

Questioning Children: Interactional Evidence of Implicit Bias in Medical Interviews*

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Social psychologists have shown experimentally that implicit race bias can influence an individual's behavior. Implicit bias has been suggested to be more subtle and less subject to cognitive control than more explicit forms of racial prejudice. Little is known about how implicit bias is manifest in naturally occurring social interaction. This study examines the factors associated with physicians selecting children rather than parents to answer questions in pediatric interviews about routine childhood illnesses. Analysis of the data using a Generalized Linear Latent and Mixed Model demonstrates a significant effect of parent race and education on whether physicians select children to answer questions. Black children and Latino children of low-education parents are less likely to be selected to answer questions than their same aged white peers irrespective of education. One way that implicit bias manifests itself in naturally occurring interaction may be through the process of speaker selection during questioning.

Experimental investigation by social psychologists has shown that implicit race bias can influence an individual's behavior (Amodio and Devine 2006; Dovidio, Kawakami, and Gaertner 2002; Fazio and Olson 2003). Implicit bias has been suggested to be more prevalent but also less subject to cognitive control than explicit racism (Amodio, Harmon-Jones, and Devine 2003; Dovidio et al. 1997). However, relatively little is known about how implicit bias is manifest in naturally occurring social interaction. This article investigates factors associated with pediatricians selecting children, rather than their parents, to answer questions during medical visits for routine childhood illnesses. Examining the relationships between interactional conduct and sociodemographic characteristics of children and their parents, we propose that physicians' questioning behavior reflects an implicit bias in the competence

physicians attribute to children of different racial and socioeconomic backgrounds.

We examine question asking because in the present data we observed that when interacting with pediatricians and their parents, young to middle-age children rarely participate through their own initiative (by offering comments or asking questions).¹ Physicians' questions to child patients therefore represent the primary opportunities for children to both participate in their medical visits and to be appropriately socialized into the role of autonomous accountable patient. However, there is a great deal of variation in whether and how physicians ask children questions in their health-care encounters. We can thus ask what sorts of factors are associated with micro-interactional behaviors that involve, or exclude, children in the visit.

Here we investigate one element of interactional conduct—who physicians select to answer their questions—and examine the relationships between this selection and the child's

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¹ Even among adults being seen in primary care, patient-initiated forms of active participation such as question asking and opinion giving are quite rare (Street et al. 2005). Among children these behaviors are nearly nonexistent. For a review of doctor-child communication literature see Tates and Meeuwesen 2001.

age, the type of question being asked, and sociodemographic factors including race, gender, and education. We find that all of these factors are associated with the physicians' selection of respondent. Most crucially, we find that race and parent education affect physicians' selection of child respondents. This investigation provides insight into what the social psychological concept of implicit racial and socioeconomic bias may look like in actual social interaction and proposes a new point of departure for investigating health disparities.

BACKGROUND

It is widely acknowledged that socioeconomic and ethnic disparities exist in the quality of health care that individuals receive independent of their access to care (Lutfey and Freese 2005; Shone et al. 2005; Smedley, Stith, and Nelson 2003; Williams 1997). The basic patterns are well known (for relevant reviews see Balsa and McGuire 2003; Robert and House 2000; Schnittker and McLeod 2005; Williams and Collins 1995). The literature is much sparser for children than adults, but there is still substantial evidence that quality of care varies by racial and socioeconomic backgrounds across a wide range of measures (Stevens and Shi 2003). Flores, Olson, and Tomany-Korman (2005) report, based on a nationwide household survey, black and Hispanic children are less likely than white children to be in very good health. Moreover, minority children appear to not uncommonly receive inferior quality of primary care in many respects including basic preventive services (Stevens and Shi 2002), needed care or treatment (Hahn 1995; Weech-Maldonado, Morales et al. 2001; Zito et al. 1998), diagnosis of middle-ear infections (Vernacchio et al. 2004), and referrals to specialists (Flores et al. 2005; Weitzman, Byrd, and Auinger 1999).²

The depth and pervasiveness of the problem leads to questions about the extent to which providers contribute to the situation. As van Ryn and Fu (2003:248) put it:

Because institutional racism (differential processes or outcomes according to race/ethnicity) is the result of the sum total of policies and procedures created and enforced, and the behaviors engaged in, by institutional members, we must ask whether health and human service providers directly contribute to these racial/ethnic disparities in care and health outcomes. If so, how does this occur?

Thus they raise the possibility that physicians and other institutional members may be contributing to disparities.

Current research with respect to measures such as information provision does not show clear evidence of racial or socioeconomic bias. Whereas Siminoff, Graham, and Gordon (2006) show that physicians provided more biomedical information to white patients and better educated patients, Gordon et al. (2006) find that after adjusting for patient participation and doctor effects, race no longer predicts information-giving. This suggests that if physicians are behaving in ways that are biased, it is likely through more subtle means. Van Ryn and Fu present an array of evidence that supports the idea that providers are contributing to health disparities in several interconnected ways. First, they may contribute by influencing how patients view themselves and their relation to the world. This may influence patients' expectations for the future or the degree to which they expect to obtain the help or resources that they need. Second, physicians affect patients' thinking about health and their behavior with respect to health promotion and disease prevention. Third, physicians' referral practices are different for different racial/ethnic groups. In discussing their model of how health providers influence race/ethnicity disparities in treatment, van Ryn and Fu (2003:252) observe:

diagnosed asthmatic (Akinbami, Rhodes, and Lara 2005). Similarly, there was no detected racial or socioeconomic status disparity in rates of radiologic imaging among child patients presenting with appendicitis (Nwomeh et al. 2006).

² The literature is not unanimous in this perspective. Some studies suggest that racial and ethnic differences in health care are improving and may be slightly less pronounced in children's (as opposed to adult's) health care. For instance, among children who were wheezing, minority children were at least as likely as white children to be

[There has been a] lack of attention to the interpersonal mechanisms or mediators of institutionalized discrimination [that] may undermine the effectiveness of our strongest policy- and organizational-level strategies. Laws, incentives, mandates, court-based remedies, reimbursement methodologies, sanctions, and reorganizations may not create the desired effects if the fundamental human information-processing, social cognition, and social interaction processes that contribute to institutional discrimination are not addressed.

Such provider contributions to racial/ethnic disparities in treatment may be driven by what social psychologists refer to as “implicit prejudice” or “implicit bias” (Blair 2001; Fazio and Olson 2003; Quillian 2006). Implicit bias is part of the larger arena of implicit cognition. Greenwald and Banaji (1995:4) note that, “The signature of implicit cognition is that traces of past experience affect some performance, even though the influential earlier experience is not remembered in the usual sense—that is, it is unavailable to self-report or introspection”. In this way, individuals who report having no stereotypical beliefs can hold higher levels of implicit racial bias. This bias has been documented as associated with differential treatment of individuals based on race (e.g., sitting farther away, keeping belongings closer) (Dovidio et al. 2002).

This study examines one element of conduct (selecting a next speaker to answer a question) that may be affected by implicit biases physicians could have, and contributes to both research in social psychology and on racial and socioeconomic disparities in health care. This project follows a relatively short line of studies which examines whether micro-interactional variables derived from conversation analytic research methods can be linked to sociodemographic or other social structural variables (Clayman et al. 2007; Heritage, Boyd, and Kleinman 2001; Mangione-Smith et al. 2006; Stivers et al. 2003). In this case, we are primarily interested in whether there are associations between the sociodemographic variables of race and socioeconomic status, and the interactional behavior of doctors selecting children to answer questions.

Physician questions during the medical visit represent a key event for two main reasons. First,

as mentioned earlier, in these data children virtually never initiate sequences of interaction with the physician. They come to participate in the medical encounter almost exclusively through question-answer sequences. Thus, without questions addressed to them, they stand to be interactionally marginalized from the encounter, even though the encounter is allegedly about and for them.

Second, question-asking generally indexes the questioner’s judgment that the recipient is able and willing to respond (Heritage 1984; Labov and Fanshel 1977; Searle 1969). When a child is asked a question this represents a judgment of interactional and cognitive competence by the physician. Thus, questions provide a window into the assumptions and presuppositions physicians have about their child patients and their competence. In general, across interaction, interactants regularly ask the person who is most likely to be in a position to answer their question even if multiple knowledgeable people are present. Moreover, there is a strong preference for answers over non-answer responses (Clayman 2002; Stivers and Robinson 2006). Speakers generally avoid asking questions to which they will receive either no answer or a non-answer response (e.g., “I don’t know”), and recipients also try to provide answers (Stivers and Robinson 2006). So, when physicians ask patients (adults or children) questions, they can be analyzed as having treated that individual as competent to answer that question.

The concept of “next speaker selection” is taken from conversation analysis where, according to Sacks, Schegloff, and Jefferson’s (1974) model of turn taking in conversation, interactants either self-select to speak or are selected to speak. As with all interactants, physicians have multiple interactional resources with which to select the next speaker: gazing at the parent or the child, using an address term (e.g., the child or parent’s name or a term of endearment such as “sweetie”), or prosodic resources to make the question more child-friendly (Tannen and Wallat 1987).³ In this triadic context, next speaker

³ When someone asks a question, he/she does not necessarily select a next speaker. For instance, if a physician asks “how are you” while washing her hands and looking at the sink. (On ways of selecting a next speaker see Lerner 2003; Sacks et al. 1974).

selection also partitions the social interaction (Goffman 1981; Goodwin 1981; Levinson 1987). Through this partitioning, the third non-selected participant is, to some extent, interactionally marginalized (Schegloff 1995; Simmel 1950).⁴

When a physician asks a question, he/she both displays an evaluation of the selected individual as competent to “[produce] normatively appropriate conduct” (Heritage 1984:

117) and holds the selected speaker accountable for producing it. For instance, in Extract 1 a physician asks a seven-year-old girl why she is visiting. She fails to answer during the 3.0 seconds of silence shown at line 2, at which point the doctor teases that she must be fine (line 3). This tease holds the girl accountable for providing an appropriate answer to his question which she subsequently goes on to do (lines 5/7).

Extract 1

(1) SG 308 (For transcription conventions see Atkinson and Heritage 1984).

DOC:.hhh O:kay. What can we do for you today;
(3.0)
DOC: Oh! we're- you're fine t'day huh?
(0.2)
PAT: I- have uh- my throat [is hurtin[g?
DOC: [.hhhh [Q:h No^:.
PAT: And I have s:- uh blister? in my mouth?
DOC: Qh^: No^: . hh

By contrast, when physicians select a parent to answer a particular question, they hold him/her accountable. However, questions about the child but to the parent—as exemplified in Extract 2—run the additional risk of implying that the physician does not perceive the child as competent to answer precisely

because most questions about personal experiences are appropriately asked of the experimenter (Heritage and Raymond 2005; Sacks 1984). Thus, the physician treats 6-year-old Simon as not competent to answer her question about why he is being seen when she asks his mother:

Extract 2

(2) SG505 simplified

DOC: What's goin' on with Simon.
(1.5)
MOM: You know I ((sigh)) (0.4) It's been uh week.
(.)
MOM: Ya know he's- he has- he had uh co- uh co:ld.
DOC: Mm hm?,
DOC: For uh w[eek?
MOM: [(But-) Yeah: in thuh be[ginning I didn't=
DOC: [Okay,
MOM: =pay any attention [() But I think instead of=
DOC: [Okay?
MOM: getting better he's: getting worse an:' (0.2)
today when I picked him up from school? .hh thuh
teacher said that he really look uhm (0.2)
lethargic very uhm (0.5) ti:re:d (uhm y-) that
he was: not himself.
(4.0)
DOC: h=Okay.

⁴ In terms of visible behavior, the partitioning can be more or less extreme. In some cases physicians physically place themselves between parents and children, such

that their backs are to the non-selected individual. In other cases, they stand so that the participation of both parent and child is facilitated (Goodwin 1984; Kendon 1977).

At the microsociological level, physicians' selections of either parents or children to answer particular questions about their children's illnesses both reflect their orientations towards the children as competent or not in their ability to answer the questions and thus reveal doctors' implicit evaluations of the participants.

This study investigates whether sociodemographic factors are associated with physician question-asking. An association would suggest the presence of implicit racial or socioeconomic bias in who physicians direct their questions toward and more generally who they treat as more competent to involve in the medical interview.

DATA AND METHODS

Data

A nested cross-sectional design was employed, consisting of 570 videotaped pediatric encounters clustered within 38 pediatricians in 27 community pediatric practices around Los Angeles County. These data were originally collected for a study of communication surrounding antibiotics, and procedures are described fully elsewhere (see Mangione-Smith et al. 2004; Mangione-Smith et al. 2006; Stivers 2005a). Physicians were told that the purpose of the study was to examine parent expectations, doctor-parent communication, and parent satisfaction with acute care visits. Before the visit, parents completed a self-administered questionnaire that asked them to provide their own age, race (allowing a choice of only one category), education (grade completed), household income, and child's date of birth. Both physician and parent participants gave written informed consent. The study procedures were reviewed and approved by the University of California, Los Angeles General Campus Institutional Review Board.

The original dataset included children from 6 months to 10 years. Because the present study is specifically interested in child interaction, we excluded cases of children younger than 2-years-and-six-months of age since this would help to ensure that children had sufficient linguistic competence to be

selected to answer doctors' questions. The final data set included 322 encounters. The original eligibility criteria for the study restricted the visits to children presenting with symptoms of respiratory tract infection (cough, nasal congestion, ear pain, or throat pain). For the present study, this helps to standardize the questions physicians are likely to ask since the same basic information should be asked about in all visits, thus helping to limit the variance that would be due to visit context. All visits occurred between October 2000 and June 2001.

Questions

Question selection. In this study, videotaped encounters were used for an analysis of who physicians selected to answer questions. Four trained assistants coded the videotaped encounters for whether the physician selected a next speaker to answer the question and which caregiver(s) was present. A 15% random sample of visits were re-coded by a second coder to test reliability. Cohen's kappa statistic was .87 for the coding of next-speaker selection, almost perfect agreement according to Landis and Koch (1977).

Physicians asked a total of 6,609 questions and between 1 and 80 questions in any given visit. This is a considerable degree of variation, especially considering that visits were for a relatively homogenous patient population (otherwise relatively healthy children being seen for routine upper respiratory tract infection symptoms). The mean number of questions per visit was 21, with a median of 18 questions per visit, and a mode of 12 questions per visit. Of these questions, doctors selected either the parent or child to respond 97% of the time. Physicians rarely asked questions that left it to the parent and child to decide who would answer. Parents were selected much more frequently than children: 60% of all questions selected the parent to respond, whereas only 37% of questions selected children. This distribution was sufficient to investigate the predictors of questions selecting children.

Question content. As well as coding for who was selected to answer, questions were also coded for their content. Our current question is whether physicians differentially select children over adults so question content is crucial to consider. We expected that children would be more likely to be selected for some types of questions, whereas adults would be more likely to be selected for other types. Based on qualitative analyses and existing literature, nine content categories were identified as being of possible relevance.

The questions were defined as opening, identifying symptoms, quality of symptoms, quantity/duration of symptoms, medication, treatment, general health, social/background,

examination preparation, and illness experience. Examples of each of these categories are given in Table 1. Coders had "good" agreement (Landis and Koch 1977) about which category each question fell into, kappa = .69, deemed suitably high to proceed with further analyses.

Participant Information

Parent demographics. Caregivers included mothers, fathers, and grandparents. Mothers were the most common caregiver, present 84% of the time. Fathers were present in 20% of cases while grandparents attending without either parent accounted for less than 1% of

Table 1. Overview of Question Coding

Question content type	Examples (See Atkinson & Heritage, 1984 for intonation conventions)
Opening	What's the matter with you/him/her. Are you sick? Is he sick today? What can I do for you today.
Identifying symptoms	Are you coughing? Is she coughing? Has she had a fever with it, Does he have a runny nose,
Quality of symptoms	How bad is the cough. The drainage is it heavy? Is the cough wet or dry.
Quantity/Duration of symptoms	How often is the diarrhea. How many times did she throw up. How long has she been coughing,
Medication/Treatment	What have you given her for that. Have you taken any Sudafed or anything like that? Did the Tylenol work last time?
General health	Ever been in the hospital, How is her diabetes doing. Does he eat well?
Social/Background	How old are you. Where do you go to school. Do you need a bandaid for that?
Examination preparation	Who's gonna be first. Do you remember the stethoscope? Can I take a listen to your belly?
Illness experience	Does this hurt? (while Dr. pushes on tummy) Does it hurt right now? (about ear) Do you feel like [you're] having a hard time breathing

cases.⁵ Caregivers ranged in age from 20–72 with a mean and median of 36 years. In regard to household income, 36% reported between \$40,000 and \$80,000 per year, with 18% of households having less than \$20,000 annual income, 24% having between \$20,000 and \$40,000 annual income, and 22% having more than \$80,000 annual household income. Most parents reported having attended some college (32%). Only 3% of parents reported having had less than 8th grade education; 28% reported having attended or completed high school, 13% reported having received an associate's degree; a further 13% having graduated from college, and a final 10% reported having postgraduate education. Most families reported being Latino (50%), followed by 29% non-Hispanic white families, 13% black and 8% Asian.

Child demographics. The sample was evenly split between boys and girls with a mean age of 5 years and seven months of age (the median was 5 years precisely). Child race was not gathered. Based on video observation, it appears to be always the same as the parent's race in these data.

Physician demographics. Of participating physicians, 71% of were male, 50% were white, 26% Asian; 16% Latino, and 8% black. All participants were told that in order to participate in the study their visits must be conducted in English. Therefore, only participants who self-identified as "comfortable conducting the visit in English" were included. Further information on language was not collected in the surveys.

RESULTS

Analysis

Questions are not independent observations, but rather are nested within medical visits, which are nested within physicians: who is selected to answer a question may be influenced by who answered the previous question,

⁵ Because multiple caregivers were present in 6% of cases, this totals more than 100%.

and doctors may vary in their preferences for who is selected to answer a question.⁶ To account for this dependence within the data, we used a Generalized Linear Latent and Mixed Model in STATA (Rabe-Hesketh and Skrondal 2005). This is one model from a class of multilevel or hierarchical statistical models, which takes into consideration that there is clustering in the data. As the dependent variable was binary (whether or not the child was selected to answer a question), a logit model was used to fit the data.

Univariate and Bivariate Results

Our question is whether sociodemographic factors such as race and education affect microsociological factors, in this case, who doctors select to answer questions. In order to test this, participant information has to be included in the final model. Parent demographics included parent gender (in the form of whether the father was present or not), age and race (white, Latino, black, or Asian). Education was included as a five level variable (less than 8th grade, 9th grade to high school graduation, some college, associate's degree, college or postgraduate degree). Because household income was linearly correlated with education, to be conservative, income was not included in the final model [*Kendall's tau-c* ($N = 298$) = 0.45, $p < .0001$].⁷ Education and race were significantly associated [χ^2 (12, $N = 322$) = 86.05, $p < .0001$], with Latinos being overrepresented in lower educational groups, i.e., less than college graduate; blacks were more likely than other groups to have an associate's degree level of education, and both

⁶ Physicians are further clustered within practices, but we did not consider this a relevant level for this analysis since there is no reason to assume that who physicians select to answer their questions would vary at the practice level.

⁷ Household income and selection were associated bivariate and for this reason income was included in early multivariate models, but subsequently dropped since it was both non-significant multivariate and the bivariate result appeared to be driven by the linear association between education and income. Some cases had missing income information; therefore the total number of cases is lower than 322 here.

whites and Asians were more likely than other groups to have a college degree or postgraduate level of education (see Figure 1). Education by race was included as an interaction term.

Some encounters had multiple caregivers present. Because the likelihood of the child being asked a question could decrease with an increase in the number of participants attending the medical interview, we generated a variable for the presence of more than one caregiver. The association proved significantly associated with question selection bivariate and was therefore included in the final multivariate model [$\chi^2 (1, N = 6,609) = 32.83, p < .0001$].

For child variables, age was clearly associated with question selection. When parents were selected to speak, the mean age of the child was 5 years and six months of age, whereas when the child was selected to speak the mean age was 6 years and three months of age [$t(6607) = -13.41, p < .0001$]. Thus child age was included in the final

model. Child gender was tested bivariate with question selection, but was not significant. No other child variables were included in the model.

Physician race (white, Latino, black, Asian) was included as a variable in the final model, as was a variable for physician-parent racial concordance under the hypothesis that physicians of the same race as the family may be more likely to ask children questions. We compared concordant against non-concordant interactions. Closer examination of pairwise combinations of race did not prove significant, so a finer coding was not deemed necessary. Moreover physician gender also did not prove to be bivariate associated with question selection, and was therefore not included in the final model [$\chi^2 (1, N = 6,609) = 2.89, p > .05$].

In order to assess whether some questions are more child-directed, and thus relevant to include as a variable in our final model, we examined the relationship between question content and whether the

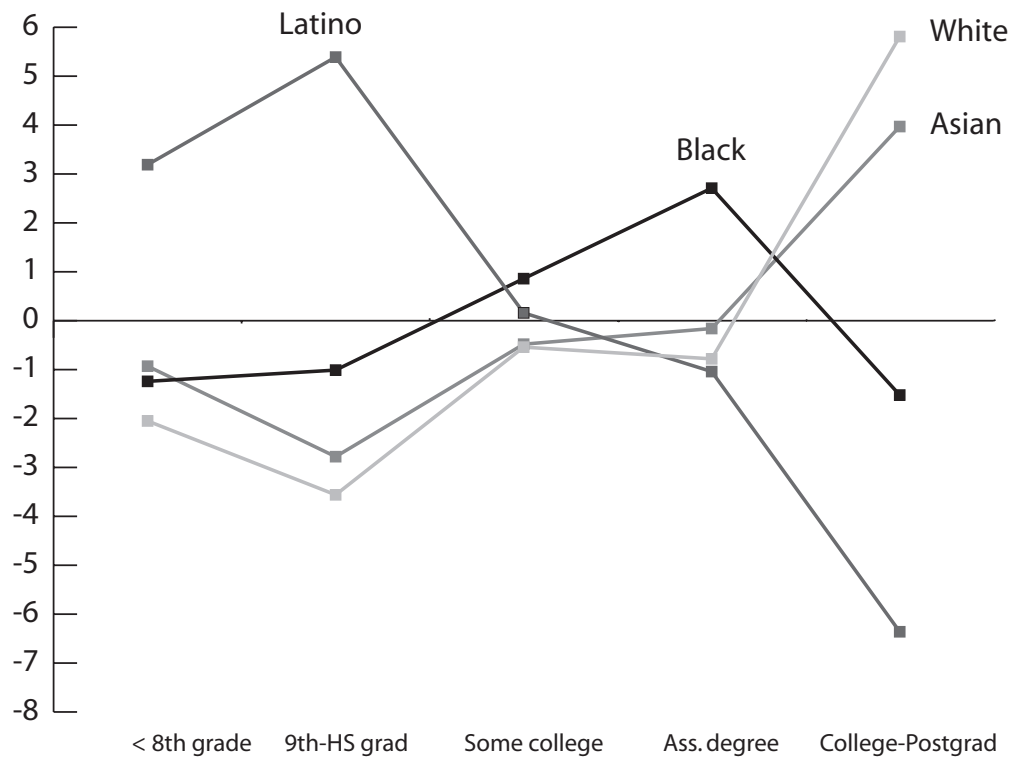


Figure 1. Line Graph of Race by Education

child or parent was selected to answer. Preliminary analyses showed that there was a strong relationship [$\chi^2(8, N = 6391) = 1495, p < .0001$]. From the adjusted standardized residuals we could conclude that children were more likely than adults to be asked social/background questions, preparation for examination questions, and illness experience questions. Conversely, parents were more likely than children to be asked about why they were visiting the doctor, what the symptoms were, about the quality, quantity/duration of symptoms, the child's general health, and about medication or treatment. Thus rather than considering all nine content categories, a dichotomous variable was constructed identifying a question as either a "child question" (i.e., a social/background question, a preparatory question or an experience question) or not.

Multivariate Results

The results of the multivariate logistic regression are shown in Table 2 as odds ratios with 95% confidence intervals. Both medical encounter and physician were significant predictors of whether a child will be selected to answer a question. Thus, individual physicians can have a tendency to ask children questions (or not). And, whatever pattern of speaker selection is set up in a visit may hold throughout the visit, so if a physician successfully engages a child, he/she may continue to ask the child questions. There were five additional predictors of whether a child was selected to answer a question by a doctor: (1) the age of the child, (2) question content, (3) parent gender, (4) black parent race, and (5) interaction between education and race.

Table 2. Results of Multivariate Logistic Regression

Level 1 Variables	Odds Ratio	95% CI
Question Selection		
Child question	5.58***	4.85, 6.40
Child Variables		
Child's year of age	1.22***	1.15, 1.29
Parent Variables		
Father present in visit	1.63**	1.14, 2.34
Parent's year of age	1.02	1.00, 1.04
Multiple caregivers present in visit	0.62	0.33, 1.14
Parent's level of education	0.97	0.78, 1.20
Race		
Latino parent	0.56	0.24, 1.28
Black parent	0.22*	0.07, 0.71
Asian parent	0.36	0.07, 1.91
Race by Education		
Latino parent/education interaction	1.32*	1.00, 1.73
Black parent/education interaction	1.56*	1.04, 2.34
Asian parent/education interaction	1.26	0.76, 2.09
Physician Variables		
Black physician	1.50	0.48, 4.67
Latino physician	0.92	0.35, 2.38
Asian physician	0.78	0.40, 1.53
Physician-Parent Racial Concordance	1.05	0.66, 1.69
Context Variables	Estimate	Std. Error
Level 2: Variance at visit level	0.74***	0.10
Level 3: Variance at physician level	0.62*	0.19

* denotes $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

First, age: the odds that the child was selected to answer a question increased 22% for each additional year of age. This result seems relatively transparent. Although some physicians are more likely to ask children questions simply as a matter of preference or style, this result supports the earlier observation that physicians' selection indexes an attribution of competence and that age is one factor affecting that attribution. Physicians, like most adults, appear to attribute greater competence to older children and will therefore be more likely to select children to answer questions as they get older, independent of their own proclivity to ask children questions.

Second, if the question pertained to the social domain, preparation for examination, or their present experience, then the odds that the child would be selected to answer the question increased by more than 5 times over when the question pertained to another domain (e.g., about the presence or quality of illness symptoms). The same attribution of competence argument accounts for this result as well. All children are treated as more competent to answer questions about their own lives (social/background), their preparedness for examination, and what they feel and otherwise perceive (experience questions). Physicians therefore appear to attribute children as having greater competence to answer such questions than adults, independent of the age of the child.

Third, if the father was present, then the odds that the child would be selected increased by 63% relative to if the father was not present. This result was unexpected, but attributions of relative competence may be involved here as well. The result suggests that there is an attribution of less competence to fathers, probably by virtue of the fact that they are much less frequently in attendance at these medical visits (recall they were present only 20% of the time). The alternative interpretation—that physicians attribute more competence to children when their father is present than when the mother is present—seems improbable and has no support in qualitative analyses of these interactions.⁸ This finding

appears to indicate that physicians assume that fathers know less about their children, their symptoms, and their illness history (Strong 1979). By contrast, when the mother is present, she is treated as having a higher default level of competence relative to the children.

Fourth, if the parent is black, then the odds that the child will be selected to answer the question decrease by 78% times, in contrast to cases where the parent is white. This is a robust effect, second only to the type of question asked. Two possible interpretations of this result exist. First, physicians may attribute less competence to black children than white children, independent of socioeconomic status, age of the child, and which parent is attending. Alternatively, physicians may direct more communication to black parents than white parents because of behavioral cues provided by either parents or children that steer them to do this or because of ideas they have about family structure among black families.

Although we cannot rule out the latter interpretation with the present study, it seems less probable for three main reasons: there is no difference in black vs. white parent responses to questions directed toward their children. Black parents are no more likely to answer questions for their children or after their children than white parents [$\chi^2(4, N = 1,013) = 3.23, p = .52$]. If black parents felt that physicians should ask questions of them and not of their children, we would expect to see a difference in their responsive behavior. Relatedly, in other work on these data there is no effect of race on children's propensity to answer questions directed at them (Stivers 2007b). Once again, we would expect that if there were differences in black families' expectations for physicians to select children to answer, this would be visible in children's response patterns, but it is not. Finally, if behavioral cues differed among white and black parents or children, we would expect to have that reflected in racially concordant versus discordant doctor-parent visits. However,

⁸ Although not systematically studied, fathers appear more likely than mothers to probe their own children for

answers to questions about their symptoms during interviews. For instance, in response to a doctor's question about allergic reactions, the father asks the child if she has used new soap to bathe.

neither in these data nor in at least one other study investigating race effects and physician-patient communication (Gordon et al. 2006) is there an effect of concordance on these types of communication behaviors.

Finally, although parent education did not prove to be a reliable predictor of child selection when considered alone, it was implicated in child selection when it interacted with race. For Latinos, each additional level of parent education increased the odds by 32% that the child would be selected to answer the question compared to white children. This same pattern held for black children, where the odds increased 56% for each additional level of parent education. Consideration of the interaction term must be made in light of the prevalence of each ethnic group at the different educational levels.

The implication is that more Latino and black children will be negatively affected because, in absolute terms, they are underrepresented at higher levels of education (see Figure 1), and thus a smaller number of children will benefit from their parents' educational level. Given the result for the main effect of black race, this suggests that black children are treated as least competent to answer questions.

Secondary Investigation

The associations between race and socioeconomic status, on the one hand, and selection of the child as next speaker, on the other, suggest that this may be an interactional manifestation of implicit bias towards particular racial and socioeconomic groups. However, this raises the question of whether bias might be observable at a more coarse level. Specifically, could implicit bias be observed in the sheer number of questions asked to racial or socioeconomic groups? If there were such a difference, this would suggest that physicians are not only interacting less with minority children but with minority families. The results could also be rooted in a perception of their minority clients as less worthy of spending time with, rather than being analyzable as a perception specifically about the children as less competent.

Table 3. Mean Number of Questions and Standard Deviations by Race

<i>Race</i>	<i>Mean</i>	<i>Std. Dev.</i>
White	18.53	11.07
Latino	20.83	12.50
Black	21.50	12.89
Asian	24.36	12.49

Table 4. Mean Number of Questions and Standard Deviations by Education

<i>Race</i>	<i>Mean</i>	<i>Std. Dev.</i>
Less than 8th grade	23.50	9.63
9th-High school graduate	19.27	12.08
Some college	18.95	12.09
Associate degree	23.76	12.67
College degree	22.16	9.75
Post graduate	21.76	15.03

Contrary to such a hypothesis, there was no significant difference in the number of questions asked of the four racial groups $F(3,321) = 1.79, p = .15$ (see Table 3), nor of the different education levels $F(4,321) = 1.85, p = .12$ (see Table 4).

This runs counter to the hypothesis that physicians simply interact less with minority or low socioeconomic status families. Moreover, these data also do not support the hypothesis that physicians ask minority or low socioeconomic status families more questions because they fail to obtain informative answers from these families. Note that the numerical difference between groups is also not consistent with the differential questioning that we see in the main analyses. Whites are asked the least number of questions and Asians the most, but in the main analyses these two groups are indistinguishable. Thus, sheer number of questions asked does not seem to be predictive of other behaviors.

Physicians do not differ in their raw questioning behavior in terms of race or socioeconomic status, but they do differ in who they select to answer the question in these terms. This suggests that the biased behavior we observed finds the child as its target rather than the parent.

DISCUSSION

The significance of this study is first in documenting an interactional mechanism

through which members of different racial and socioeconomic groups are marginalized. We have suggested that this represents evidence of implicit bias among these physicians. This bias is important because it documents one way in which particular children become excluded from interactions that are about and for them. Lutfey and Freese (2005) used an ethnographic approach to identify some of the mechanisms by which the inverse relationship between socioeconomic status and health outcomes are produced among diabetic adults. Here we offer an example of how an applied conversation analytic approach can provide insight into the mechanics of how race and socioeconomic status are socially constructed through interaction via differential attributions of competence. This is an example of how micro-level interactions both reflect and contribute to larger macro-structural factors that combine to reproduce social and health disparities.

This result is important for work both in social psychology on implicit prejudice and on health disparities. As mentioned earlier, previous research documents that individuals who show no explicit race bias can still have their behaviors and decision making affected by implicit racial bias. Research in this area suggests that many white Americans hold negative implicit stereotypes about black Americans (Blair 2001; Dasgupta 2004; Greenwald, McGhee, and Schwartz 1998) and Latinos (Uhlmann et al. 2002). Moreover, a range of studies show that interactions with black experimenters are more likely to be uncomfortable or negative if the individual scored high on an implicit prejudice scale (Dovidio et al. 1997; Fazio and Olson 2003; McConnell and Leibold 2001).

Although for this study we do not have data about physicians' implicit prejudice, we nonetheless suggest one way social interaction may look different based on differential evaluations of particular racial and socioeconomic groups. Physicians are less likely to select black children to answer questions in their medical visits and are also less likely to select black and Latino children from lower socioeconomic backgrounds. As Quillian (2006) observed "Implicit prejudice [has] the poten-

tial to help sociologists better understand the micro- and macro-connections between individuals and groups" (323).

It remains possible that, rather than the exogenous explanation of implicit bias, what is driving physician behavior is local to the physician-parent-child interactions involving minority patients and those from lower socioeconomic backgrounds. Although we have attempted to examine associations between various parent and child behaviors, further investigation both of parent and child responses and qualitative analysis of how these populations might differ in their interaction patterns with physicians is necessary.

Second, this study suggests that it is not only minority children who are being excluded from such interactions but that children are more generally marginalized across these interactions. Corsaro (1997) observes that children have not historically been a domain of sociological investigation and that one reason for this might be their "subordinate position in societies" (7). He suggests that one reason why children have come to be more present on the sociological agenda in the last 10 to 15 years is the growing interest in socially marginalized groups.

This study indeed supports prior work suggesting that children are frequently socially marginalized (James and James 2004). The present study extends an observation made previously (Aronsson and Rundström 1988; Stivers 2001; van Dulmen 1998) that doctors spend much less interactional time with children than adults, and that doctors rely heavily on parents for answers to their questions and are more likely to do so except in very particular question content domains (Stivers 2001). This study helps to elucidate how interactional marginalization occurs. Such exclusion is important because it is a mechanism for disempowering children (Lareau 2003). By not selecting them to answer questions about their own illnesses, children are shown that they are neither accountable for nor knowledgeable about their own health status.

Turning to a final point, we suggest that this study may have long term consequences for the acquisition of the role of patient, especially being a proactive patient in this role.

Although only longitudinal data could answer the question of what role asking children questions plays in socializing them into proactive adult medical patients, these findings allow us to offer some hypotheses. The child socialization literature (e.g., Danziger 1971; Garrett and Baquedano-López 2002; Ochs and Schieffelin 1984) strongly supports the idea that children learn not just how to use language, but how to behave in different social roles through social interaction. The cultural transmission literature (e.g., Bourdieu and Passeron 1977; Boyd and Richerson 1982; Cavalli-Sforza et al. 1982; Mark 2002) similarly supports that cultures pass on information relevant to cultural reproduction such as language, values or skills through interaction.

Ochs and Schieffelin argue that children and other novices in a society “acquire tacit knowledge of principles of social order and systems of belief (ethnotheories) through exposure to and participation in language-mediated interactions” (1986: 2). When children learn how to use language, they also acquire cultural values and internalize how to “be” a member of their family, gender, class, religion, nation, and ethnicity through participation in a variety of peer cultures (Corsaro 1997). From an ethnomethodological perspective, becoming a competent participant in society means internalizing the relevant normative constraints through participation in social interaction. As Heritage puts it, socialization can be thought of as “no more than a history of the ways in which the actors are increasingly treated as aware of—and hence accountable in terms of—the normative organization of the empirical circumstances surrounding them” (1984: 120). This is true across a range of social roles, each of which requires an understanding of the accountability of the social actor.

Certain roles are a natural extension of others whereas other roles require discrete learning. This can vary by race or socioeconomic status, as exemplified by the finding that children from a minority community may initially struggle to deal with the expectations and norms of the majority culture when they begin formal schooling (Heath 1983; Michaels 1981; Philips 1983; Rogoff et al.

2003). The argument is that children from middle-class white families are socialized into many facets of the student role at home (e.g., telling stories linearly), whereas children of some minority groups may get exposed to these facets of the student role for the first time when they begin attending school.⁹

Social interaction can provide children with insight into social norms through both peripheral and direct participation. Indeed for minority children they may well benefit from a peripheral role in an interaction between a professional (the physician) and their parent, in which the professional treats the parent respectfully and as a source of knowledge. However, there is substantial evidence that the level of participation matters for the type of socialization children gain (Schieffelin and Ochs 1986). As a silent participant in an interaction, a child can certainly learn and benefit (Bandura 1977). However, as an active interactant, the learning process is significantly enhanced (Garton 1992). This was also suggested by Lareau’s data where parents coached their 9-year-old son in ways to participate in his medical visit (Lareau 2003). We postulate that in addition to home socialization, children who are asked questions about their illness experience will more quickly and more powerfully learn what the patient role means and their rights and responsibilities in that role. After all, although learning through observation is well documented in education (e.g., Bandura 1977), learning through participation is known to be critical for internalization and proficiency in many types of learning (for discussions see Bruner 1983; Garton 1992; Lave and Wenger 1991; Rogoff et al. 2003). Internalizing the role of patienthood is likely no different.

A risk that is introduced when physicians exclude black and Latino children from actively participating in their medical visits is that these children may be less likely to become proactive patients. There is already some evidence to support this long-term

⁹ Also see Lareau (2003) for a discussion of some of the class differences in how parents socialize children to use language and interact with institutional authority figures.

effect. Both Street et al. (2005) and Gordon et al. (2006) found that black patients were less active participants than their white counterparts. In a different analysis of these data examining a particular type of active participation—resisting a non-antibiotic treatment recommendation—black parents were never observed to exhibit the behavior, whereas whites, Asians, and Latinos were (Mangione-Smith et al. 2006). Treatment resistance is a prototypical form of proactive parent behavior and one that is associated with physicians altering their treatment plan for children (Stivers 2005b; Stivers 2007a). This suggests that further interactional investigations are necessary.

CONCLUSION

In this study we document one way that physicians' interactional behavior constitutes and contributes to racial/ethnic and socioeconomic disparities in health-care encounters. Future work should examine the root of these disparities by testing for implicit biases, perceptions of family structure across physicians, and associations with physician-parent-child interactional behaviors. However, these data broadly support that physicians perceive children's levels of competence differently depending on racial and socioeconomic status. Physicians in these data ask fewer questions of black children and minority children of lower socioeconomic status which suggests that they are treating them as, and perhaps perceiving them to be, generally less competent than their white and Asian counterparts.

On the one hand, these data are in line with a hypothesis that physicians perceive individuals from particular racial/ethnic or socioeconomic groups more negatively than others, broadly supported by research examining implicit racial biases. Relatedly, van Ryn and Burke show that physicians tend to perceive black individuals and people of low to middle socioeconomic groups more negatively than white individuals and members of higher socioeconomic groups (2000; van Ryn 2002). Perhaps more critical were physicians' perceptions that black individuals are less intelligent and educated (even when socioeco-

omic status was held constant). They find that "Blacks are only half as likely as whites to be considered 'very intelligent' and less than two-thirds as likely as whites to be considered 'very' or 'somewhat' educated" (819). Members of lower socioeconomic groups are also more likely to be perceived as less intelligent (van Ryn and Burke 2000). As suggested above, our data are consistent with this work; however, the observation that physicians do not ask different numbers of questions of families from particular racial or socioeconomic backgrounds suggests that the mechanism for differential treatment is complex.

The problem with such categorically different treatment (and likely their underlying perception) is that it runs the risk of bringing less competence into being, as famously demonstrated by Rosenthal and Jacobsen (1968), in the education context. Thus, when physicians ask parents, rather than children, questions about the child's health, they show the child that they view the parent as more competent to answer and by implication the child as less competent. Because this applies differentially across racial and socioeconomic groups, the very children who are likely being perceived as less competent are having that (lack of) competence reinforced.

This study opens the possibilities for new investigations into how practitioner-patient interactions both reflect and contribute to the structural factors that reproduce racial and socioeconomic health disparities. Paramount among issues for future research are whether there is evidence that children or adults of particular racial or socioeconomic backgrounds are actually less likely to respond to physicians' questions. A failure to show such an association would support the analysis offered here that what underlies physicians' behavior is an implicit bias rooted in prejudice rather than prior interactional experience (Balsa and McGuire 2003). Future research should also test physicians for implicit bias and for knowledge about the family structure of their communities in order to evaluate whether these factors are associated with differential behavior. Finally, future research should investigate how children's socialization into the patient role will matter for later medical interactions

when they are acting as autonomous adult patients.

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