Social Foundations of Health Care Inequality and Treatment Bias

Karen Lutfey Spencer1 and Matthew Grace2

1Department of Health and Behavioral Sciences, University of Colorado Denver, Denver, Colorado 80217; email: karen.spencer@ucdenver.edu
2Department of Sociology, Indiana University, Bloomington, Indiana 47405; email: mkgrace@indiana.edu

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Abstract

It is widely assumed that the use of medical care will lead to improvements in health, yet questions remain about the medical system’s contributions to health disparities. In this review, we examine these issues with a specific focus on how health care systems may actually generate or exacerbate health disparities. We review current knowledge about inequality and bias in the health care system, including the epidemiology of such patterns and their underlying mechanisms. Over the past three decades, we observe growth in our knowledge about provider cognitive and psychological processing, including the development of precision measuring tools to analyze provider bias, racial and otherwise. In the same timeframe we observe decreased emphasis on social, interactional, organizational, and structural factors that shape variation in medical treatment. We frame our discussion within a modified social ecological model and discuss tools for moving forward and reinvigorating sociological presence in this important research area.
They (patients who are labeled as drunks) are more consistently treated as undeserving than any other category of patient. They are frequently handled as if they were baggage when they are brought in by police; those with lacerations are often roughly treated by physicians; they are usually treated only for drunkenness and obvious surgical repair without being examined for other pathology; no one believes their stories; their statements are ridiculed; they are treated in an abusive or jocular manner; they are ignored for long periods of time; in one hospital they are placed in a room separate from most other patients. Emergency-ward personnel frequently comment on how they hate to take care of drunks. (Roth 1972, p. 843)

Frequently, women of her generation and her cultural background are really family matriarchs. And providing calorie-dense foods, which are often fatty, is part of how they take care of their families. And then it’s very difficult for them to eat in a manner that’s different from that (Lutfey et al. 2008, p. 1394)

He was smartly dressed in a collar and tie, which can be misleading but is indicative of someone who cares about their appearance rather than someone that might turn up sort of unshaved, dirty, etc. So he’s someone who has, you know, I presume from what I’ve seen, good levels of self-care. (Lutfey et al. 2008, p. 1395)

INTRODUCTION

Implicit in much research and ideology around medical practice is the assumption that people will have improvements in their health if they are able to access medical care. Certainly, the role of medical care in improving population health has been shown to be secondary to broad improvements in social conditions, including historical innovations such as clean water and increased sanitation (Link & Phelan 1995, McKeown 1976, McKinlay & McKinlay 1977). At the same time, the assumed importance of medical care is underscored by decades of prolific research on access and utilization, which conceptualizes medical treatment as a potential leveler of otherwise differential health outcomes: If people can accurately identify symptoms, decide to seek help, and have adequate resources to access care, it is presumed that they would benefit from medical care (Starfield et al. 2012). Within this broader context, however, persistent questions remain about how health care systems may actually generate or exacerbate health disparities.

This topic has a long and varied history, both within sociology and in neighboring disciplines, including, but not limited to, health services research, social and cognitive psychology, economics, medicine, public health, anthropology, and epidemiology. Scientific and policy agendas centered on health disparities have proliferated in recent years following the Institute of Medicine’s reports Crossing the Quality Chasm: A New Health System for the 21st Century (IOM 2001) and Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care (IOM 2003). Across disciplines and paradigms, researchers continue to examine how health disparities arise and are sustained (Diez Roux 2012).

The roadmap for answering these questions is complex, multidisciplinary, and historical. The epigraphs above illustrate some key aspects of the issue. For example, in the first quotation above, from 1972, Roth reports from ethnographic research that patients are openly treated differentially based on observable characteristics deemed socially undesirable (e.g., being drunk). In this context, unequal treatment is justified as a necessary triaging process for completing work in a busy emergency room (ER) environment. More than 30 years later, in 2008, Lutfey and colleagues (2008) report qualitative think-aloud data from physicians in a vignette study where characterizations of patients are much more circumspect—and potentially illustrative of modern bias puzzles in today’s literature. In the second quotation, assumptions about a patient’s dietary behavior are framed not in terms of her personal characteristics, but rather in terms of her generational and cultural
membership (“family matriarchs”)—that is, anticipated limitations in her adherence behavior are attributed to flaws in her culture rather than to personal failures, illustrative of sociological work on symbolic (Bobo 1983) and new racism (Bonilla-Silva 2010). Similarly, in the third quotation, a patient’s social value and sophistication is inferred from his appearance, although with the self-aware caveat that such considerations may be “misleading.” As we elaborate below, research on inequality in medicine has made great strides in identifying cognitive sources of racial bias in recent decades, thus building on and extending work (including Roth’s) that has been unable to make unconfounded estimates of the influence of race compared to other factors such as socioeconomic status (SES). As a result, our knowledge about psychological sources of racism and implicit bias has improved immensely. At the same time, unanswered questions abound, and we are concerned about a diminished sociological presence in ongoing research about inequality in health care.

Modified from a basic social ecological model (SEM), Figure 1 provides a conceptual map for our discussion. Most generally, SEM models provide a theoretical apparatus for considering how individuals are nested in a series of increasingly broader networks and systems, all of which work

Figure 1
A modified social ecological model of medical decision making. Abbreviation: SES, socioeconomic status.
together to influence health (McLaren & Hawe 2005). We have modified the SEM to include at the center not a sole individual but rather, from a health services perspective, a patient and a provider. (Empirically, we recognize that patient-provider interactions are not limited to dyads, as patients often interface with multiple providers and providers often interact with patients’ family members; we envision these types of interactions as part of this conceptual map.) Both parties are nested in these rings of social influence, ranging from the micro aspects of health care related to personality and interaction to the macro aspects related to organizations, payment structures, and culture. Outcomes of interest focus on processes of medical care, such as clinical decision making and patient-provider relationships, which are presumed to play a role in individual health outcomes and disparities.

Many areas of growth in recent decades have focused on the very center of this model (in many cases, on the provider alone), concentrating on the mechanism of cognitive bias (implicit, explicit, or dual processing), the provider as the locus of bias (and thereby the locus of potential intervention), and individual demographic characteristics that are operationalized as proxies for other social factors (race or SES in lieu of an evaluation of the patient’s social context). Less present is attention to the surrounding rings of context, which are also relevant for thoroughly understanding sources of bias and inequality in health care. These sociological contributions use multiple levels of analysis, situate individual actors in their broader social contexts, and analyze how demographic predictors may be proxies for more complex and situational decisions, rationalizations, and accounts for actions. We believe that both approaches, the one focusing on the center of our model and the one expanding to the outer rings of Figure 1, are not only viable but also necessary. Yet, the former approach has accelerated rapidly in recent years, whereas the latter has decreased in prominence, and the resulting literature reflects the strengths and weaknesses of both perspectives. We seek to elaborate on these trade-offs.

EPIDEMIOLOGY OF INEQUALITY IN MEDICAL PRACTICE

A first step in understanding the nature of differential health outcomes in medical care is operationalizing and measuring differences within a complex social environment. This process is made difficult by confounds at several levels. We know, for example, that there are biological differences in who gets sick, in which ways, and in how health conditions manifest into symptoms (Read & Gorman 2011, Rieker et al. 2010). We also know there are demographic and social differences in how people recognize symptoms and decide to seek help (Pescosolido et al. 1998, Zola 1973), as well as in their ability to seek medical care based on access and affordability (Andersen & Newman 1973, Boyer & Lutfey 2010, Pescosolido 1992). Once people arrive in the medical system, patients and families become embedded in complex organizational systems that involve multiple actors and are constrained (and facilitated) by varying policy and cultural contexts (Pescosolido 2011, Pescosolido & Boyer 1999). Isolating variation in diagnostic and treatment decisions according to patient, provider, or organizational attributes therefore requires controlling for all these sources of variability. Recent literature has contributed mightily to this undertaking. Methodologically, the use of vignettes, audit studies, factorial experiments, and the novel application of more sophisticated multilevel statistical modeling have all facilitated the process of making unconfounded estimates of the relative contributions of each of these actors and levels of social organization. We observe at least three generations of substantive results in this area, focusing on patterns related to patient attributes, provider characteristics, and broader organizational and cross-national system influences. Conceptually, much of this research is situated at the center (patient and provider characteristics) of our Figure 1 but also extends to the outermost spheres of influence (interpersonal, organizational, cultural, and policy issues).
Patient Characteristics

Patient characteristics (e.g., gender, age, race, and SES) have been shown to consistently predict diagnostic and treatment decisions, even when controlling for access to and utilization of medical care and when the presenting signs and symptoms of disease are held constant or controlled.

Race. Studies published after the 2003 IOM report Unequal Treatment suggest that profound discrepancies based on patient race and ethnicity persist across a diverse range of conditions, clinical scenarios, and stages of the life course. For example, research on treatment inequities finds that black men are approximately 20% less likely to receive recommendations for coronary artery bypass grafting compared to white and Hispanic men (van Ryn et al. 2006). In a more recent study on the postsurgical phase of care, nonwhite patients are still reported to have 33% higher risk-adjusted mortality rates than white patients, with differences in medical care explaining much of the observed disparity (Rangrass et al. 2014). Similar patterns occur for other aspects of coronary heart disease (Johansen et al. 2015, Schulman et al. 1999), diabetes (Goonersekera et al. 2015, McKinlay et al. 2012), and pain management (Goyal et al. 2015, Green et al. 2003, Hirsh et al. 2015). Racial differences have also been documented for children: In a retrospective cohort study of pediatric patients presenting with severe bacterial infections, black children were significantly less likely to receive acute respiratory tract infection diagnoses or to be prescribed broad-spectrum antibiotics compared to nonblack pediatric patients (Gerber et al. 2013).

Gender. Gender disparities in health are well studied, and researchers have identified a wealth of factors contributing to those differences. These patterns are also embedded in several aspects of the medical system (Kent et al. 2012). A well-documented phenomenon has been the exclusion of women from medical research, largely due to concerns about the variation introduced by menstrual cycles and the possibility of exposing pregnant women and fetuses to hazardous pharmacological treatments (Rieker & Bird 2008). Differences in research and resulting knowledge bases are, in turn, related to observed variation in the health care women receive. For example, in the 2010 Agency for Healthcare Research and Quality’s National Healthcare Quality Report, females were more likely than males to be either delayed in receiving or unable to obtain needed medical care, dental care, or prescription medicines in each of five consecutive study years. At the same time, in 2007, the percentage of female patients who received potentially inappropriate medications was significantly higher than for male patients (18.1% compared to 11.8%) (AHRQ 2010). A series of vignette studies indicate that women are less likely than men to be diagnosed and treated for symptoms of heart disease even when presenting symptoms are standardized (Adams et al. 2006; Arber et al. 2004, 2006), and the difference is exacerbated for younger women as physician diagnostic certainty declines with patient age. Higher levels of diagnostic uncertainty are, in turn, tied to different treatments such as fewer follow-up questions, fewer tests/exams, and a lower likelihood of prescribing cardiac medication (Lutfey et al. 2009)—omissions that are often justified in terms of assumptions about existing medical knowledge of women’s bodies (Shim 2014).

Social class. As is the case with gender, social class (or SES) has been well studied in the broad context of health disparities (Adler & Newman 2002), but less is known about the unconfounded effects of SES on medical treatment. Both qualitative and quantitative studies suggest that perceptions of patients’ social class standing inform physicians’ attitudes toward patients and their approaches to treatment. For example, a vignette survey of senior medical students failed to find treatment decision variation by patient gender or race, but higher SES patients were significantly more likely to receive procedural recommendations compared to their lower SES counterparts.
Williams et al. 2015). Similarly, racial gradients in colorectal cancer survival are largely explained by differences in treatment by SES (Le et al. 2008). In a study of post-angiogram patients where physicians evaluated patients’ anticipated adherence, lower SES patients were viewed as less likely to attend prescribed cardiac rehab than their more affluent counterparts (van Ryn & Burke 2000). Perceived adherence has been tied to SES in other studies as well: In her study of parent-staff interactions in a neonatal intensive care unit (NICU), Anspach (1993) found that NICU staff adjusted the sophistication of their vocabulary according to their perceptions of the parents’ educational attainment. Furthermore, Anspach discovered that providers’ assumptions regarding the medical knowledge and religious beliefs of the parents also shaped the extent to which they allowed parental participation in life-and-death decision making. More recent research illustrates how patients utilize class-based resources to influence physician behavior. Gengler’s (2014) study of families with children with life-threatening diseases found that parents from the middle and upper class have higher levels of cultural health capital, reflected in their ability to conduct thorough research on their children’s health issues and to informally consult medical professionals within their personal networks. Armed with this information and a willingness to negotiate with, and occasionally challenge, medical providers whom they perceive as providing insufficient care, parents of greater social standing are better able to shape the type of care their children receive.

Physician Characteristics and System Attributes

Variation in medical care extends well beyond differences by patient characteristics. Given observed patterns in health behaviors, utilization, and access to care, we know that patients are not randomly distributed among providers. However, even in vignette factorial experiments wherein physicians are randomized to patients, individual physician characteristics such as gender, specialty, and level of experience are robust predictors of differences in clinical diagnostic and treatment decisions (McKinlay et al. 2002, Shackelton-Piccolo et al. 2011). By extension, patient-provider race concordance has been associated with positive health outcomes and patient satisfaction (Kumar et al. 2009, Malat 2001, Meghani et al. 2009).

System Attributes and Geographic Variation

Of course, clinical decision making is no longer viewed as occurring within the closed system of the doctor-patient relationship, and as Freidson (1970) predicted over 40 years ago, work setting characteristics are a major determinant of physician behavior (sometimes even more important than individual characteristics; see Ross & Duff 1978). These system factors are sometimes local to the practice environment, such as organizational size, ownership, location, and practice culture (Caroe et al. 2003, Kralawski et al. 2005, Shackleton et al. 2009), but they may also include, for example, time pressures and cognitive load (Burgess 2010, Stepanikova 2012). The type of hospital in which a physician works may also influence the amount of time he or she spends with the patients. Because physicians who work at high prestige hospitals and dedicate a greater portion of their time to patient care are more likely to be held in low esteem by their colleagues (Menchik & Meltzer 2010), physicians in these institutions may be compelled by informal constraints to spend less time with their patients. Even technologies often assumed to improve efficiency and reduce costs may have unintended negative consequences. For instance, reduced eye contact stemming from the use of electronic medical records may make it more difficult for physicians to provide empathy and support to patients (Wright 2011). Finally, geographical differences such as regional (McGlynn 1998, Song et al. 2010, Welch et al. 2011) and cross-national (Bekelman et al. 2016, Corallo et al. 2016).
2014) variations have been extensively examined and add another important dimension to our knowledge on variations in medical care.

MECHANISMS EXPLAINING OBSERVED VARIATION IN MEDICAL CARE

Considered as a whole, the epidemiologic research outlined in the previous section identifies a long list of factors that are robust predictors of variation in medical care. At the same time, there is a need to better understand the mechanisms underlying those observed patterns, as discussed below.

Collaborative Assessments of Social (and Moral) Worth of Patients

From a sociological perspective, medical organizations (as is the case with law, education, and social welfare organizations) are not value-neutral spaces where people provide professional services in a social vacuum, but rather spaces in which professionals apply cultural knowledge and cognitive shortcuts, much as they do in lay settings (Becker et al. 1961). The 1950s, 1960s, and 1970s witnessed a growth in research on the moral evaluation of patients as a source of, or justification for, differences in treatment. The evaluation of patients’ worthiness was first explored in the field of mental illness (Belknap 1956, Scheff 1966, Szasz 1960), where it was assumed that conceptually underdeveloped psychiatric diagnoses were barely more than moral evaluations of patients, and limitations of technical diagnostic criteria (in a pre–Diagnostic and Statistical Manual of Mental Disorders era) left few alternatives to such assessments. Szasz’s (1960) The Myth of Mental Illness argued that, unlike cancers, mental illnesses lack underlying and falsifiable diagnostic biomarkers, implying that all mental illnesses are fundamentally about problems in living—and thereby mental illness diagnoses are a mechanism for social control.

Roth (1972) challenged the notion that this assessment process was contained to the domain of mental illness. To elaborate this argument, he explicitly built on the mental illness literature but also on studies of end of life, such as Glaser & Strauss’s (1964) demonstrations of how the social worth of dying patients influences the nursing care they receive, and Sudnow’s (1967) ethnographic study of how dying patients are managed in ERs. Using data from six hospital emergency services on both coasts of the United States, Roth shows not only that patients are evaluated in terms of their social characteristics, but also that “moral evaluation also has a direct effect on a physician’s diagnosis and treatment recommendations” (Roth 1972, pp. 839–40). Roth demonstrates how patient characteristics can inform determinations about whether patients are deserving or undeserving, legitimate or illegitimate; in turn, such assessments generate information that can be used for or against them. Financial status, type of employment, insurance protection, and legitimacy of children are all clues to the social worth of patients as treatment decisions are being made—information that can even be gleaned from the patient’s purse and wallet should he or she arrive to the ER unconscious. Patients assessed as “dirty,” “smelly,” “drunks,” “dressed as hippies,” or women arriving to the hospital with “scanty clothing” were all “frowned upon” and likely to be delayed in accessing care and hurried through the evaluation process once they were seen by a physician (Roth 1972, p. 843).

Compared with the current use of statistical modeling to control variation, Roth’s ethnographic approach limited his ability to make a solid empirical claim that race, and not some other social characteristic, was driving the differential assessments of patients. In some ways, this methodological and conceptual framework may have limited his ability to examine questions that dominate research today, but in other ways it opened his study to alternative explanations that are often left
unexamined in much of today’s literature on provider bias. For example, Roth identifies race as a
potential basis for staff evaluation of patients, but his discussion of this issue remains brief, as it “is
difficult to detect nowadays because everyone is extremely sensitive to the possibility of accusations
of racial discrimination” (Roth 1972, p. 843). Instead, he considers how race and gender intersect
in the case of a woman and children presenting as a “welfare case,” and that intersection is further
differentiated along SES lines when hospital registration clerks press for more information about
the presence of a father in the household—a question that is asked overtly when patients appear
by dress and speech to have low SES, and more discreetly when they appear to have higher SES.

Several other studies used a multilevel sociological approach to examine how assessments of
patients’ social worth operate in the context of medical care. Leiderman & Grisso (1985) elabor-
rated the “gomer” (Get Out of My Emergency Room) phenomenon; Biener (1983) considered
how substance use influenced the providers’ sense of whether taking care of a patient would be
sufficiently rewarding; Kadushin (1962) examined how social distance varied among physicians,
ministers, and psychotherapists, and how this predicted the types of problems patients/clients
shared; and Lorber (1975) studied “good” and “problem” surgical patients.

Elements of this classic work can be found in several notable ethnographic studies from the
past 20 years. Timmermans’s (1998, 1999) study of resuscitative efforts in two emergency de-
partments found repeated evidence that a patient’s position in the social hierarchy affected his or
her treatment. Emergency staff lacked sympathy for alcohol- and drug-addicted patients. When
resuscitating intravenous drug users, team members doubled up on surgical gloves and avoided
touching the patient when possible. Similarly, drunken patients were more likely to be nasally in-
tubated than to receive the less painful tracheal intubation. Overall, the lower the social standing
of a patient, the lower the likelihood that the staff would exhaust all resuscitative options to save
him or her. In many instances, patients of low social viability were declared dead in advance of
their actual death.

Similarly, Lara-Millan’s (2014) ethnographic study of triage in an urban ER found that staff
members make differential attributions about patients’ motives for seeking care based on racial,
gendered, and class-based stereotypes. Staff members in the ER were more willing to pursue
medical information from Latinas who indicated they were in relationships with Latino men on
the assumption that these men were migrant laborers and thus not involved in criminal activity; by
contrast, African American women who linked themselves to African American men were likely
to be seen as being involved in these relationships as a means to support illegal activities like
prostitution or drug use. Similarly, whereas men who brought children to the ER were viewed as
caring fathers, women with children were perceived as being welfare dependent and utilizing the
ER to gain access to painkillers.

Several cases stand in contrast to these studies. Jenkins’s (2015) study of medical trainees
involved in end-of-life care found that staff members’ preference to not pursue the full spectrum
of resuscitative efforts for the very old or the very sick were not due to the social viability or social
worth of the patient, but rather reflected the type of treatment that providers would wish for
themselves in their old age. Also in the area of end-of-life care, Crane (1975) found that physicians
viewed functional ability to perform social roles to be more important than social worth in making
treatment decisions [see also Zussman’s (1992) consideration of age rather than social worth in
the context of intensive care]. Elsewhere, Volk and colleagues (2011) found that although moral
worth was never explicitly discussed in patients’ liver transplant candidacies, committee members’
perceptions of patients’ education, intelligence, and financial resources nevertheless factored
into their assessments. In each of these cases, people were extremely ill, facing end-of-life care,
intensive care, or transplant; the prospect of a different (or modified, or differentially presented)
decision-making calculus in these serious illness situations is important fodder for future research on mechanisms driving variation in medical care. Despite their varied findings, these studies illuminate how prolonged engagement in the field illuminates the microinteractional processes (Heritage & Maynard 2006) that occur in medical settings and produce treatment disparities. In the context of our Figure 1, these approaches are concerned with multiple spheres of influence that shape how providers assess patients in collaboration with their colleagues.

**Implicit and Explicit Bias**

A very different type of mechanism for explaining differential medical treatment centers on providers’ cognitive and psychological bias (in our Figure 1, it centers directly on the physician). Generally, social psychological studies of bias in clinical decision making are concerned with stereotyping, prejudice, and discrimination in the evaluation of patients. These topics resonate with social psychological research in the areas of perception, cognition, and schematic processing (Michener et al. 2004). Schemas are well-organized structures of cognition used for processing and organizing information collected from our environments, and these mental categories exist for events, roles, people, etc. Especially in situations where there is missing information, schematic inference is used to fill in missing information based on characteristics of the schema for which information is already available. In a context where anatomical markers and underlying disease conditions are complex or ambiguous, physicians may invoke such schematic processing to fill in missing information, which may mean that stigmatizing cues have a greater impact on decision making. For example, in the case of racial variations, Balsa & McGuire (2001, 2003) suggest that the problem is that white physicians find it difficult to make sense of minority patients’ symptom presentation and rely on statistical averages of their previous experience with people from that group (a process they call statistical discrimination).

These processes may occur consciously or unconsciously, and as a result research in this area has progressed in two relatively distinct veins, conceptually mirroring what in cognitive and social psychology is termed implicit and explicit bias. In some cases these approaches are well integrated, as when Nazione & Silk (2013) consider how doctors’ prejudices about race (implicit bias) interact with their perceptions of patient responsibility and their willingness to help (explicit bias), or when Burgess and colleagues (2006) examine dual processing models in pain management. In many other cases, however, these approaches are not well integrated and result in a somewhat fractured literature (Lutfey 2013).

Studies taking an explicit bias approach are, in general, most clearly aligned with sociological principles, precisely because they engage phenomena that are observable to the researcher and reportable by social actors. The studies described in the previous section and focused on the social worth of patients, as well as the quotations in the epigraph, are all examples of explicit reasoning about patients. Ethnographic and interview data show how providers sometimes interpret observable patient characteristics (i.e., race, gender, class, age) as proxies for cognitive and behavioral dispositions (i.e., motivation, willingness, intelligence) that are considered relevant for understanding the behavior that led to their current health circumstances or for predicting their future behavior.

Although much of the research about explicit reasoning discussed above has been qualitative, the presence of explicit reasoning can also be tested in quantitative study designs. Lutfey and colleagues (2010) tested whether previously observed gender differences in coronary heart disease (CHD) diagnosis and treatment were due to the fact that physicians (a) did not fully consider CHD as a diagnostic possibility or (b) considered CHD but then discounted it as a risk for women. Half
of the physicians in a vignette experiment were primed with explicit directions to consider a CHD diagnosis, whereas the other half were not. Relative to their unprimed counterparts, primed physicians were more likely to order CHD-related tests and prescriptions. However, the main effects for patient gender and age remained, suggesting that physicians treated these demographic variables as diagnostic features indicating a lower risk of CHD for some patients: They were consciously and explicitly treating women as being at reduced risk for CHD relative to their male counterparts, and not simply failing, as a function of implicit bias, to consider CHD when they saw a female patient. In the same study, the physicians explained in a qualitative think-aloud session how their differential diagnostic certainty, combined with gendered considerations about female patients, led them to entertain and treat gastrointestinal and mental health candidate diagnoses before actively treating CHD (Lutfey et al. 2009, Welch et al. 2012). In these cases, explicit, purposeful reasoning guides what turns out to be a biased medical decision.

A second major set of explanations for observed variations in medical decision making and practice centers on implicit, or unconscious, biases. Methodologically, this research leans heavily on the implicit-association test (IAT) as a means to decompose the unique contributions of physicians’ explicit and implicit biases to treatment discrepancies. The IAT is a psychometric tool used to assess associations between social status characteristics and stereotypes regarding these attributes. Respondents who take the IAT engage in a series of evaluative sorting procedures—e.g., sorting words into “good” and “bad” categories—and their performance on these tasks and relative time to completion are used to assess biases toward particular social groups (Greenwald et al. 1998). Studies employing the IAT conceptualize physicians’ implicit biases as a major factor affecting treatment disparities. This research consistently finds that physicians possess strong implicit biases against black and Latino patients, and similarly substantial biases favoring white and middle- to upper-class patients (Blair et al. 2013, Oliver et al. 2014, Sabin et al. 2009). Biases also vary by physicians’ race. Whereas white physicians show the strongest pro-white preferences, black doctors do not possess a marked implicit bias in favor of either white or black patients (Sabin et al. 2009).

Although these studies demonstrate consistent racial and ethnic biases among physicians, with few exceptions (Sabin & Greenwald 2012), these prejudicial attitudes do not consistently translate into treatment disparities. Among a variety of outcomes explored, these studies find that black patients are more likely than white patients to receive optimal treatment for urinary tract infections (Sabin et al. 2008) and just as likely as whites to receive thrombolysis for chest pain (Green et al. 2007). Various methodological issues associated with the IAT, including the study populations used, the increasing prevalence of IAT as a teaching tool, and limitations in the data collection process may account for some of these unexpected patterns in the literature. Another study found that patients’ race has null effects on physicians’ recommendations for total knee replacement despite the doctors’ strong biases against minority group members (Oliver et al. 2014). Such aversive racism, wherein providers are high on implicit bias but low on explicit bias, is hypothesized to shape patients’ reactions to medical encounters (Penner et al. 2009, 2010). Like the self-aware physician in the epigraph who qualifies his conclusion about a patient’s appearance, these psychological biases can be difficult to connect empirically with differential medical treatments.

HOW HAS THE RESEARCH LANDSCAPE CHANGED OVER TIME?

A Tale of Two Papers and a Shift Toward Cognitive Bias

In 1996 and 2000, respectively, sociologist McKinlay (1996) and social psychologists van Ryn & Burke (2000) published similar articles addressing how aspects of the social system, including
provider decision making, contribute to differential outcomes for patients. Both articles were published in journals focused on social science and health issues and commonly read by sociologists, the *Journal of Health and Social Behavior* (McKinlay) and *Social Science and Medicine* (van Ryn and Burke). In both cases, the arguments could be considered full frontal attacks on the dominant Bayesian models of medical decision making, wherein patient characteristics (“priors”) should inform but not overwhelm presenting data (in this case, signs and symptoms of disease) (Ashby 2006, Raftery 1995). The implication present in both articles was that providers were unintentionally contributing to or exacerbating health inequalities.

These papers illustrate two important themes in subsequent research: the notions that (a) bias originating from within the healthcare system is an important contributor to observed differences among patients and (b) patient demographics can be potentially isolated as robust predictors of how patients will be processed in the medical system. This application of sociology to the medical system is central for understanding the proliferation of health disparities research perspectives published since the early 2000s. Certainly, there are important differences between these articles: McKinlay (1996) takes a broad, sweeping view of the social system surrounding medicine and highlights the role not only of the physicians but also of technology and organizations in the generation of diagnostic and treatment decisions (reaching to the outer rings of our conceptual map), marshaling data from multiple types of empirical examples to create an overall picture. By contrast, van Ryn & Burke (2000) concentrate more exclusively on physicians’ assessments of patients (focusing on the center ring of our conceptual map, specifically the provider perspective) and present data from a single survey study with 193 physicians reporting on 618 patient encounters to show how race influences decisions. Both McKinlay and van Ryn & Burke have continued to publish in multidisciplinary outlets on these issues, yet these articles remain seminal to the agendas that subsequently unfolded. McKinlay was acknowledged with the Reeder Award for Distinguished Service to the field in 1995 from the Medical Sociology Section of the American Sociological Association, and van Ryn & Burke’s article is van Ryn’s most-cited publication to date, out of the many that she has published on this topic. And yet a curious difference remains, approximately 20 years later: McKinlay’s article has been cited 140 times, whereas van Ryn & Burke’s article has received over six times as many citations (927, based on Google Scholar Citation Index). Why such difference in scope of influence?

We chose these articles as a comparison case because they are illustrative of broader substantive, methodological, and disciplinary shifts in the literature around inequality and bias in health care, both within sociology and across health-relevant disciplines. Within sociology, we observe a consistently modest output of publications on medical treatment concurrent with an increased and sustained higher publication rate in the area of population health. At the same time, across several health-related disciplines, we see an increase in the volume of published work related to medical treatment, and specifically focused on provider bias. Considered jointly and in terms of our conceptual map, these trends lead to a decreased emphasis on the social, organizational, and structural outer rings of influence on health care inequality and an increased focus on the cognitive and psychological spheres of influence at the center of Figure 1.

It is here that the comparison between McKinlay and van Ryn & Burke provides leverage for understanding how such differences may have developed. Sociological perspectives captured in the broad system-level approach taken by McKinlay are still present in some of the literature.

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1We recognize other publications by van Ryn as relevant to this discussion, particularly van Ryn & Fu (2003). We focus on the 2000 article because, like McKinlay’s, it was published in a social science rather than a medical outlet, thereby allowing for a more direct comparison between the two pieces.
today, where providers are seen as one of many potential sources of multilevel bias to consider, multiple separate sources of data are considered side by side, and decision-making processes are contextualized among the factors beyond the individual; however, this approach is increasingly dwarfed by alternative strategies. A major innovation of both van Ryn & Burke’s and McKinlay’s work was to provoke a sea change by looking inside the health care system for sources of differential treatment, as opposed to decades of looking outside the system, to patients and families, as sources of disparities. This shift continues to represent a critical step forward in our conceptualization of the role of medical care in social stratification, but one that must be considered alongside the increased prevalence of individual, cognitive, and psychological models of bias as explanations for treatment disparities.

PATHWAYS FORWARD: REINVIGORATING SOCIOLOGICAL CONTRIBUTIONS

To be successful, we believe the challenge of reinvigorating sociological presence in this research area should follow some basic principles. First, there is a need to integrate across disciplinary silos: It is insufficient to address these problems from entirely separate and disciplinary-based research teams, journals, and funding streams. There is also a need to think creatively about how sociological tools can be substantively integrated into current research agendas so as to move forward those agendas in meaningful ways. Below, we use the example of the IAT and of so-called new racism as possible domains where current research would benefit from integration across silos. Second, sociology is home to several theoretical orientations that hold promise for expanding our empirical understanding of how discrepancies in medical treatment contribute to broader health disparities. Here, we briefly consider just two—network social capital and cumulative advantage—and situate them in substantive lines of inquiry that we view as pressing next steps.

Integrating Across Disciplinary Silos

As we have discussed at length, an appreciable amount of recent research on provider bias has relied extensively upon the IAT. Despite this proliferation, however, our understanding of how treatment disparities emerge within the doctor-patient interaction has stagnated. If high levels of implicit bias are not necessarily linked to treatment disparities (Sabin et al. 2008), from where does unequal care emerge?

It is on this particular issue that research in the sociology of race and ethnicity provides valuable insights. Studies of new racism show that, in contrast to the overt racism characteristic of pre–civil rights America, contemporary racism rests upon the existence of a collective false consciousness: the widespread belief that our society is at its core meritocratic. The confluence of this ideological stance with embedded, institutionalized forms of racism produces what is called laissez-faire racism—a circumstance in which the profound, historic disadvantages of minority groups are denied and the individual setbacks of minority group members are attributed to their own personal failings or to cultural deficiencies of their racial/ethnic group (Bobo 2001, Bobo et al. 1997). Extending this research, the hypothesis of color-blind racism asserts that in addition to structural advantages, the societal dominance of whites is further enacted at the individual level through subtle behaviors and actions—e.g., dismissive gestures, patronizing comments, terse delivery, and interactional disinterest (Bonilla-Silva 2010). These subtle interactions may also be responsible for the reification of stratification systems based on sex and social class, as contemporary instances of sexism and classism are frequently evident in the coded language that people use and in the institutional arrangements that disadvantage women and low-income individuals.
Although the IAT is clearly invaluable, it is by no means the only tool at our disposal for interrogating the contours of cognitive bias. As Bonilla-Silva (2001, 2010) has elegantly written, stratification systems are reproduced through communicative interaction. Thus, whereas surveys and psychometric measures provide us with a clean and efficient route to analyze a group’s general attitudes, when it comes to understanding how concealed racism, sexism, and classism influence dynamic interaction processes, these methods alone are insufficient. As Bonilla-Silva & Baiocchi (2001, p. 120) argue, if we want to understand how people “explain, justify, rationalize, and articulate” biased attitudes, we need to analyze how people communicate their ideological views using methods that go beyond artificial categorizations or yes/no binaries. In many ways, Bonilla-Silva and Baiocchi are pointing to the ways that racism is not just an implicit attitude that lives in the head of a single actor, but is an iterative, multilevel sociological accomplishment that spans several rings in our conceptual map (Figure 1). It is here that sociology is uniquely equipped to contribute to the discussion on bias and treatment inequality.

Although survey methodology may be able to connect implicit biases to clinical decision-making, it is less effective in addressing actors’ motivations and intentionality—nuanced processes more ably explored in face-to-face interviews and ethnographic observation. A video vignette multifactorial experiment by Welch and colleagues (2012) on physicians’ treatment decisions in the case of CHD underscores this point. Although a survey indicated that physicians’ uncertainty was linked to lower levels of testing and medication administration for women with cardiac conditions, as a standalone source of data this inquiry provided little purchase for understanding why physicians were so uncertain about CHD in women. However, analyzing think-aloud data collected during in-depth interviews, the researchers found that physicians’ uncertainty stemmed from a widely held misconception that classic CHD symptoms are atypical for female patients. Indeed, despite growing knowledge within the medical community that men and women present with similar, clearly defined indicators of CHD, lingering remnants of medical school education lead physicians to expect a different set of symptoms from women compared to men.

Observational studies may similarly shed light on how clinical interactions produce treatment inequities. An obvious place to begin would be with ethnographic studies of race-, gender-, and class-discordant doctor-patient interactions. As Mechanic (1989, p. 148) notes, “the qualitative observer is, in a sense, a research instrument.” By objectively observing discordant clinical interactions, sociologists have the ability to discern instances of microaggressions, othering (e.g., referring to “those” people), sexism, and behavioral indications of discomfort (e.g., refusing to make eye contact) and the degree to which these exchanges translate to treatment inequities. To date, we have very little data on how these interactions influence the dynamics of the patient-provider relationship or the role that they might play in shaping clinical decision making or patient adherence. Consequently, the observation of such interactions in situ is critical for deepening our understanding of health care inequality.

**Network Social Capital**

Inspired by the work of Bourdieu and Coleman, Lin’s (2001) network-based social capital approach conceptualizes social capital as the material (e.g., wealth) and symbolic (e.g., power and status) resources leveraged by an individual through his or her collection of direct and indirect social ties. Applied to medical system disparities, this framework suggests that the network social capital of both patients and providers may contribute to treatment variation. Research indicates that individuals with higher levels of network social capital are more likely to seek out health information from friends, relatives, and the Internet, and further, that the average education of one’s network members is linked to the frequency with which he or she will consult with medical professionals (Shim 2010, Song & Chang 2012).
In light of these findings, future research would benefit from studies that examine the link between social capital and access to medical advice. Examples of these informational resources range from having a friend or family member in the medical profession who can provide informal consultations to getting insights from network alters about how to effectively articulate health problems to the primary care provider. Given the lower levels of social capital among blacks and Hispanics (Moren Cross & Lin 2008) and their lower likelihood of having a physician among their core network contacts (Cornwell & Cornwell 2008), if this research were to reveal a positive association between social capital and health information, it might provide greater insight into how different dimensions of social interaction contribute to racial and ethnic variation in treatment.

Furthermore, although there is limited empirical evidence on the subject, the social capital of the providers themselves might also play a part in treatment disparities. Mascia & Cicchetti’s (2011) study of Italian physicians finds that doctors with more interphysician ties are less likely to utilize evidence-based medicine, as a result of their more insular networks. By contrast, providers with fewer professional ties are more likely to use evidence-based medicine. Networks are promising for understanding how physicians’ social locations can be tied to their determinations of patients’ social worth; they may value patients differently depending on where the physicians themselves are located, including the types of organizational resources available in their work settings. If the social capital of physicians were to similarly influence problem-solving logics—e.g., the extent to which physicians rely on patients’ social characteristics to formulate diagnoses and treatment strategies—such findings would illuminate an unexplored social determinant of treatment variation. To the extent that sources of variation in health care treatment are rooted in these types of social, organizational, and structural sources (i.e., the outer rings in Figure 1), then the singular pursuit of cognitive bias in treatment decisions will have limited impact.

Cumulative Advantage

Rooted in Merton’s (1973) elaboration of the so-called Matthew effect, cumulative advantage theory argues that initial advantages—in wealth, status, health, etc.—cascade over time, leading to disparities in life chances between individuals and groups (Dannefer 2003). Health researchers typically utilize a version of cumulative advantage that posits that status characteristics (e.g., SES, race, gender) are associated with group differences in health that magnify over time, widening health disparities over the life course (DiPrete & Eirich 2006). Applying this framework to treatment variation, Link & Milcarek’s (1980) research on long-term psychiatric patients finds clear evidence of cumulative advantage processes in the allocation of mental health resources. Whereas patients who are initially identified as the most likely to benefit from therapeutic intervention (those who are young, communicative, and motivated) are placed in individual therapy, other patients who may need these services more are less likely to receive any form of therapeutic intervention at all.

Although not explicitly guided by the cumulative advantage framework, in their comparative study of two diabetes clinics, Lutfey & Freese (2005) note a similar phenomenon that they term compensatory inversion, wherein health-promoting resources are distributed in a way that further benefits already advantaged groups. For instance, although they would have benefitted from interactions with seasoned medical interviewers, low-SES patients were much less likely than affluent patients to be treated by experienced clinicians. Beyond the allocation of health care resources, there are other scenarios in which cumulative advantage may be an appropriate theoretical tool for examining stratification in medical treatment. Microprocesses such as negative interactions with one’s provider—e.g., a dispute over perceived noncompliance—might shape a provider’s future treatment decisions or a patient’s likelihood of adhering to treatment recommendations. Given that minority group members are more likely to report experiences of disrespect in clinical
interactions (Johnson et al. 2004), these encounters may trigger a chain of events in which poor communication begets inadequate treatment, which at the aggregate level translates into group health disparities.

CONCLUSION

Questions around treatment inequality and provider bias in medicine have a long and multidisciplinary history, having enjoyed research attention from the fields of sociology as well as public health, health services, medicine, psychology, and economics. Over time, we observe that research: (a) has become more theoretically and methodologically sophisticated in terms of isolating and measuring sources of cognitive and psychological bias, which is especially important for understanding how racial bias operates in health; and (b) has given less attention to the multilevel contextual environments in which decisions are made and to how cognitive biases may translate to differential diagnosis and treatment. These changes have brought new depth and nuance to questions about differential outcomes in medical care, but we are concerned about a declining sociological presence in these discussions. Maintaining a robust sociological presence in this research area will create a stronger understanding of health professions and health care without adopting the language, problems, and professional project of medicine.

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**Errata**

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