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genuine races. For Andreasen, in particular, races are clades, that is, roughly speaking, breeding populations of humans united by a common line of descent, which may have emerged during human evolution following geographical isolation. Andreasen also holds that races so understood may not exist anymore because of the disappearance of reproductive isolation.

In contrast to Andreasen and Kitcher, for about 10 years, a handful of influential geneticists have challenged the claim that races are not biological entities. Many articles have presented evidence that, from the alleles at several genetic loci, one can determine whether an individual belongs to one of the races lay people recognize. Rosenberg and colleagues (1999) have concluded from the capacity to identify someone's race on the basis of genetic data that races are biological entities. This conclusion dovetails nicely with the use of racial categories for medical purposes, including for the release of drugs such as BiDil (a drug approved by the FDA in 2005 for the treatment of cardiovascular problems among African Americans). Such conclusions do not constitute an endorsement of classical racialism since geneticists do not claim that racial membership determines a host of physical or, more importantly, of temperamental features. Still, like classical racialists, they hold that races are not social kinds, but biological entities.

Claims such as Rosenberg's have been criticized. In particular, Bolnick (2008) shows that the groups or clusters of humans produced by the algorithms used by Rosenberg and other geneticists do not unambiguously correspond to what lay people view as races (blacks, whites, etc.). Rather, these algorithms produce several distinct clusterings that fit the data equally well (a first clustering may include, e.g., three groups of humans, a second one five groups, a third one ten groups, etc.). Only some of these clusterings consist of groups that map onto the races identified by lay people. It is thus dubi-

ous that these new findings really provide support for the view that races are biological.

SEE ALSO: Measuring Race/Ethnicity for Health; Race and Class, Intersections of; Race and Gender: Intersectionality Theory; Race, Medicine, and Genocide; Social Constructionism

REFERENCES

- Andreasen, Robin O. 1998. "A New Perspective on the Race Debate." *British Journal for the Philosophy of Science* 49: 199-225. doi: 10.1093/bjps/49.2.199.
- Appiah, Kwame Anthony. 1996. "Race, Culture, Identity: Misunderstood Connections." In *Color Conscious*, edited by Kwame Anthony Appiah and Amy Gutmann, 30-105. Princeton, NJ: Princeton University Press.
- Astuti, Rita, Solomon, Gregg A., and Carey, Susan. 2004. *Constraints of Conceptual Development: A Case Study of the Acquisition of Folkbiological and Folksociological Knowledge in Madagascar*. Oxford, UK: Blackwell.
- Bolnick, Deborah A. 2008. "Individual Ancestry Inference and the Reification of Race as a Biological Phenomenon." In *Revisiting Race in the Genomic Age*, edited by Barbara A. Koenig, Sandra S. Lee, and Sarah S. Richardson, 70-88. New Brunswick, NJ: Rutgers University Press.
- Du Bois, William Edward Burghardt. 1940. *Dusk of Dawn: An Essay Toward an Autobiography of a Race Concept*. New York: Harcourt, Brace.
- Fredrickson, George M. 2003. *Racism: A Short History*. Princeton, NJ: Princeton University Press.
- Gil-White, Francisco J. 2001. "Are Ethnic Groups Biological 'Species' to the Human Brain?" *Current Anthropology* 42: 515-554.
- Glasgow, Joshua. 2007. "Three Things Realist Constructionism about Race - or Anything Else - Can Do." *Journal of Social Philosophy* 38: 554-568. doi: 10.1111/j.1467-9833.2007.00398.x.
- Glasgow, Joshua, Shulman, Julie L., and Covarrubias, Enrique G. 2009. "The Ordinary Conception of Race in the United States and its Relation to Racial Attitudes: A New Approach." *Journal of Cognition and Culture* 9: 15-38.
- Gossett, Tom. 1963. *Race: The History of an Idea in America*. Dallas, TX: SMU.
- Gould, Stephen Jay. 1996. *The Mismeasure of Man*. New York: Norton.
- Hirschfeld, Lawrence A. 1996. *Race in Making: Cognition, Culture, and the Child's Construction of Human Kinds*. Cambridge, MA: MIT Press.
- Isaac, Benjamin H. 2004. *The Invention of Racism in Classical Antiquity*. Princeton, NJ: Princeton University Press.
- Kitcher, Philip. 1999. "Race, Ethnicity, Biology, Culture." In *Racism: Key Concepts in Critical Theory*, edited by Leonard Harris, 87-117. Amherst, MA: Humanity.
- Lewontin, Richard C. 1972. "The Apportionment of Human Diversity." *Evolutionary Biology* 6: 381-398.
- Machery, Edouard, and Faucher, Luc. 2005a. "Why Do We Think Racially?" In *Handbook of Categorization in Cognitive Science*, edited by Henri Cohen and Claire Lefebvre, 1009-1033. Amsterdam: Elsevier.
- Machery, Edouard, and Faucher, Luc. 2005b. "Social Construction and the Concept of Race." *Philosophy of Science* 72: 1208-1219. doi: 10.1086/508966.
- Mallon, Ron. 2004. "Passing, Traveling and Reality: Social Constructionism and the Metaphysics of Race." *Noûs* 38: 644-673. doi: 10.1111/j.0029-4624.2004.00487.x.
- Mills, Charles. 1998. *Blackness Visible: Essays on Philosophy and Race*. Ithaca, NY: Cornell University Press.
- Olson, Kristina R., and Dunham, Yarrow D. 2010. "The Development of Implicit Social Cognition." In *Handbook of Implicit Social Cognition: Measurement, Theory, and Applications*, edited by Bertram Gawronski and B. Keith Payne, 241-254. New York: Guilford.
- Root, Michael. 2000. "How We Divide the World." *Philosophy of Science* 67: S628-S639.
- Rosenberg, Noah A., Pritchard, J. K., Weber, J. L., Cann, H. M., Kidd, K. K., Zhivotovsky, L. A., and Feldman, M. W. 2002. "Genetic Structure of Human Populations." *Science* 298: 2381-2385. doi: 10.1126/science.1078311.
- Taylor, Paul C. 2000. "Appiah's Uncompleted Argument: W. E. B. Du Bois and the Reality of Race." *Social Theory & Practice* 26: 103-128.

Social Capital

LIJUN SONG
Vanderbilt University, USA

The concept of social capital has grown into a burgeoning theoretical tool in multidisciplinary research and public discourse on health during the last two decades. The key figures who popularized this concept and stimulated its theoretical development include three sociologists, Pierre Bourdieu, James S. Coleman, and Nan Lin, and one political scientist, Robert D. Putnam. Their diverse definitions and operationalizations of social capital have stimulated extensive confusion and debate over its measurement and health consequences. Two perspectives are distinguishable (Song, Son, and Lin 2010; Song 2013a): the network-based approach by Bourdieu and Lin, and the normative approach by Coleman and Putnam. The normative approach, Putnam's notion of social capital in particular, absorbed by public health researchers, has dominated the health literature. It is necessary to introduce these different frameworks of social capital and their applications in the health literature separately.

THE NETWORK-BASED APPROACH

Bourdieu: exclusive resources from durable networks

Bourdieu (1986 [1983]) is the pioneer in the conceptualization of social capital. He defines it as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition - or in other words, to membership in a group - which provides each of its members with the backing of the collectivity-owned capital, a 'credential'

which entitles them to credit, in the various senses of the word" (1986, 248–9). He operationalizes its volume as two factors: the size of the network of connections and the volume of the capital possessed by network members (249). He emphasizes its embeddedness in the network of relationships beyond geographical, economic, and social space. He argues for its convertibility to other forms of capital (economic, cultural) in the process of stratification production and reproduction, and its independent effect on profit obtainment net of other forms of capital.

The fact that Bourdieu does not discuss the measurement and health impacts of social capital explicitly paves the way for limited and controversial empirical applications of his work in the health literature. Some scholars (Stephens 2008) state that Bourdieu's idea of social capital cannot be quantified at the individual level. Some (Ziersch et al. 2005; Carpiano 2006) measure Bourdieu's concept of social capital using multiple indicators at the neighborhood level such as neighborhood social participation and connections, informal social control, social support, social leverage, neighborhood trust, reciprocity, and neighborhood safety. They find mixed evidence on the associations between those diverse indicators and health outcomes. Those quantitative studies are criticized for incomplete application of Bourdieu's framework in that they constrain attention to social capital embedded in geographical locations and measure social capital as existing concepts using secondary data (Stephens 2008).

Lin: resources embedded in social networks

Lin (2001) builds his theory of social capital on his original social resources theory (1982). He defines social capital as "resources embedded in a social structure that are accessed/or mobilized in purposive actions" (1982, 29)

and operationalizes it strictly as resources (e.g., wealth, power, reputation, and social networks) of one's network members. Lin and colleagues (Lin and Dumin 1986; Lin, Fu, and Hsung 2001) developed the position generator to measure social capital. This instrument asks individuals to identify their contacts associated with a representative sample of occupational positions salient in a society. Three social capital indices are usually created: diversity (the total number of positions in which individuals identify one contact), upper reachability (the highest prestige score of occupations to which individuals have access), and extensity (the difference between the highest and lowest prestige scores of occupations to which individuals have access). These indices are consistent with Bourdieu's operationalization of social capital (network size and network members' personal capital). In addition, social capital can be derived from two other network instruments: the name generator (Burt 1984), which asks people to name a fixed number of contacts (usually five) with whom they discuss important matters; and the resource generator (Snijders 1999; Van der Gaag and Snijders 2005), which asks people to identify contacts associated with a list of resources across multiple life domains. Social capital is then calculated as socioeconomic attributes of named contacts or access to different resources from identified contacts.

Lin (2001) distinguishes social capital from its sources and returns. He theorizes the contingency of social capital on structural stratifiers (ascribed sources such as gender, race, family origins, and achieved sources such as prior socioeconomic status) and network attributes (tie strength and network location). Assuming that social capital acts as valuable social resources, he proposes that social capital can advance instrumental (e.g., wealth, power, and reputation) and expressive (e.g., health and life satisfaction) returns.

Social capital as conceived and measured in Lin's framework may protect health through multiple mechanisms (Song 2011a), such as providing various forms of social support, decreasing stress exposure, increasing the use of health services, enhancing healthy norms and behaviors, reinforcing psychological resources, and advancing social status. Its positive associations with diverse health-related outcomes (e.g., physical health, mental health, health information search, health lifestyle, lower body weight, and life satisfaction), and its interplay with established social determinants of health (e.g., age, gender, race/ethnicity, socioeconomic status, and social integration) have been documented across societies (e.g., Webber and Huxley 2007; Moore et al. 2009; 2011; Song and Lin 2009; Song 2011a; Legh-Jones and Moore 2012; Song and Chang 2012; Verhaeghe and Tampubolon 2012). A couple of recent studies, however, are challenging the original social resource assumption (Song 2011b; 2013b). They demonstrate both positive and negative health impacts of social capital on health and well-being, and institutional contingency of those impacts across societies. Two explanations are possible for the dark side of social capital: the stressful cost of maintaining social networks where social capital is embedded; and the stressful relative deprivation due to negative comparison with resource-rich network members.

THE NORMATIVE APPROACH

Coleman: functional social-structural resources

Coleman's (1988) seminal work on the role of social capital in the creation of human capital called multidisciplinary attention to the term "social capital." Coleman (1990, 302) defines

social capital as functional "social-structural resources" derived from structures of social relations: "Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within that structure." With this broad definition, Coleman proposes six forms of social capital that facilitate actions: (1) social cohesion (obligations, expectations of reciprocity, and trustworthiness); (2) informational support from social relations; (3) norms and effective sanctions; (4) authority relations; (5) appropriate social organizations; and (6) intentional organizations. Coleman discusses five structural sources of social capital, including network closure, stability of social structure, collectivist ideology, affluence, and government support. He emphasizes the positive role of social capital as a public good which favors the collective, while also recognizing its operation at the individual level. He briefly illuminates the importance of social capital for health, mentioning that the lack of trust between patients and physicians increases costs of and decreases access to medical care (1990).

The theory of social capital as collective efficacy (Sampson, Raudenbush, and Earls 1997) builds on and extends Coleman's work into the health literature. As a social good that meets collective needs, collective efficacy is the degree of neighbors' mutual trust and willingness to intervene in social control for the common good. It is operationalized as three elements: informal social control (i.e., neighbors are counted on to intervene), social cohesion (i.e., neighborhood is close-knit; neighbors help each other, get along with each other, and share values), and trust (i.e., neighbors can be trusted). Collective efficacy may influence health positively by depressing health risks in neighborhoods, creating stress buffers such as social support and safety nets,

and maintaining and achieving health-relevant resources such as educational, clinical, and housing resources (Drukker et al. 2005). Empirical evidence is mixed, varying by the element of collective efficacy, health outcome, and race/ethnicity (Drukker et al. 2003; 2005).

Putnam: facilitating features of social organization

Putnam's work (1993; 2000) popularized the term "social capital" beyond the academic community and brought it into public discourse. Drawing on Coleman's work, Putnam defines social capital as facilitating features of social organization, and operationalizes it as three elements: social participation in formal and informal organizations and activities, norms of reciprocity, and trustworthiness. Like Coleman, Putnam emphasizes the positive function of social capital as a public good and measures social capital at the state level, while recognizing its operation as a private good. Putnam reports an overall decline of social capital in American society and attributes that decline to multiple macro-level factors, such as pressures of time and money, residential mobility and sprawl, electronic entertainment, and generational change. Putnam argues for positive health returns to social capital and reports positive correlations between state-level social capital and public health and well-being.

Putnam's concept of social capital dominates the health literature. Health researchers measure Putnam's notion of social capital at multiple levels. Its individual-level measurement exerts a compositional effect, while its higher-level measurement (e.g., community, state, region, and even country) has a contextual effect (Kawachi, Kennedy, and Glass 1999). Multiple levels of social capital can protect health through different mechanisms (Kawachi 1999; Kawachi, Kennedy, and Glass

1999). Social capital may function at the individual level through the supply of social support, the impact of social influence on health behaviors, social engagement, and physiological and biological mechanisms. Social capital may operate at the neighborhood levels through the process of informal social control, the maintenance of healthy norms, the enhancement of services and facilities, and the supply of social support. Social capital may perform at the state level through egalitarianism-oriented political participation and policymaking. A huge literature has examined the linkages of multiple levels of social capital as Putnam conceives it to various health outcomes in particular physical health (Kim, Subramanian, and Kawachi 2008). There is stronger evidence for the salubrious effect of trust than for that of social participation and for the protective effect of individual-level measurement than for that of collective-level measurement.

In sum, the network-based approach conceptualizes social capital strictly and narrowly as resources available from one's social networks and network members, emphasizing its role as a social stratifier in the production and reproduction of a hierarchical social structure. The normative approach, in contrast, defines social capital loosely and broadly as the combination of a few relevant but distinct existing concepts (e.g., social cohesion, social integration, and social support), highlighting its function as a public good for the collective. While the normative approach contributes to the revival of those existing concepts, its equalization of social capital with those concepts is criticized for endangering the added theoretical value of social capital (Portes 1998; Lin 2001). Theoretical efforts of discriminating these diverse definitions of social capital and conceptualizing their causal relationships to each other are necessary (Song 2011a; 2013a).

SEE ALSO: Bourdieu, Pierre; Mental Health and Social Networks; Social Support

REFERENCES

- Bourdieu, Pierre. 1986 [1983]. "The Forms of Capital." In *Handbook of Theory and Research for the Sociology of Education*, edited by J. G. Richardson, 241–258. Westport, CT: Greenwood Press.
- Burt, Ronald S. 1984. "Network Items and the General Social Survey." *Social Networks* 6: 293–339.
- Carpiano, Richard M. 2006. "Toward a Neighborhood Resource-Based Theory of Social Capital for Health: Can Bourdieu and Sociology Help?" *Social Science & Medicine* 62: 165–175.
- Coleman, James S. 1988. "Social Capital in the Creation of Human Capital." *American Journal of Sociology* 94: 95–121.
- Coleman, James S. 1990. *Foundations of Social Theory*. Cambridge, MA: Belknap Press of Harvard University Press.
- Drukker, Marjan, Buka, Stephen L., Kaplan, Charles, McKenzie, Kwame, and Van Os, Jim. 2005. "Social Capital and Young Adolescents' Perceived Health in Different Sociocultural Settings." *Social Science & Medicine* 61: 185–98.
- Drukker, Marjan, Kaplan, Charles, Feron, Frans, and Van Os, Jim. 2003. "Children's Health-Related Quality of Life, Neighborhood Socio-Economic Deprivation and Social Capital: A Contextual Analysis." *Social Science & Medicine* 57: 825–841.
- Kawachi, Ichiro. 1999. "Social Capital and Community Effects on Population and Individual Health." *Annals of the New York Academy of Sciences* 896: 120–130.
- Kawachi, Ichiro, Kennedy, B. P., and Glass, R. 1999. "Social Capital and Self-Rated Health: A Contextual Analysis." *American Journal of Public Health* 89: 1187–1193.
- Kim, Daniel, Subramanian, S. V., and Kawachi, Ichiro. 2008. "Social Capital and Physical Health: A Systematic Review of the Literature." In *Social Capital and Health*, edited by I. Kawachi, S. V. Subramanian, and D. Kim, 139–190. New York: Springer Science and Business Media.
- Legh-Jones, Hannah, and Moore, Spencer. 2012. "Network Social Capital, Social Participation, and Physical Inactivity in an Urban Adult Population." *Social Science & Medicine* 74: 1362–1367.
- Lin, Nan. 1982. "Social Resources and Instrumental Action." In *Social Structure and Network Analysis*, edited by P. V. Marsden and N. Lin, 131–145. Beverly Hills, CA: Sage.
- Lin, Nan. 2001. *Social Capital: A Theory of Social Structure and Action*. Cambridge: Cambridge University Press.
- Lin, Nan, and Dumin, Mary. 1986. "Access to Occupations through Social Ties." *Social Networks* 8: 365–385.
- Lin, Nan, Fu, Yang-Chih, and Hsung, Ray-May. 2001. "The Position Generator: A Measurement Technique for Investigations of Social Capital." In *Social Capital: Theory and Research*, edited by N. Lin, K. Cook, and R. S. Burt, 57–81. New York: Aldine de Gruyter.
- Moore, Spencer, Daniel, Mark, Paquet, Catherine, Dubé, Laurette, and Gauvin, Lise. 2009. "Association of Individual Network Social Capital with Abdominal Adiposity, Overweight and Obesity." *Journal of Public Health* 31: 175–183.
- Moore, Spencer, Bockenholt, Ulf, Daniel, Mark, Frohlich, Katherine, Kestens, Yan, and Richard, Lucie. 2011. "Social Capital and Core Network Ties: A Validation Study of Individual-Level Social Capital Measures and Their Association with Extra- and Intra-Neighborhood Ties, and Self-Rated Health." *Health & Place* 17(2): 536–544.
- Portes, Alejandro. 1998. "Social Capital: Its Origins and Applications in Modern Sociology." *Annual Review of Sociology* 24: 1–24.
- Putnam, Robert D. 1993. *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, NJ: Princeton University Press.
- Putnam, Robert D. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon and Schuster.
- Sampson, Robert J., Raudenbush, Stephen W., and Earls, Felton. 1997. "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy." *Science* 277: 918–924.
- Snijders, Tom A. B. 1999. "Prologue to the Measurement of Social Capital." *La Revue Tocqueville* 20: 27–44.
- Song, Lijun. 2011a. "Social Capital and Psychological Distress." *Journal of Health and Social Behavior* 52(4): 478–492.

- Song, Lijun. 2011b. "Does Who You Know in the Structural Hierarchy Protect or Hurt? Network-Based Social Capital and Health in Urban China and the United States." The 106th Annual Meeting of American Sociological Association, Las Vegas, ND, August 20.
- Song, Lijun. 2013a. "Social Capital and Health." In *Medical Sociology on the Move: New Directions in Theory*, edited by William C. Cockerham, 223-257. Dordrecht: Springer.
- Song, Lijun. 2013b. "Bright and Dark Sides of Who You Know in the Evaluation of Well-Being: Social Capital and Life Satisfaction across Three Societies." In *Social Capital and Its Institutional Contingency: A Study of the United States, Taiwan and China*, edited by Nan Lin, Yang-Chih Fu, and Chih-Jou Chen, 312-335. London: Routledge.
- Song, Lijun and Chang, Tian-Yun. 2012. "Do Resources of Network Members Help in Help Seeking? Social Capital and Health Information Search." *Social Networks* 34(4): 658-669.
- Song, Lijun and Lin, Nan. 2009. "Social Capital and Health Inequality: Evidence from Taiwan." *Journal of Health and Social Behavior* 50: 149-163.
- Song, Lijun, Son, Joonmo, and Lin, Nan. 2010. "Social Capital and Health." In *The New Companion to Medical Sociology*, edited by William C. Cockerham, 184-210. Oxford, UK: Wiley-Blackwell.
- Stephens, Christine. 2008. "Social Capital in Its Place: Using Social Theory to Understand Social Capital and Inequalities in Health." *Social Science & Medicine* 66: 1174-1184.
- Van der Gaag, Martin P. J., and Snijders, Tom A. B. 2005. "The Resource Generator: Social Capital Quantification with Concrete Items." *Social Networks* 27: 1-27.
- Verhaeghe, Pieter-Paul, and Tampubolon, Gindo. 2012. "Individual Social Capital, Neighbourhood Deprivation, and Self-Rated Health in England." *Social Science & Medicine* 75(2): 349-357.
- Webber, Martin P., and Huxley, Peter. 2007. "Measuring Access to Social Capital: The Validity and Reliability of the Resource Generator-UK and Its Association with Common Mental Disorder." *Social Science & Medicine* 65: 481-492.

Ziersch, Anna M., Baum, Fran E., MacDougall, Colin, and Putland, Christine. 2005. "Health Implications of Access to Social Capital: Findings from an Australian Study." *Social Science & Medicine* 60: 71-86.

Social Causation of Disease

JOHANNES SIEGRIST
University of Düsseldorf, Germany

There are two main disciplines involved in the scientific inquiry into social determinants of health and disease: medical sociology and social epidemiology. Often labeled "sociology in medicine," this part of medical sociology is concerned with the theoretical bases, the measurement approaches, and the empirical test of hypotheses linking distinct aspects of social reality with the development and course of human disease. As such empirical tests often require the observation of large population groups, there is an obvious need for collaboration between medical sociologists and epidemiologists. Epidemiology deals with the study of the distribution and determinants of health and disease in populations. Accordingly, social epidemiology is defined as "the branch of epidemiology that studies the social distribution and social determinants of states of health" (Berkman and Kawachi 2000, 6).

Research on social determinants of health and disease has witnessed a surprisingly dynamic development over the past few decades, and the collaboration of the two disciplines involved has significantly enhanced scientific progress. It may be premature to give a systematic account of respective knowledge, but nevertheless at least three areas of convergence of international research can be identified: (1) multilevel analyses, (2) international comparative studies, with a special focus on social inequalities in health, and (3)

life course studies. Although interrelated, each of these areas has developed important innovations at the conceptual or methodological level. In this short review, the three areas are briefly described, illustrating some prominent examples of recent scientific progress.

MULTILEVEL ANALYSES

According to Geoffrey Rose (1992), an individual's risk of disease cannot be analyzed in isolation from the disease risk of the respective population. Rather, the social distribution of diseases influences the likelihood of individual health and disease. Social contexts or "collective social forces" (Durkheim) matter for individual health. These contexts offer or prevent access to environments or resources that are amenable to individual health (e.g., housing, work environment, nutrition). They influence individual behavior by shaping norms and lifestyles and by inducing rapid social change in terms of increased social and regional mobility, migration, or even social anomie. Research that focuses exclusively on the individual level of risk may lose sight of these important contexts. Therefore, at the methodological level, the challenge exists of how to link individual-level data on health risks with social-context-level data on health risks. This challenge has been met by introducing statistical multilevel analysis. In this approach, assessment of exposures at an environmental or community level is combined with assessment of exposures at individual level in a way that allows for disentangling respective effects. More specifically, this analysis enables researchers to separate compositional from contextual effects on health.

A well-established epidemiological finding may illustrate this difference: the association of neighborhood deprivation with mortality. A compositional explanation of this association claims that higher rates of mortality in a poor

neighborhood result from the aggregation of poor inhabitants living in this environment, and as poor inhabitants carry an elevated mortality risk the environmental effect is fully accounted for by summing individual risks. In contrast, a contextual explanation argues that specific features of the social environment (e.g., level of pollution, crime rate) have the potential of increasing the mortality risk of all people living in that environment, independent of or in addition to individual disease susceptibility. In this case, the mortality risk of otherwise wealthy people living in such an environment would be higher than that of wealthy people living in a less deprived neighborhood. In fact, several studies examining the relative importance of contextual and individual factors or the interaction between them have demonstrated that context matters (Macintyre and Ellaway 2000). One such study using multilevel modeling explored the effect of neighborhood characteristics on risk of coronary heart disease. After adjusting for socioeconomic, behavioral, and medical risk factors at the individual level, a significantly increased incidence was observed among the group of people living in a deprived neighborhood compared to those living in a more favorable environment (Diez-Roux et al. 1997). Similar findings were evident for other health outcomes, including long-term illness, smoking, alcohol consumption, and all-cause mortality. However, negative results were also reported where environmental exposures were explained by compositional effects.

Another direction of socio-epidemiological research applying multilevel analysis concerns the contribution of income inequality to morbidity and mortality differences. In this highly debated research area, the income inequality of a state or a district, as measured by the Gini coefficient, is considered a contextual stressor affecting health above and beyond the individual-level effects of low income, poor education, or other measures of low socioeconomic