a dichotomy: 1 = yes; 0 = no.

Legal Protest

BOYCOTT	"Joining in boycotts"
DEMO	"Attending lawful demonstrations"
PETITION	"Signing a petition"
STRIKE	"Joining in wildcat strikes"

Political Efficacy

NOSAY	"People like me have no say in what the government does."
DONTCARE	"I don't think public officials care much about what people like me think."
LOSETIE	"Generally speaking, people we elect to congress lose touch with the people pretty quickly."

NOTOPIN	"Parties are only interested in people's votes, but not their opinions."

Accompanying response categories are 1 = strongly agree; 2 = agree; 3 = disagree; 4 = strongly disagree.

Organization Membership

POLORG	"political party"
POLORG2	"other political organizations"
CIVICORG	"civic groups"
RELIGORG	"church or religious organizations"
RACEORG	"racial or ethnic organizations"
INTGPORG	"special interest groups or hobbies"
PROFORG	"professional associations"

For each item, membership is coded 1 and non-membership, 0.

Union Membership

Membership is coded 1; non-membership, 0.

Class

1 = Working class—employees who fall within none of the four middle- and upper-class occupation categories (see below)

0 = Middle and upper class—a combination of the following occupational categories:
capitalists: self-employed and supervising at least one person
self-employed: self-employed and supervising no one
supervisors: employed individuals who supervise others
professional/managerial: non-supervisory employed individuals who hold/held jobs classified as such by the International Labor Organization.

Note: Classifications are based on respondents current or last job. Respondents who had never held a paid job were excluded from the analysis.

Control Variables

Z of family income	Standardized (gross yearly) family income in dollars
Education	Respondent's education in years

Construction of the Latent Variables

Latent variables were computed by summing the product of each item by its weight. Weights were obtained by dividing the factor score regression coefficient associated with each item by the sum of all factor scores (for items in each scale) coefficients. Each weight represents the indicator's proportional contribution to the overall scale. The indicators of conventional participation do not all have identical metrics, and so were standardized prior to being combined.

Table 4

Factor loadings[a,b] for each indicator in the four latent variables of the model: conventional participation, legal protest, political efficacy, and organization membership

	Preliminary model	Reciprocal effects model	
		Time 1	Time 2
Conventional Participation			
MEETING	.79	—	.72
OFFICIAL	.77	—	.71
CAMPAIGN	.82	—	.69
WORK	.65	—	.64
DISCUSS	.57	—	.55
CONVINCE	.56	—	.41
VOTED	.51	—	.36
Legal Protest			
BOYCOTT	.81	—	.51
DEMO	.79	—	.54
PETITION	.73	—	.48
Political Efficacy			
DONTCARE	.85	.76	.82
NOTOPIN	.80	.81	.75
LOSETIE	.77	.77	.64
NOSAY	.58	.58	.61
Organization Membership			
POLORG	.54	.42	.43
POLORG2	.52	.22	.26
PROFORG	.78	.50	.65
INTGPORG	.48	.30	.29
CIVICORG	.72	.35	.42
RACEORG	.64	.12	.16

[a] $P < .01$ or $< .05$ for each loading; — signals the dependent variables in the non-recursive models.
[b] Loadings suggest that latent variables are successfully measured with loadings exceeding .35 in the overwhelming majority of cases.

Loadings for indicators of the latent variables included in the preliminary and reciprocal effects models are listed in Table 4.

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