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SOCIAL CLASS AND SPECIALTY PREFERENCE AMONG MEDICAL STUDENTS

by

JOHN CONDON

A dissertation submitted to the Graduate Faculty in Sociology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

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Chair of Examining Committee
Prof. Lindsey Churchill (Emeritus)

Dec. 1, 2000
Date

Executive Officer
Prof. Julia Wrigley

Prof. William Kornblum

Prof. Charles Winick (Emeritus)

Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

/uw.

Abstract

SOCIAL CLASS AND SPECIALTPREFERENCE AMONG MEDICAL STUDENTS

by

John Condon

Adviser: Prof. Lindsey Churchill

Medicine is and has been a highly prestigious profession. It both produces and reproduces members of the upper class. Its high status has long been accepted as legitimate by society due to the tremendous sacrifices its members make both in the length and difficulty of their training and the content of their work.

However, medicine is currently facing problems. It is under siege by managed care organizations and the federal government, which not only want to regulate fees that physicians receive but to intervene in their professional decision making. One of the initiatives currently under way, both by the government and the medical profession is the production of more generalist physicians.

Generalist physicians are needed to provide the vital first level of care and act as gate keepers to the hospital system. They also are needed to reduce overall medical costs, and not least of all, to restore public trust in the medical profession as one dedicated to public as well as private interests.

A great deal of literature has been devoted to the question: where will these primary care physicians come from? How can an elite profession such as medicine convince half of its recruits to accept less prestigious positions as generalist physicians?

In its study of how to recruit and train generalists, the medical profession has largely overlooked the issue of social class. This study states that social class analysis can both explain the specialist/generalist imbalance and point to ways to identify and recruit more generalist physicians. Social class may act as a form of socialization which determines attitudes about generalist medicine before the student enters medical school.

Through survey analysis, this study will look at the attitudes that medical students have regarding specialism and generalism. It then will determine how these attitudes are divided along lines of social class and will offer suggestions on how to locate more students with generalist tendencies.

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Chapter 1: The Problem.

Medical sociology is a field rich in material for study. Hospitals are powerful institutions with the diversity and stratification of well-developed societies. Statistical data abounds in federal, state and local administrations, as well as in private hospitals and the offices of practicing physicians. The potential for research and the abundance of data is an attractive aspect of the field of medical sociology. However, one soon discovers it is a field mined with controversy. This is no field of idle academic theory, but a vast system infused with conflicting values and enormous economic and political significance.

After years of immersion in the literature, one realizes that a careful study of any issue in medical sociology required a synthesis of many different fields, and this would extend a doctoral dissertation into an open-ended life-long project. A newcomer to the medical sociology field must respect the breadth of the field; one which overlaps with clinical science, economics, and administrative and organizational studies. It is extremely challenging to craft a study that recognizes this complexity, yet is still modest enough to be completed in a reasonable time.

Studying the problems of health care delivery in this country exposes a complicated network of organizational, political and economic ties which are difficult enough to describe, and extremely difficult to change. The complexity of the health care system makes the entry point for analysis difficult to agree upon. Some stress working at the level of reimbursement, others at restructuring the existing systems of subsidy, at altering the supply of physicians, or even reducing the demand for medical services. It is far less controversial to identify a problem than a solution. One area in which there is a broad consensus is the need for more generalist physicians. The increasing demand for

and the very pragmatic demands of HMOs, which are becoming increasingly powerful in shaping the organization of health care. (Kronich et al. 1993) The medical profession has worked for over 30 years to readjust the balance between generalist physicians and specialists, with limited success. [1]

This study is intended to discover potential sources for generalist physicians. The study is organized not primarily around theory but around a survey of first and second year medical students. This study will address the gap between socialization theory and specialty choice theory. Socialization theory believes that the institutions of medical education and the student culture of medical school transform students into physicians. Specialty choice theory is more diverse. It sees specialty selection as based on particular characteristics and needs of individual students. Through a questionnaire administered to medical students, I will see if a greater degree of generalist sentiment can be located in some parts of the medical school population. I will particularly concentrate on the variable socioeconomic status, which is largely ignored by both types of studies.[2]

This study does not deny the importance of socialization. I have chosen first and second year medical students precisely because they are in the very early stages of socialization. On one level the conclusions can be seen as preliminary, yet this position has specific advantages. If there are no differences at the early stages of medical training, then we can assume there will be no differences at the later stages. However, if differences appear at such early stages of medical education, these differences should be

[1] See section one of the bibliography for a list of professional reports dealing with this issue. See also Colwill 1992, Kindig et al. 1993, Stein, 1992, Strosberg 1980 and Kassirer 1993)

[2] I have chosen to use the term socioeconomic status rather than class when referring to the status of medical students. Whether physicians constitute a class, a status group, or an occupational group would be a lengthy theoretical discussion which is not relevant to this study. What is relevant is the different socioeconomic backgrounds from which medical students come. Socioeconomic status is very similar to class but denotes a higher level of complexity than class.

seriously considered as possible sources of identifying potential generalist physicians in the population. Medical schools still are not producing enough generalist physicians, and new methods for increasing the proportion of generalists need to be considered. This study does not offer a plan for reversing this trend, but it offers a new perspective to be considered in the socialization of physicians.

This study proposes that since the medical schools have not succeeded in producing an adequate number of generalists, that schools should consider ways to utilize the differences of students coming into the medical schools. Medical schools can operationalize the differences between students of different socioeconomic backgrounds. They could overselect from groups that are known to be relatively more favorable to generalist practice. They have already identified groups known to have higher preference for generalism, such as women, minorities, rural residents, older students and humanities majors. This has aided schools in the admission process, but with the exception of women, many schools are faced with a shortage of these applicants.

THE SOCIALIZATION STUDIES:

The classic socialization studies of the late 1950's continue to be relevant for today's medical schools. (Merton, Kendall, Reader 1957, Becker et al. 1961) This paradigm assumes that the medical school environment is a sufficient force in transforming students into physicians. One of the critiques of socialization theory is that it assumes that students' interests are vague and their ambitions malleable. Under socialization theory, it is the role of the medical school to step in with the structure to guide these students. However, medical education is a complex interaction of social structure and individual psyches. The coming together of highly motivated individuals

confronting difficult problems within a limited social milieu yields a distinct culture . This culture has proven to be a productive middle ground for studying medical education. It is specific to the medical school, yet it is created and sustained by the interaction of students, faculty, patients and the entire staff of the medical center environment.

The early socialization studies were conscious of the influence of socioeconomic status in attracting students to medical school, on how students identify to each other, and how they form a common perspective. However, these studies and virtually none thereafter look at socioeconomic status and premedical training in the sciences as factors influencing specialty choice.[3]

A theoretical gap exists between socialization studies and larger issues of class and social mobility. In medical education, more general sociological issues, like occupational choice, have been overshadowed by issues of academic performance and specialty choice. The professional ethos of medicine is assumed but the socioeconomic status of students before they are socialized is largely overlooked.

Socialization studies look at the transformation of students into physicians. They do not address the issue of transformation of students into particular specialties—such as generalists. In the socialization studies socioeconomic status is seen as largely the result of socialization. I intend to examine socioeconomic status as a potential cause of socialization. Students are not only socialized in medical school but prior to and outside of medical school.

[3] Merton's study looked at social class (or socioeconomic status) as it effected the timing of the decision to study medicine, but the social class variable is not correlated with other factors. Becker et al.'s study uses class to explain how students identify to each other, how they identify to their education and how they select what to study.

A career in medicine and the ensuing area of specialization one chooses represents a certain way of life for an individual. Thus the decline of generalism also involves issues of socioeconomic status, mobility and general lifestyle choice of individual students. Students live in a world where the high status of a medical career is well understood. Therefore, they are influenced by the socioeconomic and cultural power of the medical establishment before they confront its scientific and professional values as propagated in the medical school. This perception of the status of medicine and its relationship to their future specialization may not be apparent to students. However, it may be latently reflected in such areas as their academic orientation, their career values and their interest in social mobility or in maintaining socioeconomic status.

SOME THEORETICAL GAPS IN SOCIALIZATION THEORY

There is general consensus that too many students are choosing to become specialists. This reality clashes with the ideological foundation of medical education. The system has no quotas for generalists because it is believed that the admission process combined with socialization will produce the necessary balance of generalists and specialists. If socialization is the norm than there is something wrong with the system. If not, then the system is performing rationally, but is steering students away from generalist medicine. This is one reason why the generalist/specialist problem is so controversial. It raises questions about the very nature of medical education.

Socialization theory does not conform to the idea of medical students making totally free choices in their careers. It is therefore crucial to understand what variables predispose a student towards a particular specialty choice. Medicine, as a model profession, favors technical specificity over the social class background of its members.

However, the profession is still comprised of people from various socioeconomic backgrounds. The reasons for these individuals' career choices remain subjective. Some may base their choice on the differences between medicine and other occupations, while others may base their choice on more specific characteristics of professional medical status—for instance specialization.

A problem in selecting medical students is that most do not know what their eventual specialization choice will be. Many who have already decided would have no interest in announcing their decision, because the expectation is that inexperienced medical students do not have enough information to decide. The advantages of expressing interest in generalism for gaining admission to medical school are also well-known and some students may express interest in generalism, even if they are undecided or are actually interested in a specialty.

Given these uncertainties, schools rely on the structure of the curriculum and the interaction process with faculty to guide students into their specialties. This socialization process has no quotas, but it is expected to produce a sufficient mixture of generalists and specialists.

Testimony to the unchanging nature of medical education is the continued relevance of the classical sociological studies on medical education written in the 1950s. As Bloom (1988) points out, while the content of medical education has changed significantly, the teaching/learning experience has remained remarkably similar over the last 45 years. These classical studies use "socialization" to explain the status passage from student to physician. The best known works are by Merton, Kendall Reader (1957),

and Becker, Geer, Hughes, and Strauss (1961) These are supplemented by works by Coombs (1978) and Miller (1961).

The two major socialization studies (henceforth referred to as Merton and Becker) both studied a group of medical students over a four-year period. Other studies looked at socialization during residency training, and so are less relevant to this study (Miller 1961, Bosk 1979, Mumford 1970, Mizrahi 1986). There has been no significant study on the socialization of medical students since 1978.

Socialization is less about choice than about the process of accepting the structural constraints attached to the role. In a review article on medical education and socialization, Daniel Levinson (1967) writes: "Socialization research...deals with the interplay of environmental contexts and related enduring yet changeable personality structures." (Levinson 1967 p. 258) Merton points out that socialization theory allows for variation in individual outcomes despite fixed structure. (Merton, Kendall, Reader 1957 p.287)

Despite using similar methods, Merton and Becker come to different conclusions on the basic nature of medical school socialization. The Merton study finds a pattern of collegiality between students and faculty, where students, alongside of faculty, learn the limits of medicine, and the pervasive uncertainty that accompanies it. In the Becker study, the students are seen as subordinated to faculty. As a result, students form their own subcultures as a way of coping with the stress of medical school.

The 1950's and 1960's constituted a productive period for the study of socialization of medical students, but by the 1970's these studies ended and were not followed up. A number of reasons can be cited for this change. There was a general

sociological shift away from not only socialization studies but studies of the professions in general. Other issues have risen to the forefront, for example, the study of the power structure in medicine. Especially in the wake of the expanded power of the academic medical center, interorganizational relations and most recently the changes in the organization of health care delivery. (Bloom 1979) Another reason for this shift can be traced to the increasing influence of the work of Eliot Freidson, who believed that the "immediate work environment" and the "exigencies and realities of practice" are more powerful determinants in shaping professional roles than the socialization experience of medical school. (Fox 1989)

Socialization theory also assumes that much of the actual socialization is informal rather than formal. Students bring to medical school broad social attitudes about the profession, which vary from generation to generation. (Funkenstein 1975) This broad social attitude, combined with the complex personal and psycho-sociological factors which drive people into a high prestige profession such as medicine, make quantifying career choice and specialty choice complicated matters.[4] Becker (1961) identified 140 various criteria for students' specialty preferences. These were narrowed down into twelve broader categories but the multiple causality problem is still apparent. Social psychological data on medical students is extensive, but the many approaches to the problem allows only a fragmented picture of the causes of specialty choice to emerge. (Levinson 1967)

One of the enduring contributions of the Merton study was Fox's analysis of how the traumatic training of medical students helps them build the essential characteristics of

[4] For some of the psychosocial aspects of specialty choice see Kritzer and Zimet (1967) and Pathman (1996)

"detached concern" and "training for uncertainty." (Fox 1957, Lief and Fox 1963). Fox identifies what may seem to the untrained observer as skepticism or cynicism but is more of a functional defensive attribute which physicians must learn. Other studies have identified medical training as breeding cynicism (Eron 1955, Gray, Moody and Newman1965) Becker identifies this cynicism as a situational adjustment rather than a personality change. (Becker et al. 1961, Becker and Geer 1958). It is clear that medical education produces stress in individuals (Coombs and Vincent 1971, LeBaron 1981) and in some cases, conflict threatens the structure of medical school. (Bloom 1973). Fox, in a later essay summing up the classical studies writes:

> Many students begin their medical school training with the determined hope that it will not transform them into the kinds of persons and physicians they are trying not to become. As compared to their counterparts in the 1950's, students now tend to view their teachers as negative role models, not necessarily with rancor or loss of esteem, but more as symbolic expressions of their role to be different or better and more socially responsible physicians than the medical "establishment" with which they identify their instructors. (Fox 1979 p.96)

In summary, socialization has become the most widely accepted theory for explaining the complex developmental process of medical education. In the existing studies the issue is not socialization versus some more oppressive form of indoctrinization. Rather, the issue is the relative power of the institution to socialize students into socially and organizationally preferred outcomes. The issue is not the learning of the professional role, as addressed by the major socialization studies, but general cultural ideas held by medical students of what medicine is and how to best prepare for a career in that field. This study proposes that these conceptions vary by the socioeconomic status of students. It also remains unresolved which is the more

powerful—medical socialization or socialization prior to medical school. This study will not resolve that issue. Instead, it will be a first step towards measuring pre-socialization attitudes of medical students. The intention is to determine how significant these conceptions are and how much they relate to the issue of specialty choice.

This study's theory is that the socioeconomic status of the physician determines their attitude towards the status of specialized or general medicine. It is believed that this is especially crucial at the time of specialty selection during medical education.

Socioeconomic status incorporates more than just one's position ion the social order. It also represents one's attitudes and expectations. More specifically, socioeconomic status impacts on individuals' perceptions and ideologies. This study is concerned with those perceptions and ideologies that relate to generalist careers.

The ambiguous occupational status of medicine, between business and public service, positions it to attract aspirants from all socioeconomic groups. The attitudes, motivations, and core beliefs of physicians are therefore as varied as the socioeconomic backgrounds from which they come. It can also be assumed that these life experiences and attitudes do not leave a student upon entry into medical school. Therefore, it is not only the decision to become a physician which is influenced by one's socioeconomic background, but the later decisions of what specialty to enter and what type of practice arrangement to use.

The effect of socioeconomic status on specialty choice has not been extensively studied. Overall, there is no single factor that stands out in regard to specialty choice. Recent analyses have looked at SES, but in the context of the study of the effects of race to medical school admission, performance and attrition. The AAMC has gone on record

as advocating increased admission of minority students (Nickens, Ready and Petersdorf 1994, Petersdorf, Turner and Nickens, 1990) to maintain diversity in the workforce and has assumed that minority students will be more eager to work and establish practices in underserved urban areas. Cregler et al.(1997) and Thurmand and Cregler (1993) conclude that race is more directly a predictor of geographic location of practice rather than type of specialty practice. Other studies have found race and ethnic background have no effect on specialty choice. (Cuca 1980, Babbot et al. 1989, Adams and Barzoli 1986, Long 1980) and are only slightly more likely to predispose one to choose primary care (Xu et al. 1996). Recent data show that the preference for primary care among minority physicians is fading. [5] (Nickens 1992). Minorities are now only slightly more likely to choose primary care specialties than whites. It is important to note that these choices are based on residency selection and represent residency matches, which may or may not reflect students' actual preferences.

Very few studies deal with the relationship between socioeconomic status and specialty choice. Gough and Ducker (1977) looked at a cohort of medical students and found that the percentage of those choosing a generalist career increased as one moved from higher socioeconomic status to lower socioeconomic status. However, this study dealt with their choices and not their attitudes upon entering medical school. Becker (1961) found students to be largely of middle class background, with some exceptions from lower class backgrounds. Bloom's 1973 study of one urban, state-supported school

[5] In 1996, only 39% of black students and 41% of Hispanic students were matched in a generalist residency (family practice, internal medicine, or pediatrics) compared with 34% of white students. It should be noted that blacks made up only 5.5% and Hispanics (a less precise category) 6.4% of generalist residents. Among Asians, an understudied and fast-growing group, almost half, (48%) chose non-generalist residencies. It should also be noted that choosing a general residency does not preclude a later choice to subspecialize. (Full data are published annually in the Journal of the American Medical Association's (JAMA) education issues.

found students to be from middle to lower middle class background with many having a foreign born parent.

The preferences for specialties may reflect needs other than socioeconomic interests, such as the desire for high income (Ebell 1989, Shulkin 1989), the need to pay off excessive debt (Kasebaum et al. 1993, Park 1990), opting for a more controllable lifestyle (McCarty 1987) or the general ideolgy of the era (Funkenstein 1975). Empirical evidence on who enters primary care shows that older students, students from state schools, and liberal arts majors rather than science majors are more likely to become generalists. (Campos, Outcalt and Senf 1989, Cullison, Reid and Colwill 1976, Martini et al. 1994).[6] Women have been found to be more likely to choose primary care careers than men. (Martini et al. 1994, Gough 1975,). The basis for women choosing primary care may stem from their preference for shorter work hours. A 1969 study (Powers et al.) found that women worked 30% less hours than men. A later study by Jussin and Muller (1975) fond a 40% difference in practice time.

Overall, there is no single factor that stands out in regard to specialty choice. Race, once the best predictor of who would become a generalist, is losing its predictive power. Social class interferes with the attempts to isolate specific predictors of specialty choice. This study proposes that it is a combination of socioeconomic characteristics that predisposes individuals to specialism. While the concept of class is antiethical to the profession, it is very prominent in the eyes of those aspiring to enter.

This study proposes that the attitudes that favor specialism correspond to attitudes typical of upper and middle class students. Lower class attitudes and

expectations would incline one to generalism, but these students are not well represented in medical school.

[6] The studies cited represent just some of the works on specialty choice. For bibilographical essays of specialty choice see Ernst and Yett (1984), Colquitt (1993), Kessebaum, Szenas and Ruffin 1993, Martini et al (1994) and Bland, Meurer and Maldonado (1995).

Chapter 2: THE HYPOTHESIS

Much of the literature addressing the specialist imbalance deals with medicine as a "profession"; an institutionally based, professionally governed and administered structure in need of different types of reforms. The issue of socialization is treated as it occurs within and not prior to the experience of medical school. However, a student's orientation towards general or specialized medicine, which is an important element of socialization, may take place prior to medical school or outside of a pre-medical curriculum.

This study intends to look at the profession from a social class and academic culture standpoint—to analyze the socio-economic backgrounds and prior educational experiences of medical students and to inquire about the attitudes they bring with them into medical school. At issue is whether the profession has overlooked the class dynamics of their students and possibly overestimated the altruistic aspects of medical careers. The altruistic values of medicine are broadly understood by those applying for entry into the profession. While this altruism is in most cases genuine, it also cannot be overlooked that this is a culturally based attitude that is *expected* of all medical students.

The hypothesis to be tested is whether the inability of the medical schools to produce the required number of generalists exists because of a bias against general medicine both in the medical schools and in the marketplace. This study will concentrate on the attitudes of medical students in the early stages of their education. It will measure what attitudes students bring with them into medical school.

This study proceeds from the belief that there is a bias that equates specialized medicine with higher status, higher income and more "scientific" medicine. Attempts to

socialize students into general medicine fail because students have already absorbed this bias before they have even entered medical school. The goal of the study, at this point, is to see whether a bias exists and whether it is more pronounced in a specific type of student. A much more in-depth interview would determine where this bias comes from , but that is beyond the scope of this project.

This study proceeds from the belief that students with high socio-economic status recognize the status differences between the specialties eariler and more easily than do students from lower socio-economic status.

Also, once medical students are socialized into the culture of quality through science that exists in medical schools and teaching hospitals, it is very difficult to get them to buy into the value of general medicine. Therefore, a student's experience with science, usually as a pre-med student, will help to determine the choice to specialize. This study proposes that that the transition from college to medical school is crucial in determining a physician's career path. At this juncture the student's attitude toward science will determine his status goal. Those students who have not had an intensive highly competitive science education should be more generalist oriented.

HOW THE DATA WAS COLLECTED

With eight medical schools ion the greater New York area, it was believed that one could reasonably expect to achieve a representative sample of medical students. However, this proved more difficult than anticipated. Previous to the survey, this researcher had visited all the medical schools in the area to interview Deans and administrators who dealt with issues of of recruitment and training of primary care physicians.

The first interview was at Mount Sinai, with Dr. Barry Stimmel, former Dean of Students, and then Dean of Graduate Medical Education. Samuel Bloom Ph.D, who also served as dissertation adviser and member of the committee provided an introduction to Dr. Stimmel so that an interview was easily arranged. It was through these interviews that the idea of integrating the professional literature with the culture of administering a medical school began to develop. With Sam Bloom's assistance I participated and observed "Match Day," the day when students receive word on what specialty residency they have been accepted (or matched) into. Connections at Mount Sinai also allowed for access to the medical school library and its many texts and journals. It also allowed for quiet observation of medical students in some of their intellectual pursuits and more casual moments. Hanging out in the Mt. Sinai cafeteria did not yield any directly reported results for this study, but that too was invaluable for observing the world of medical students. Absorbing their conversations in the cafeteria and libraries and in the elevators traveling between those places made the world of medical school a very familiar place for this sociologist. It also helped that I never had to solicit the students. I worked independently on the outskirts of their world. I probably appeared to them as just another researcher, or perhaps a fellow in a graduate program, or someone working on a grant-funded project. There was no conflict at all between researcher and subjects, thanks in part to the ability to integrate into the medical school setting. The study was well-received, and administrators were very willing to offer assistance.

An introduction by Sam Bloom also enabled the arrangement of several interviews at Cornell Medical College. The key figure at Cornell, was George Reader, a former member of the Bureau of Social Research, and a co-author of the famous study

"The Student Physician." Dr. Reader provided the contacts that gave access to two Deans and to an official at the admissions office. However, despite prolonged efforts, permission to survey students at Cornell was not permitted.

The process was repeated at the other area schools, Downstate, Columbia, NYU, and New York Medical College. After settling on conducting a survey, a concise, yet informative set of questions that would yield useful data yet be short enough to not take up too much of a student's time was developed. It was important that this survey satisfy the Deans at the schools that the students were not being harassed by overly long or tedious surveys. This was not just an administrative concern. An overly long survey may discourage students and affect their answers in the latter part of the surveys. The surveys needed to be short, yet precise enough information to provide a dissertation length report.

The design of the survey was modeled less on the standard surveys done by the AAMC and more on a survey done by Sam Bloom in his 1973 study of Downstate Medical College. First, the AAMC surveys were longitudinal in character, and were interested in how students turned out. The AAMC's matriculation survey had all the relevant information but did not inquire about specialty choice. My survey combined these elements, using scales and eliciting responses in terms of their social backgrounds.

The next step was obtaining approval for the survey by the medical schools. Since the study involved human subjects, it was subject to the same type of review as invasive studies. This is to ensure that medical ethics are upheld and that the survey has social and scientific value. Three types of responses were received—outright rejection, rejection by prolonged delay, and approval.

The process varied by school. SUNY Downstate rejected the request out of hand. They said that there was enough being written on the issue and that the survey did not appear to offer anything new. New York Medical College also rejected the proposal. They claimed that they feared their students would be burned out by another survey, as their population has been intensely studied by their office of Primary Care Studies. The results of that survey were published in 1999.

At Cornell, the proposal and questionnaire were well-received by the Dean of Students but were tabled by his superior and although reassurances were provided that it should pass their review board easily, it appears that it never was put before the board. Columbia's Internal Review Board received the proposal and questionnaire through a Dean with whom I had developed a good rapport. However, approval was never granted, despite several follow-up calls to the Dean.

The proposal was approved at four schools. The first approval came from Mount Sinai. Sam Bloom was critical in the approval process. The forms for Sinai required that the principal investigator be a member of the medical school faculty. As a member of the Department of Community Medicine, Sam was listed as the principal investigator and I was listed as a co-investigator. Sam then got approval and signature from his department chairman, thus completing the documents and expediting the proposal through the Internal Review Board.

The next approval came at the Sophie Davis School of Biomedical Science. Credit for getting approval here must be given to Charles Winick, who made the necessary contacts and introductions for pitching the proposal. Having sponsors from

the CUNY faculty certainly helped in attaining approval. It also helped to tell them that the survey was already approved at Mount Sinai.

The survey was also approved at the Albert Einstein School of Medicine. It is very possible that the previous approvals at Sinai and Sophie Davis eased the process here. The approval came quickly. A more than adequate sample was now assured. NYU also approved the survey, after a delay. However, NYU's approval was on the condition that all surveys be handed over to the Dean for distribution through student mailboxes. This meant that the surveys would be strictly voluntary. A very small response ensued and it never grew, but by this time, 370 completed surveys had been completed at the other schools.

ADMINISTERING THE SURVEYS

Approval was just one obstacle on the road to completing the project. Responses were now needed. Medical students are renowned for their extremely busy workload and lack of time. Sam Bloom provided another valuable introduction at Mount Sinai, this time, to Joyce Shriver, the Dean of Student Affairs. She helped work out a plan . Leaving surveys in students' mailboxes was agreed to be too inefficient in gaining responses. This would have effectively made the response voluntary and also bias the sample. It was arranged to capture the students in settings where they could not easily walk away. In addition, Dean Shriver sent students e-mails reminding them that a "very important" survey was being conducted and they were expected to participate. With the permission of Dean Shriver and the lecturer, I arranged to sit in on a classroom review session at which the survey was explained. This was a review session for an exam and was well-attended. However, many of the students were nervous about their impending

exam. The at the end of the session, the surveys were distributed and students were instructed on how to fill them out.

Several methods to assure a highly representative response were used. Dean Shriver provided a printout of all the students in the first and second year class. After completing a survey they were to sign the sheet in the space beside their name. This gave the survey the look of an administrative project. The process was repeated with the first year class. In this case, the students were captured as they walked out of a lab. Again, Dean Shriver sent e-mails and posted signs to remind the students that their participation was expected in a "very important survey" . Surveys were left in mailboxes of students who did not complete one. Dean Shriver also volunteered to take a copy of the list of students who had not completed the survey and then took a pile of surveys to keep in her office. Students who saw her on school business were asked if they filled out a survey, if not, they were requested to fill one out in her office. This netted an additional 15-20 surveys.

The same process was repeated at the Sophie Davis School of Biomedicine. The Dean arranged a meeting with a professor before a class, and I was given 15 minutes to get the students to fill out the surveys. This was done at Downstate, where the entire first year class had their anatomy lab. Students filled out their surveys in the hall outside the anatomy lab, as the smell of formaldehyde seeped out from the lab , where the cadavers were in various states of dissection. This provided a first hand account of one of the unforgettable smells of medical school, and this scent was carried home on my clothes and even on the pages the completed surveys. Capturing all the Sophie Davis students was more difficult because they were scattered between the CCNY campus in upper

Manhattan the the Downstate campus in Brooklyn. After the first large catch, there were diminishing returns. A visit to a class would yield 10 surveys or less. Another Dean provided valuable assistance. Dean of Students Jody Meyer volunteered to administer the surveys herself at an upcoming assembly she was holding for the entire class. She administered surveys to most of the remaining students at this assembly. This accounted for about 30 surveys.

When Albert Einstein College of Medicine approved the proposed questionnaire, it was already very late in the semester. One last lecture for the entire first year class provided the opportunity to adminster the surveys. The Dean himself, Dr. Robert Reichgott, was the guest lecturer of that class and after providing an introduction of the nature of the project, urged the students to participate. Since it was late in the semester and since a healthy sample had already been acquired, no attempt to follow up via class lists, or Dean's assistance was made. As a result the reponse rate was lower than the two participating schools, but it was still high. 88 surveys were collected that day. A few students left immediately after the lecture, and a few others didn't bother to fill out surveys. I found a few blank surveys lying on desks. This provided an appreciation for the difficulty of working even with captive audiences.

Surveys were delivered to NYU in late summer, hoping to get them back in late September. However, only a small number were completed. More time was provided and the Dean reminded students about them but the number never rose. Only 15 surveys were completed at NYU. By that time the data was already being run, so these surveys were left out the database. NYU showed the importance of having the researcher present in conducting surveys.

This experience also showed that in order to do research at medical schools, personal connections are essential. Welcomes were extended at area medical schools, and officials worked hard in providing the assistance to allow access to their students. However, the quality of the connections proved more important than the quantity. It seemed that good connections were established at all the schools, but it was the connections through Sam Bloom, Charles Winick and CUNY, which opened doors and persuaded people to go the extra mile. This project would not have been possible without the support and the dedication of Sam Bloom, and Joyce Shriver at Mount Sinai, Charles Winick and Jody Meyer at CUNY, and Dr. Andrew Mezey and Dr. Robert Reichgott at Albert Einstein Medical School. These people deserve special thanks.

PROCESSING THE DATA:

The surveys were entered into an SPSS program(Statistical Package for the Social Sciences) and analysis began. The results are presented below.

Chapter Three: Findings

The results of the questionnaire were entered into an SPSS statistical package. Independent and dependent variables were cross-tabulated and the results are detailed below. The primary emphasis is finding the variables that are most closely associated with a preference towards general medicine.

Specialty choice is an especially complicated matter, which involves a combination of personality, academic experience and socio-economic background. It is also likely that the "choice" students have made at this early stage of their career will change over the course of their medical education.

Therefore, this survey stresses the tendencies that students have at the early stage of their education. It is not necessarily about choice since it is not expected that students will have chosen a specialty at this point. Specialty choice must be made distinct from area of specialization. Area of specialization indicates the general field in which the student expects to practice; general medicine or specialized medicine. Within this group are students who have made specific choices. They will not be treated in this chapter.

It is acknowledged that the student may have no particular specialty in mind. "Area of specialization" is designed to measure the tendency or general expectation of the student's eventual area of practice. The student's expected area of specialization is then correlated with gender, racial and ethnic background,

social class, undergraduate major, degree of competitiveness and a series of questions relating to general health care policy.

In this chapter, we shall also isolate the major social class indicators pertaining to area of specialization. Since the major sociological studies on specialty choice have been qualitative studies stressing socialization, they have not treated social class directly. This study will address social class as it applies to future area of specialization. I will identify major trends that can help identify those which are more likely to become generalist physicians.

The results of the survey are detailed below.

The results do not show an overwhelming support for specialized medicine. The attitudes of first and second year medical students are encouraging for those who wish to recruit future generalist physicians. Overall, 45% of the sample expressed interest in generalism, 30% favored specialism and 21% was undecided. However, the problem is that first and second year medical students still have a long time before they decide on their residency and their future area of practice. Defection from generalist medicine remains a serious problem for the profession.

One finding was the lack of early choice among students. Only about 20% of medical students claim to have already chosen a specialty. Among those who have chosen, the majority has chosen generalism. There did not appear to be any relationship between social class and early decisions regarding specialty choice. (See tables 11 and 12 in appendix)

The results of my survey decidedly do not show that students overwhelmingly favor specialism at the early stages of their careers. A great number of students remain undecided, and most who have decided have only decided on a general area - generalism or specialism - rather than a particular specialty choice. However, comparing the background of those who have chosen generalism versus specialism, we do find significant differences. From these differences, we can begin to theorize about the reasons for the inevitable future defections to specialism. In addition, we can begin to understand how the interactions of the variables combine to produce different attitudes that lead students towards selecting their specialty.

The Variables:

SOCIAL CLASS

I have found a direct relationship between social class indicators and preference for specialism. Parents' income, education and occupation all impact on the student's preferences. Table 1a breaks down the entire sample. Tables 1b and 1c compare those who favor generalism against those favoring specialism

Comparison with census data shows that medical students are much more likely to come from wealthy families than we would expect to find in the population. About 30% of the families in the population have income under $30,000, whereas only 13% of my medical school sample comes from this group. (An exact comparison is not possible since the national sample cut off point is $35,000.) The overrepresentation of wealthy families in medical school is very

clear. 20% of the national sample have incomes of more than $75,000, while the medical school sample from this category is more than 40%. Again, an exact comparison is not possible because of the overlap of the categories. Medical student family income is highly skewed towards the upper categories. More than 10% of the sample had incomes exceeding $250.000.

The relationship between parents' income and specialty choice was found to be significant at the .01 level. From the data, we see that there is a very clear relationship between parents' income and specialty choice. Interest in generalism decreases as income rises. 70% of the lowest income group expects to become generalists versus only 24% of the highest income group. However, middle income groups are much closer to low income groups in their preferences than they are to upper income groups, a trend that will be discussed in more detail below. Interest in generalism declines only slightly to 67% in the $60-100,00 range and falls to 51% in the $100-250,000 range.

However, interest in generalism is not symmetrical with disinterest in specialism across all income groups. Lower income students are more interested in specialism than middle income students. Among those in the top income level, 56% express interest in specialism compared to only 27% in the $30-60,000 range - a more than 2:1 ratio. (See table 1c) Indecision also increases as income increases. The lowest income group has the lowest rate of indecision while the highest income group has the highest. (The effect of indecision is discussed in the appendix.)

After finding the data significant at the .01 level, the categories were then compressed in the sample for easier comparisons. Here the trend appears clearer. The preferences of middle income groups in regard to generalism is much closer to the lower income group than to the upper income group. There is only a 6% difference between the low income group and the middle income group, while there is a 23% difference between the middle and upper income groups The trend is clear: the higher the parents' income, the higher the preference for specialism. However, we also see that the middle income students are quite inclined towards generalism.

When measuring social class by its separate components, income is the strongest predictor of area of specialization, partly because it represents the accumulated effect of occupation and education. Occupation, in turn, is the effect of education. Next, I will examine education.

Comparisons with a national sample show how highly educated the parents of medical students are compared to the population. (Source: Statistical Abstract of the United States.) 46% of the national sample of 45-54 year olds (the likely age of medical students' parents) had an education of 12 years or less compared to only 13% of the medical school sample. Just under 12% of the national sample had an advanced degree compared to 57% of the medical school sample. More than three quarters of medical students' parents were college graduates compared to 28% of the national sample.

However, I did not find the correlation between education and specialty area to be significant. The number of cells with low counts contributed to the high p value in the table. The p value can be reduced by collapsing the independent variable. So, while we cannot speak of precise correlations, we do see certain trends.

The significance of education and specialty choice was not highly significant, due partly to the high number of cells with less than the expected value. The significance improves if we narrow the categories (see table 2b). The apparent trend is that as the length of the parents' education increases, the preference for generalism decreases. The differences are most apparent at the extreme ends of the table, while the middle values show a more gradual decline in interest in generalism.

The relationship between occupation and specialty area is significant at the .001 level. Table 3A and 3B look at the relationship between those with professional parents and those with non-professional parents. Table 3c and 3d compare the effects of different non-professional occupations. The effect of occupation is strong. Children of professionals (physicians, lawyers, engineers, e.g.) preferred specialism at a higher rate than children of non-professionals, as the table below shows. Students with a physician parent are slightly more inclined towards generalism than the children of other professionals, but still significantly less disposed to generalism than those with non-professional parents. The relationship between occupation and specialty area (table 3b) was found to be

significant at the .001 level. Table 3c looks at subsets of professional and non-professional occupations.

First, looking at the relationship between professionals and non-professions we see that children of non- professions are more than 20% more likely than children of non-professionals to prefer generalism. We also see that the children of physicians are slightly more likely than the children of other types of professionals to prefer generalism.

Next, we compare some of the non-professional occupations

In total, non-professional occupations are highly correlated with a preference for generalism. Approximately three-quarters of non-professionals expressed interest in generalism. Especially strong was the relationship between those with a nurse parent. Almost 90% of this group expressed an interest in generalism. Since occupations were varied, they needed to be grouped. Teacher parents were well represented in the sample. But the children of teachers compared more closely to the children of other professionals, with a generalist preference rate only slightly higher than other professionals. Those with teacher parents were slightly more likely to favor specialism than other professionals (56% to 54%). Those with nurse parents favored generalism 87% to 13%.

Table 1a: Parents' Income and Specialty Choice Area (Entire Sample)

	<$30,000	$30,000 - $59,000	$60,000 - $99,000	$100,000 - $250,000	>$250,000	Total
Generalist	28 59%	44 58%	45 50%	38 37%	6 16%	161 46%
Specialist	12 25.5%	15 20%	22 24%	37 36%	19 51%	105 30%
Other	3 6%	5 6.5%	3 3%	6 6%	3 8%	20 6%
Undecided	4 8.5%	12 15.5%	20 22%	22 21%	9 24%	67 19%
Total	47 100%	76 100%	90 100%	103 100%	37 100%	353 100%

Response Rate: N=353 (94.6%) Missing =20 (5.4%)

Chi Square=30.345 $p<.01$

Table 1b: Parents' Income and Area of Specialization (Those choosing Specialty Area)

Area of Specialization	PARENT'S INCOME					
	<$30,000	$30,000 - $59,000	$60,000 - $99,000	$100,000 - $250,000	>$250,000	Total
Generalist	28 70%	44 75%	45 67%	38 51%	6 24%	161 61%
Specialist	12 30%	15 25%	22 33%	37 49%	19 76%	105 39%
Total	40 100%	59 100%	67 100%	75 100%	25 100%	266 100%

Chi Square =24.625 p<.001

Table 1c: Income and Specialty Area (Compressed Categories)

Area of Specialization	PARENT'S INCOME			
	Low $30-60,000	Middle $60-99,000	High >$100,000	Total
Generalist	72 73%	45 67%	44 44%	161 61%
Specialist	27 27%	22 33%	56 56%	105 39%
Total	99 100%	67 100%	100 100%	266 100%

Table 2a: Father's Education and Specialty Area (Entire Sample)

Area of Specialization	FATHER'S EDUCATION					
	<12 years	12 years	13-16 years	16 years	>16 years	Total
Generalist	14 64%	15 58%	18 50%	39 52%	78 38%	164 61%
Specialist	4 18%	6 23%	10 28%	21 28%	64 31%	105 39%
Other	1 5%	0 0%	1 3%	4 5%	14 7%	269 100%
Undecided	3 14%	5 19%	7 19%	11 15%	50 24%	105 39%
Total	22 100%	26 100%	36 100%	75 100%	206 100%	365 100%

Missing cases=8 (2%) Chi Square= 13.287 p< .30

Note: 6 cells (30%) have expected value less than 6

Table 2b: Father's Education and Specialty Area (Those Choosing Spec. Area)

Area of Specialization	FATHER'S EDUCATION					
	<12 years	12 years	13-16 years	16 years	>16 years	Total
Generalist	14 77%	15 71%	18 64%	39 65%	78 55%	164 61%
Specialist	4 23%	6 29%	10 36%	21 35%	64 45%	105 39%
Total	18 100%	21 100%	28 100%	60 100%	142 100%	269 100%

Chi square= 5.818 p<.20

Table 3a: Occupations and Specialty Area (Entire Sample)

Area of Specialization	PARENT'S OCCUPATION			
	Physician	Other Professional	Non-Professional	Total
Generalist	22 36.5%	30 32.5%	112 53%	164 45%
Specialist	21 35%	35 38%	49 23%	105 29%
Other	3 5%	6 6.5%	11 5%	20 5%
Undecided	14 23.5%	21 23%	41 19%	76 21%
Total	60 100%	92 100%	213 100%	365 100%

Missing Cases=8 (2%) Chi Square =11.580 p<.10

Table 3b: Occupations and Specialty Area (Those Choosing Specialty Area))

Area of Specialization	PARENT'S OCCUPATION			
	Physician	Other Professional	Non-Professional	Total
Generalist	22 51%	30 46%	112 70%	164 61%
Specialist	21 49%	35 54%	49 30%	105 39%
Total	43 100%	65 100%	161 100%	269 100%

Chi Square=10.993 p<.01

Table 3c: Non-Professional Occupations and Specialty Area (Entire Sample)

Area of Specialization	PARENT'S OCCUPATION			
	Teacher	Nurse	Other	Total
Generalist	11 37%	14 54%	87 55%	112 53%
Specialist	14 47%	2 8%	33 21%	49 23%
Other	1 3%	1 4%	9 6%	11 5%
Undecided	4 13%	9 35%	28 18%	41 19%
Total	30 100%	26 100%	157 100%	213 100%

Table 3d: Non-Professional Occupations and Specialty Area (Those Choosing Specialty Area)

Area of Specialization	PARENT'S OCCUPATION			
	Teacher	Nurse	Other	Total
Generalist	11 44%	14 87.5%	87 72.5%	112 70%
Specialist	14 56%	2 12.5%	33 26.5%	105 30%
Total	25 100%	16 100%	120 100%	161 100%

SOCIAL CLASS: AN INDEX

All of these variables can be tested separately, but they do not give us a coherent portrait of social class. Therefore, I have constructed a social class index to classify students into 3 groups: upper, middle and lower. The social class index was compiled by assigning scores of 1-5 in the categories of income, education and occupation. In the case of two parents working, the higher prestige occupation was chosen. This eliminated the problem of categorizing the occupation of housewife, which often meant the household is sufficiently wealthy due to the income of the other parent. However, both parents' education was included in the index because this represents the potential achievement of the parent who, in many cases, chooses not to work. The possible range of scores was 4-10 and every rank was represented. In all, 346 cases were able to be coded. If any information for a case was missing, the index was not computed.

The medical students in my survey are disproportionately upper class. 50% of the students fall in the top third of the ranking distribution categories, 38% in the middle and only 12% fall in the lower third. These numbers are more dramatic when private medical schools are separated from state schools. (Sees tables 13 and 14 in appendix) In order to create a more even distribution, the categories were split along the following lines:

Cumulative Rank	Social Class Rank	Number of Cases
4-6	1 (Upper)	106
7-10	2 (Middle)	130
11-20	3 (Lower)	110

27 cases (7%) provided incomplete information, so their rank was not calculated.

Overall, when the components of class are combined, the effect remains quite clear. Generalism is most favored by the lower class and is least favored by the upper class. The highest percentage of generalists came from the lower class group. Only in the upper class group did a majority (54%) prefer specialism. Thus, the trend is that interest in generalism increases and interest in specialism decreases as one moves lower in the social class category. Upper class students are the most likely to be undecided.

It is not that medical students of lower socio-economic status have lower goals than their upper class classmates as the data will show. It appears that a form of occupational socialization prevails. Lower class students perceive status differently and thus more readily identify with generalist medicine. It is less the case that they see themselves as lower status doctors, than that they are they are less aware of the lower status of general medicine from within the profession.

Next, we will look at how socio-economic status is linked with other variables. Can socio-economic status be explained by the other variables?

Table 4a: Social Class and Specialty Area (Entire Sample))

Area of Specialization	SOCIAL CLASS			
	Upper	**Middle**	**Lower**	**Total**
Generalist	31 30%	64 48%	63 57%	158 46%
Specialist	37 35.5%	36 27%	26 24%	99 29%
Other	8 7.5%	8 6%	4 4%	20 6%
Undecided	28 27%	24 18%	17 15%	69 20%
Total	104 100%	132 100%	110 100%	346 100%

Missing cases 27 (7%) Chi Square= 17.408 p<.01

Table 4b: Social Class and Specialty Area (Those Choosing Specialty Area)

Area of Specialization	SOCIAL CLASS			
	Upper	**Middle**	**Lower**	**Total**
Generalist	31 46%	64 64%	63 71%	158 61%
Specialist	37 54%	36 36%	26 29%	99 39%
Total	68 100%	100 100%	89 100%	257 100%

Chi Square=10.775 p<.01

GENDER

Traditionally, women have been more inclined towards generalism, but there is evidence that this may be changing (Schermerhorn and Verhultst 1989). My data shows that women are more inclined towards generalism. (See tables 5a and 5b) Half the women surveyed indicated interest in generalism.(Table 5a). Among those who indicate an area of specialization, two-thirds of women expect to practice general medicine as opposed to just over one half of the men (Table 5b)

However, previous surveys did not combine the effects of gender and class. The clear linear relationships that we saw between class and specialty choice are more complicated when gender is added.

Table 5c looks at the relationship between gender and social class ranking upon specialty choice. We see that only in the middle class group is there a significant relationship between gender and specialty choice ($p<.10$) When we split the generalists from the specialists by gender, we come up with roughly a 60/40 split in favor of generalism in this middle class group. In each class grouping, women prefer generalism at higher rates than do men. Among men and women, the lowest preference for generalism is among the upper class As we move from upper to lower class, the preference for generalism increases in each group, except when it peaks at 75% for middle and lower class women.

Gender has different effects within each class grouping. In table 5d, the categories were narrowed to those who had indicated an area of specialization The upper and middle class groups achieved significance levels of .10 and .05 respectively. The lower class group was found to be insignificant, indicating no relationship between gender and class on specialty area.

The trend here seems to be that the effect of gender matters less among lower class students but it does effect middle and upper class students. Middle class women are highly inclined towards generalism and they resemble lower class women far more than upper class women in this respect.

Middle class men are more inclined towards generalism than upper class men, but less so than lower class men. In the social class group with the strongest generalist orientation - the lower class group - there is the narrowest margin between men and women. The widest margin between men and women is in the middle class group. There is a 23% difference between the preferences for generalism versus specialism here. The smallest gap is among the lower-class group - only 9%. The difference in the upper-class group is 19%.

The effects of class and gender seem to cancel each other out in the larger population. Table 5d shows identical percentages of middle and lower class women interested in generalism. The major difference between these groups lies in the larger percentage of middle class women who are undecided or are interested in specialites not related to patient care.(Table 5c) Generalism is more popular among middle class women than middle class men, and middle class men. In

every class, women are more likely than men to be undecided about their field, but class impacts on this trend as well. Among women, the higher the class ranking, the higher the percentage of undecideds. Upper class women are more than twice as likely to be undecided than lower class women. However, among men there is only small differences between the undecideds by class, with the lower class group actually slightly more likely than the middle class group to be undecided.

From these data we see several trends. While across all classes women are more likely to prefer generalism, class remains a powerful predictor of who prefers generalism. The proportion of those who prefer generalism increases as we move from the upper to the lower class groups. We also see the smallest difference between genders in the lower-class group.

Table 5a: Gender and Specialty Area (Entire Sample)

Area of Specialization	GENDER		
	Men	**Women**	**Total**
Generalist	60 38%	102 50%	162 45%
Specialist	54 34%	51 25%	105 29%
Other	10 6%	10 5%	20 6%
Undecided	34 22%	40 20%	74 20%
Total	158 100%	203 100%	361 100%

Missing cases =12 (3%) Chi Square =5.944 p<.20

Table 5b: Gender and Specialty Area (Those Choosing Specialty Area)

Area of Specialization	GENDER		
	Men	**Women**	**Total**
Generalist	60 53%	102 67%	162 61%
Specialist	54 47%	51 33%	105 39%
Total	114 100%	153 100%	267 100%

Chi Square= 5.393 $p<.02$

Table 5c: Gender and Area of Specialization (Entire Sample)

Class/Area of Specialization	GENDER		
UPPER	**Men**	**Women**	**Total**
Generalist	8 20.5%	20 33%	28 28%
Specialist	17 43.5%	19 32%	39 39%
Other	4 10%	4 7%	8 8%
Undecided	10 25.6%	17 28%	27 27%
Total	39 26%	60 32%	99 29%
MIDDLE	**Men**	**Women**	**Total**
Generalist	24 38%	39 59%	63 49%
Specialist	22 35%	13 20%	35 27%
Other	4 6%	4 6%	8 6%
Undecided	13 21%	10 15%	23 18%
Total	63 42%	66 35%	129 38%
LOWER	**Men**	**Women**	**Total**
Generalist	23 49%	40 64.5	63 58%
Specialist	12 25.5%	13 21%	25 23%
Other	2 4%	2 3%	4 4%
Undecided	10 21.5%	7 11%	17 15.5
Total	47 32%	62 33%	109 32%
Grand Total	149 32%	188 33%	337 32%

Chi Square values: Upper 2.737 p<.50 Middle 6.211 p<..10 Lower 3.152 p<.30

Table 5d: Effect of Gender and Class on Specialty Area (Those Choosing Specialty Area)

Class/Area of Specialization	GENDER		
UPPER	**Men**	**Women**	**Total**
Generalist	8 32%	20 51%	28 44%
Specialist	17 68%	19 49%	36 56%
Total	25 100%	39 100%	64 100%
MIDDLE	**Men**	**Women**	**Total**
Generalist	24 52%	39 75%	63 64%
Specialist	22 48%	13 25%	35 36%
Total	46 100%	52 100%	98 39%
LOWER	**Men**	**Women**	**Total**
Generalist	23 66%	40 75%	63 72%
Specialist	12 63.5%	13 25%	53 60%
Total	35 100%	53 100%	88 100%

Missing cases=17 (6%) Chi Square: Upper 2.2302 p<.10 Middle 5.539 p<.05 Lower .987 p< .50

RACE/ETHNICITY

We next consider the effect of race and ethnicity on the preference for generalism or specialism. Table 6a shows the results.

With race we also see real differences. Slightly more than half of whites (54%) favor generalism, whereas close to two-thirds of Blacks, Hispanics and Asians are inclined towards generalism. Blacks and Hispanics are slightly more likely than Asians to favor generalism. We also see that whites and Asians are more than twice as likely to be undecided about a specialty area than that Blacks and Hispanics. The relationship between race/ethnicity and specialty area, however, is not highly significant.

Table 6a: Ethnic Background and Specialty Area (Entire Sample)

Area of Specialization	ETHNIC BACKGROUND				
	White	Asian	Black/Hispanic	Other	Total
Generalist	66 38.5%	54 47%	36 59%	10 50%	166 45%
Specialist	57 33%	29 25%	16 26%	4 20%	106 29%
Other	12 7%	5 4%	2 3%	0 0%	19 5%
Undecided	36 21%	27 23%	7 11%	6 30%	76 20%
Total	171 100%	115 100%	61 100%	20 100%	367 100%

Missing cases=6 (1.6%) Chi Square=13.318 p<.20

Table 6b: Ethnic Background and Specialty Area (Those Choosing Spec. Area)

Area of Specialization	ETHNIC BACKGROUND			
	White	Asian	Black/Hispanic	Total
Generalist	66 54%	54 65%	36 69%	156 60%
Specialist	57 46%	29 35%	16 31%	102 40%
Total	123 100%	83 100%	52 100%	258 100%

Chi Square= 5.484 p<.20

RACE/ETHNICITY AND CLASS

Looking at the broader trends between race and specialty area we begin to see the complex workings of class, and the problems of recruiting future generalists based on race. White medical students come from wealthier households than do other groups. Table 6d shows that over half (53%) of white medical students come from families making more than $100,000 a year. This far surpasses the percentage of Asians (32%) and Blacks (23%), in this income category. Only 16% of Hispanics made this much money. There differences in income between the races in medical school is apparent. If we look at the proportion of students that come from low-income households, the situation is the inverse of wealthy households. 61% of Hispanics, 51% of Blacks, 40% of Asians come from these families, as opposed to 23% of whites.

This trend is also apparent in our measurement of socio-economic status. Race appears to be synonymous with social class ranking as 69% of Blacks and Hispanics fall into the lower economic category, compared to 31% of Asians and 20% of whites. (Table 6e)

Overall, only 12% of the Black/Hispanic students were categorized as upper class, compared to 27% of Asians and 40% of whites. There were not enough upper-class Black and Hispanic students to make significant comparisons. The 11% difference between whites and Asians choosing generalism (table 6b)

can be largely explained by the relatively fewer Asians that can be categorized as upper class. When we control for class in table 6c, we see that whites and Asians are much more similar.

Yet the middle-class group has the highest percentage of those preferring generalism. The lower-class group is split 50/50 between generalism and specialism. Issues of class may be intertwined with issues of mobility. The key cases may be those families with high education and low occupational status.

Race and ethnic background did not appear to be a significant factor in this survey. Whites are the most likely to favor specialism, but since race is highly correlated with class, the effects of race mirrored those of class.

As we move towards the middle class, the differences between the racial/ethnic groups become most pronounced and resemble the correlations of class. White, middle income students are the least generalist-oriented, followed by Asians and then Blacks and Hispanics. The effects of race and gender are activated in this group, whereas in the lower and higher income groups, the effect of race and gender are less pronounced.

There are far too few upper class Black and Hispanic students to test the effects of class on specialty choice in this group. Their scarce representation is powerful testimony to the power of education, occupation and income in creating the class structure.

White middle class students also show the effect of class on racial groups. Middle class whites are 12% more likely than upper class whites to favor

generalism. The effect of race on class for Asians is twice as great. Middle class Asians are 24% more likely than upper class Asians to favor generalism.

The middle class group, again, proved to have the most potential for producing generalist physicians. Whites are less generalist oriented than Asians or Blacks/Hispanics but these differences are more pronounced among the middle class. There were significant differences between whites and Asians in the middle class group, but there was little difference between Blacks and Asians in this group.

In the lower class group, there was no difference between the groups. All were evenly divided between those favoring generalism and those favoring specialism.

The trend that is that while overall race does not appear to have an effect, its effect varies within the different socio-economic groups. As was the case with gender, the widest difference is in the middle class group. In the middle class, Asians and Blacks are very similar. In the lower class, the differences between the races disappear.

The middle class group shows differences based on race and gender. What we see is that white middle class students resemble upper class students, while Asian middle class students resemble lower class students. While most Asian students qualify as middle class, due to income and occupation, their outlook is more lower class. The same is true for Blacks and Hispanics. Even if they qualify as middle class, their orientation is still very different from upper

class students. It may be that this difference is not related to class but is related to the mentality of a minority group. Perhaps Asians and Blacks are reluctant to climb the occupational ladder too fast, or perhaps this is a more gradual process than can be observed from this study. However, upper class Asian students are very close to white students in their specialty preferences. Asians provide a clear example of how upper class status can transform ethnic identity into class identity. The borderline between socio-economic statuses are not so clear due to perhaps to the effects of racial/ethnic background.

Table 6c: Ethnic Background and Income.

Income	ETHNIC BACKGROUND			
	White	Black/Hispanic	Asian	Total
Less $30,000	8 9%	17 3%	21 7%	46 7%
$30.000-59,000	28 39.5%	17 31%	24 37%	69 37%
60,000-99,000	39 33%	14 46%	32 42%	85 38%
$100,000-250,000	63 12.5%	9 16%	25 11%	97 13%
Over $250,000	22 6%	3 3%	11 2.5%	36 4%
Total	160 100%	60 100%	113 100%	333 100%

Other (n=19) not included, missing cases=17 Chi Square= 38.106 p<.001

Table 6d: Ethnic Background Social Class Ranking (Those Choosing Spec. Area)

Social Class Ranking	ETHNIC BACKGROUND			
	White	Asian	Black/Hispanic	Total
Upper	63 40%	30 27%	7 12%	100 60%
Middle	62 40%	48 42%	11 19%	121 40%
Lower	31 20%	35 31%	40 69%	106 32%
Total	156 100%	113 100%	58 100%	327 100%

Other not included. Missing cases=18 Chi Square 49.882 p<.001

Table 6e: The Effect of Ethnic Background and Class on Specialty Area

Class/Area of Specialization	Ethnicity			
UPPER	**White**	**Asian**	**Black/Hispanic**	**Total**
Generalist	18 43%	10 48%	3 75%	31 46%
Specialist	24 57%	11 52%	1 25%	36 54%
Total	45 100%	21 100%	4 100%	67 100%
MIDDLE	**White**	**Asian**	**Black/Hispanic**	**Total**
Generalist	25 55%	26 72%	8 73%	59 64%
Specialist	20 45%	10 28%	3 27%	33 36%
Total	45 100%	36 100%	11 100%	92 100%
LOWER	**White**	**Asian**	**Black/Hispanic**	**Total**
Generalist	20 50%	19 50%	22 50%	61 50%
Specialist	20 50%	19 50%	22 50%	61 50%
Total	40 100%	38 100%	44 100%	122 100%

Chi Squares: Upper; 1.595 $p<.50$; Middle 2.817 $p<.50$; Lower 1.286 $p<.70$

MAJOR AND SPECIALTY AREA

Another important question is whether undergraduate major effects specialty area. Science is still the most common major for medical students. As an undergraduate major, science is considered more difficult than the social sciences or the liberal arts. The great majority of medical students are science majors.

Non-science majors, mostly social science and the liberal arts majors, are thought to have a broader humanistic approach. In the effort to recruit more generalist physicians, it was believed that students from the humanities would be more receptive to a broader, more socially inclusive view of medicine. (See Lieu et al. 1989, Koenig 1976) However, the data show differently.

In tables 7a and 7b we see that science majors are positively correlated with generalism, but the correlation is not strong. The majority of science majors prefer generalism, but so do the majority of non-science majors. Non-science majors are more likely to prefer the specialties. The reasons for this may have to do with socio-economic status of the students, as the tables below will show. When the variable social class is added, the relationship between major and area of specialization does not meet an acceptable level of significance, except in the lower class group, where the p level is .10.

Looking at the broad trends between major and social class, we see that non-science majors are concentrated in the upper classes. However, science majors in

the upper class group prefer specialism at a higher rate than do non-science majors. Non-science majors are split almost 50/50 between specialism and generalism. Middle class students who choose to major in a non-science area still prefer generalism by a 2:1 ratio. It appears that the advantage of liberal arts majors being inclined to generalism is lost, because most liberal arts majors are upper class and thus more inclined to specialism.

Science majors are concentrated in the lower and middle classes. (Table 7c) 85% of the lower class group and approximately 75% of the middle class generalists are science majors. 58% of the upper class group are science majors.

Science majors have the highest correlation with lower class status, but non-science majors in this group (although small) prefer specialism by a higher margin (2%) than the upper class group. (Table 7d)

It appears that a science major does not have the same effect in each socio-economic group. (Table 7d) It is likely that lower class students choose science for different reasons than their upper class counterparts. Perhaps major is a function of college attended (elite vs. public), rather than future area of specialization. (See table 7e)

If medical schools continue to recruit non-science majors, under the assumption that these students will be more interested in generalism, they will at the same time be recruiting upper class students who are much more likely to be interested in the specialties. It is widely believed that one's major strongly influences specialty choice. Humanities majors are thought to be more in touch

with the complex social dimensions of medicine and thus more likely to favor generalism. Overall in the sample, students were divided among science majors, social science, humanities and other. Another portion of students listed double majors or sociobiology. This relatively small number of students was classified as science majors.

Major was related to the type of college attended. Students from elite colleges (those with highly competitive admission standards) were less likely to be science majors, whereas those from public colleges were more likely. (Table 7e) Medical students from elite colleges were split almost 50/50 between science and social science and the humanities

Table 7a: Major and Specialty Area (Entire Sample)

Specialty Area	MAJOR		
	Science	Non-Science	Total
Generalists	126 46%	40 41%	166 45%
Specialists	73 27%	34 35%	107 29%
Other	19 7%	1 1%	20 5%
Undecided	54 20%	22 23%	76 20%
Total	272 100%	97 100%	369 100%

Missing cases=4 (1%) Chi Square=7.029 $p<.05$

Table 7b: Major and Specialty Area (Those Choosing Specialty Area)

Specialty Area	MAJOR		
	Science	Non-Science	Total
Generalists	126 63%	40 54%	166 60%
Specialists	73 37%	34 46%	107 40%
Total	199 100%	74 100%	273 100%

Chi Square=1.942 $p<.20$

Table 7c Major and Social Class Rank

Major	Social Class Ranking			
	Upper	Middle	Lower	Total
Science	60 58%	99 74%	94 85%	253 73%
Non-science	44 42%	34 26%	17 15%	95 27%
Total	104 100%	133 100%	111 100%	348 100%

Chi Square=20.038 p<.001

EFFECT OF CLASS AND MAJOR ON SPECIALTY CHOICE

Whites were most evenly split between science and other majors. 53% of whites majored in science, as opposed to 83% of Blacks and Hispanics and 82% of Asians.

Children of physicians were divided exactly 50/50 between science and non-science majors, whereas among non-physician children the rate was 72/28 in favor of science. Children of physicians were also much more likely to attend elite colleges. 2/3 of this group attended an elite college, whereas just over 1/3 of non-physician children attended elite schools. (This includes those who attended elite public schools - 8% of physician children and 3% of non-physician children.)

Table 7d: Class and Major on Specialty Choice

Social Class	MAJOR		
UPPER	**Science**	**Non-Science**	**Total**
Generalism	15 43%	16 48%	35 51%
Specialism	20 57%	17 52%	33 49%
Total	35 100%	33 100%	68 100%
MIDDLE	**Science**	**Non-Science**	**Total**
Generalism	46 55%	18 67%	83 75%
Specialism	37 45%	9 33%	27 25%
Total	83 100%	27 100%	110 100%
LOWER	**Science**	**Non-Science**	**Total**
Generalism	57 75%	6 46%	76 85%
Specialism	19 25%	7 54%	13 15%
Total	76 100%	13 100%	89 100%

Chi Square: Upper Class Group=2.889 $p<.30$. Middle Class Group=.555 $p<.90$
Lower Class Group=4.521 $p<.10$

Table 7e: Major and Type of College Attended

Major	TYPE OF COLLEGE ATTENDED			
	Elite	Public	Private Non-Elite	Total
Science	85 55%	155 95%	28 61%	268 73%
Non-Science	70 45%	9 5%	18 39%	97 27%
Total	155 100%	164 100%	46 100%	365 100%

Missing cases=8 (2%) Chi Square= 70.404 p<.001

Table 7f: Major and Gender

Major	GENDER		
	Men	Women	Total
Science	126 79%	142 70%	268 74%
Non-Science	33 21%	61 30%	94 26%
Total	159 100%	203 100%	362 100%

Missing cases = 11 (3%) Chi Square=4.007 p<.05

COMPETITIVENESS

Is competitiveness a psychological variable, related to specialty preference? If so, is this competitiveness correlated with race, gender, social class, major and type of college attended? Overall, my survey found that medical students are quite competitive. 42% of students surveyed considered themselves above average in competitiveness. Only 17% considered themselves below average in competitiveness. Tables 8a and 8b account for the entire sample and a comparison between generalists and specialists. The comparison between generalists and specialists was significant at the .05 level.

Considering oneself to be above average in competitiveness does not mean one is more likely to favor specialism. Most of the students who consider themselves above average also are interested in generalism. However, those classifying themselves as below average are more likely to prefer generalism.

Table 8a: Competitiveness and Specialty Area

Specialty Area	COMPETITIVENESS			
	Above Average	Average	Below Average	Total
Generalism	60 37%	71 23%	33 53%	164 45%
Specialism	53 33%	40 29%	13 21%	106 29%
Other	12 7%	6 4%	2 3%	20 5%
Undecided	38 23%	23 16%	14 23%	75 21%
Total	163 100%	140 100%	62 100%	365 100%

Missing cases= 8 (2%) Chi Square=6.490 p<.50

Table 8b: Competitiveness and Specialty Area (Those choosing area)

Specialty Area	COMPETITIVENESS			
	Above Average	Average	Below Average	Total
Generalism	60 53%	71 64%	33 72%	164 61%
Specialism	53 47%	40 36%	13 28%	106 39%
Total	113 100%	111 100%	46 100%	270 100%

Chi Square=5.585 p<.05

Table 8c: Interaction Effect -- Competitiveness and Social Class

Competitiveness	SOCIAL CLASS			
	Upper	**Middle**	**Lower**	**Total**
Above Average	32 47%	39 36%	39 44%	110 100%
Average	28 41%	41 38%	35 40%	104 100%
Below Average	8 12%	27 25%	14 16%	49 100%
Total	68 100%	107 100%	88 100%	263 100%

Chi Square 1.643 p<.80

COMPETITIVENESS AND CLASS

The results of this test were not significant. ($p<.80$). We can infer that there is no significant relationship between social class and competitiveness. Lower class students are as competitive as upper class students. The trend from these data show that the middle class group is the least competitive of the three groups. 47% of upper class students classified themselves as more competitive versus 44% of lower class students and 36% of middle class students.

Middle class students are more than twice as likely to consider themselves below average in competitiveness than upper class students and one third more likely than lower class students.

Medical students from the different social classes are most alike in the percentage considering themselves average, with roughly 40% giving themselves that rating. The differences are at the margins - upper and lower class are more likely to be more competitive and middle class students are more likely to be less competitive.

The variation in the class categories was generally close to the overall distribution in the total column. However, the middle class group column has the widest difference from the total column. (Table 8c) This trend is examined in more detail in table 8d.

Table 8d shows that only in the middle class group do we see a significance level of less than .10. In terms of general trends we see that only in the upper class

is there a majority of above average competitors who also plan to become specialists. In the middle and lower class groups, the majority of above average competitors are future generalists. There is little difference (1%) in specialty choice among above average and average competitors in the upper class group, while in the middle and lower class groups, these differences are large: 22% difference for the middle class and 24% for the lower class group, and in the opposite direction.

Among the below average competitors, the upper and lower groups both tend strongly towards a choice of generalist among the least competitive. 86% of the least competitive lower class students consider themselves future generalists and approximately 63% of the upper class group plan to be generalists. In the middle class group, however, a majority (52%) of the below average competitors plans to become specialists. Average competitiveness is associated with specialism in both the upper and lower class groups. However, average competitiveness is overwhelmingly correlated with generalism (73%) among the middle class group.

Table 8d: Effect of Competitiveness and Class on Specialty Choice

Class/Area of Specialization	COMPETITIVENESS			
UPPER	**Above Average**	**Average**	**Below Average**	**Total**
Generalist	14 44%	12 43%	5 62.5%	31 46%
Specialist	18 56%	16 57%	3 37.5%	37 54%
Total	32 100%	28 100%	8 100%	68 100%
MIDDLE	**Above Average**	**Average**	**Below Average**	**Total**
Generalist	20 51%	30 73%	13 48%	63 59%
Specialist	19 49%	11 27%	14 52%	44 41%
Total	39 100%	41 100%	27 100%	107 100%
LOWER	**Above Average**	**Average**	**Below Average**	**Total**
Generalist	25 64%	25 40%	12 86%	62 ?
Specialist	14 36%	10 60%	2 4%	26 30%
Total	39 100%	35 100%	14 100%	88 100%

Chi Square: Upper 1.050 p<.60 Middle 4.776 p<.10 Lower 2.338 p<.40

COMPETITIVENESS AND ETHNICITY

There are differences in degree of competitiveness by race. 50% of whites classify themselves as more competitive, as opposed to 44% of Asians, 40% of Hispanics and 34% of Blacks. (This figure is the combination of the first two

rows in table 8e). The relationship between ethnicity and competitiveness was not found to be highly significant.

Table 8e: Competitiveness and Ethnic Background

Competitiveness	ETHNIC BACKGROUND			
	White	Black/Hispanic	Asian	Total
Much more	15 9%	2 3%	8 7%	25 7%
Somewhat more	66 39.5%	19 31%	43 37%	128 37%
About Average	55 33%	28 46%	49 42%	132 38%
Somewhat less	21 12.5%	10 16%	13 11%	44 13%
Much less	10 6%	2 3%	3 2.5%	15 4%
Total	167 100%	61 100%	116 100%	344 100%

Those answering "other" to racial ethnic category not included n=20.(5%)
Missing cases=9 (2%) Chi Square 8.385 p<.50

COMPETITIVENESS AND GENDER

52% of men classified themselves as more competitive, while 38% of the women did. Women were more likely to classify themselves as average or below average. 42% of the women ranked themselves as average and 19% chose less competitive. 34% of the men ranked themselves as average and 15% as less competitive.

Table 8f: **Gender and Competitiveness**

Degree of Competitiveness	GENDER		
	Men	Women	Total
Much More	12 8%	14 7%	26 8%
Somewhat More	68 44%	64 32%	132 40%
About Average	52 33%	86 42%	138 42%
Somewhat Less	18 12%	28 14%	46 14%
Much Less	5 3%	11 5%	16 5%
Total	155 100%	203 100%	328 100%

(Columns may not add to 100% due to rounding) Chi Square =15.53 p<.01

MAJOR AND COMPETITIVENESS

This survey found that science majors are less competitive than their counterparts from the social sciences and the liberal arts. 30% of science majors classified themselves as more competitive, as opposed to 54% of social science majors and 45% of humanities majors. This can be explained through the data in the tables above which show that non-science majors are much more likely to be men, from elite schools, and of higher socio-economic status. This finding may be explained by the correlation between major and social class (See table 8f)

Table 8g: **Major and Competitiveness**

Degree of Competitiveness	**MAJOR**		
	Science	**Non-Science**	**Total**
Much More	20 7%	7 7%	27 7%
Somewhat More	95 35%	42 44%	137 37%
About Average	110 41%	29 31%	139 38%
Somewhat Less	33 12%	14 15%	47 13%
Much Less	13 5%	3 3%	16 4%
Total	271 100%	95 100%	366 100%

Missing cases =7 (2%) Chi Square=4.242 p<.30

VALUES

A series of questions was designed to measure students' attitudes on the importance of income, prestige, technical skill and research, in choosing a specialty (or a medical career if they have not chosen a specialty.) I found that there are distinct differences between the class groupings of medical students regarding values. However, within the specialties and classes their values were found to be quite homogeneous.

Significant differences were found in the relationship between the importance of income and prestige in specialty choice. These two variables will be treated in detail

INCOME

Tables 9a 9b 9c 9d 9e deal with the importance students place on the value of income in choosing their specialty. Overall, income is important for medical students. Of all students surveyed, 61% ranked income as very important or important in their choice of a specialty or a medical career. The relationship between the value of income and specialty choice was significant at the .01 level. The data show that income is more important for those who prefer specialism. Generalists express less interest in income as a factor in their career choice. Among those who prefer generalism, 55% ranked income as very important or important, compared to 74% of those who favor specialties.

More than half of those who rank income as important also expect to become generalists; however, almost three quarters of those who do not rank income highly expect to become generalists. Overall, 61% of the sample preferred generalism while only 54% of the overall generalist sample ranked income highly. Likewise with specialists, the importance of income is significant, since it is more than the overall percent.

This survey did not find a significant relationship between the value of income and social class. (Table 9c) The data show that the upper class are the least likely to cite income as an important reason for specialty choice. The lower class see income as most important. This raises the interesting question of why students who are interested in income still choose generalism. This brings us back to the conclusion that there is different socialization, and different expectation of what constitutes high income, between the classes.

When we test the combined effect of specialty area and social class on the importance of income we find that there is no statistically significant relationship in the lower class group. Among the lower class group, the importance of income has no effect on the choice to become a generalist or a specialist. However, among the upper and middle class groups, the majority (62.5%) of those who feel income is important prefer specialism. The variable is split roughly 60/40 in favor of specialism.

In the middle class group, a slight majority of those who feel income is important favor generalism. However, among those who feel income is not important over 80% prefer generalism.

The relationship between the importance of income and social class is proportionate through the classes. Of those ranking income as important, 25% came from the upper class group, 39% from the middle class group and 36% from the lower class group. This is proportional to the overall sample, which was 26% upper class, 39% middle class and 35% lower class. Likewise, the proportion of those who saw income as somewhat/not important corresponded with the sample.

Interest in income correlates with interest in generalism across the classes. The higher one's social class, the less likely their classification of income as important. Upper class generalists are least interested in income, while lower class generalists are most interested. Conversely, upper class specialists are most interested income, while lower class specialists are least interested. Among those who do not rank income as important, the highest percentage came from middle class generalists, followed by lower class generalists and then upper class generalists.

The upper class group had the smallest gap between generalists and specialists, for those who did not rate income as important. This group was more than twice as likely to be specialists than the middle class group and a quarter more likely than the lower class group.

Overall, we see the different effects that income has on the different classes. For the upper class, those who value income are most likely to be specialists whereas for the middle class, valuing income produces a slight majority of generalists. For the lower class, valuing income also produces mainly generalists. The inverse of this is true for those who do not value income in their career/specialty choice. Across all classes, not valuing income is likely to produce a majority of generalists. However, the percentage of generalists is highest in the middle class group and lowest in the upper class group. The results are shown in Table 9f.

Table 9a: Importance of Income and Specialty Area (Entire Sample)

Specialty Area	IMPORTANCE OF INCOME		
	Important	Somewhat/Not	Total
Generalists	92 41%	74 51%	166 45%
Specialists	79 35%	28 19%	107 29%
Other	4 2%	16 11%	20 5%
Undecided	48 20%	28 19%	76 21%
Total	223 100%	146 100%	369 100%

Missing cases=4 (1%) Chi Square=28.347 p<.01

Table 9b: Importance of Income and Specialty Area (Those Choosing Spec. Area)

Specialty Area	IMPORTANCE OF INCOME		
	Important	Somewhat/Not	Total
Generalists	92 54%	74 73%	166 61%
Specialists	79 46%	28 27%	107 39%
Total	171 100%	102 100%	273 100%

Chi Square=9.423 p<.01

Table 9c: Importance of Income and Social Class

Importance of Income	Social Class Ranking			
	Upper	Middle	Lower	Total
Important	58 56%	80 60%	72 65%	210 61%
Not Important	45 44%	53 40%	39 35%	137 39%
Total	103 100%	133 100%	111 100%	347 100%

Chi Square=1.648 p<.50

Table 9d: Effect of Class and Area of Specialization on the Importance of Income (Those choosing Specialty Area)

Class/Area of Specialization	IMPORTANCE OF INCOME		
UPPER	**Important**	**Somewhat/Not**	**Total**
Generalist	15 37.5%	16 59%	31 46%
Specialist	25 62.5%	11 41%	36 54%
Total	40 100%	27 100%	67 100%
MIDDLE	**Important**	**Somewhat/Not**	**Total**
Generalist	33 53%	31 82%	64 54%
Specialist	29 47%	7 18%	36 36%
Total	62 100%	38 100%	100 100%
LOWER	**Important**	**Somewhat/Not**	**Total**
Generalist	41 71%	22 71%	63 71%
Specialist	17 29%	9 29%	26 29%
Total	58 100%	31 100%	89 100%
GRAND TOTAL	160 100%	96 100%	256 100%

Chi Square: Upper: 3.070 $p<.10$ Middle: 8.220 $p<.01$, Lower .001 $p<.95$

PRESTIGE

When it comes to prestige, the results are similar to the effect of income. Overall, the majority of students surveyed did not think prestige was important. 56% ranked prestige as somewhat important or not important, compared to 44% who ranked it as important or very important. Among those who believe they have chosen their area, 40% of generalists rank prestige as important compared to 57% of specialists. Specialists are almost twice as likely to rank prestige as very important (19% vs. 10% for generalists).

We also see that the importance a student places on prestige does not increase in proportion to one's socio-economic rank. (table 10c)The upper class group is the least likely to list prestige as important. The lower class group is the least represented among those who list prestige as not important. We also see that the upper class are underrepresented among those who rank prestige important (25% vs. 30% of the total sample) whereas the lower class are overrepresented (37% vs. 32% of the total sample). The middle class are exactly proportional.

When we control for class we see that, unlike the case with income, a clear linear relationship exists between social class and the value a student places on prestige. As we move higher in the class structure, the value the student places on prestige decreases. Overall, counting those who are undecided and have chosen non-practicing careers, 36% of the upper group, 43% of the middle group and 64%

of the lower group rank prestige as important. This relationship was significant at the .10 level.

Narrowing our analysis to those who have chosen an area of specialization, the relationship remains linear for the generalists across the classes and the significance level improves to .01. In the upper class group, only 30% of the generalists rank prestige as an important factor in their choice. Just over one third said that prestige was not important. (The category of not important is combined with the category of somewhat important in the table above.) 40% of the middle class group ranked prestige as important, while 22% said it was not important and 46% of the lower class group ranked prestige as important, while only 13% said it was not important. Again as with income, the gap between generalists and specialists regarding prestige is narrowest among the lowest group. The gap between specialists and generalists in the upper and middle group is almost identical.

The importance of prestige effects the social classes differently. Specialists in the upper class see prestige as important. Two thirds of this group view it as important compared to just under half of the middle class group, and one third of the lower class group. The importance of prestige increases among generalists as we move through the class categories. 32% of the upper class generalists see prestige as important versus 52% of the middle group and 67% of the lower class group.

For those who said prestige was not important in the upper class group, 56% were generalists whereas three quarters of the middle and lower class students who did not see prestige as important were interested in generalism.

As in the case with income, there is no significant relationship between prestige and specialty choice area among the lower class group. Whereas the upper and middle group are significant at the .05 and .02 levels respectively.

Among those who favor specialism, middle class and lower class students rate prestige more highly than upper class students. However, once again lower class attitudes are closer to upper class attitudes than they are to middle class ones. The middle class specialists rate prestige the highest at 63%, compared to 54% for the lower group, and 52% for the upper group.

Table 10a: Importance of Prestige and Area of Specialization (Entire Sample)

Area of Specialization	IMPORTANCE OF PRESTIGE		
	Important	Somewhat/Not	Total
Generalist	67 40%	98 49%	165 45%
Specialist	61 37%	46 23%	107 29%
Other	16 10%	4 2%	20 5%
Undecided	23 14%	53 3%	76 21%
Total	167 100%	201 100%	368 100%

Missing Cases=5 (1%) Chi Square 10.992 p<.02

Table 10b: Importance of Prestige and Area of Specialization (Those Choosing Specialty Area)

Area of Specialization	IMPORTANCE OF PRESTIGE		
	Important	Somewhat/Not	Total
Generalist	67 52%	98 68%	165 61%
Specialist	61 48%	46 32%	107 39%
Total	128 100%	144 100%	272 100%

Chi Square=7.010 p<.01

Table 10c: Importance of Prestige and Social Class

Social Class	IMPORTANCE OF PRESTIGE		
	Important	Somewhat/Not	Total
Upper	38 25%	65 33.5%	103 30%
Middle	58 38%	74 38%	132 38%
Lower	56 37%	55 28%	111 32%
Total	152 100%	194 100%	346 100%

Chi Square=3.987 p<.20

Table 10d: Effect of Social Class and Area of Specialization (Those Choosing Specialty Area)

Area of Specialization	VALUE OF PRESTIGE		
UPPER	**Important**	**Somewhat/Not**	**Total**
Generalist	9 32%	22 56%	31 46%
Specialist	19 68%	17 44%	36 54%
Total	28 24%	39 28%	67 26%
MIDDLE	**Generalist**	**Specialist**	**Total**
Generalist	25 52%	38 75%	63 64%
Specialist	23 48%	13 25%	36 36%
Total	48 40%	51 37.5%	99 39%
LOWER	**Generalist**	**Specialist**	**Total**
Generalist	29 67%	34 74%	63 71%
Specialist	14 33%	12 26%	26 29%
Total	43 36%	46 34%	89 35%
GRAND TOTAL	119 100%	136 100%	255 100%

Chi Square:Upper= 3.861 p=.05 Middle= 5.374 p<.02 Lower= .450 p<.80`

APPENDIX: EARLY CHOICE: STUDENTS WHO HAVE CHOSEN A SPECIALTY

21% of the sample have chosen a particular specialty. The majority of early choosers opted for generalist specialties, but the majority of students in the sample were generalists. Those who decide early are more likely to be specialists. 21% of generalists have identified a field they wish to practice in, while 33% of specialists know their specific specialty. Early choosers are slightly more likely to be women (23% vs. 19%) and non-science majors (23% vs. 20% for science majors). Blacks and Hispanics are most likely to have chosen. 32% of them have made an early decision, compared to 25% of Whites and 12% of Asians. Upper class students are slightly more likely than lower class students to have chosen (23% vs. 22%). Middle class students are least likely to have chosen (18%).

Table 11: Effect of Social Class and Specialty Choice

Specialty Choice	SOCIAL CLASS			
	Upper	**Middle**	**Lower**	**Total**
Chosen	24 23%	24 18%	25 22%	73 21%
Not Yet Chosen	80 77%	109 82%	85 78%	274 79%
Total	104 100%	133 100%	110 100%	347 100%

Table 12: Ethnic Background and Specialty Choice

Specialty Choice	ETHNIC BACKGROUND			
	White	**Black/Hispanic**	**Asian**	**Total**
Chosen	42 23%	20 32%	14 12%	76 22%
Not Yet Chosen	129 ?%	42 %	101 %	272 %
Total	171 100%	62 100%	115 100%	348 100%

Those answering "other" to racial ethnic background not included n=20 Missing cases=5

A NOTE ON SCHOOLS.

The breakdown is more startling when we look at the schools attended. From the tables below we see that high social class indicators correlate with attendance at a private medical school. We also see that income is not as important as education for attending a private medical school . 60% of the students from the lower class group attend public medical school, but the percentage moves closer to 50% in the next highest income categories. Poorer students are more likely but not highly likely to attend a public medical school, but middle income students almost as likely to attend either public or private schools in this sample. Close to nine out of ten (86%) of students from households making more than $100,000 go to private schools. The implication of this may be that private schools have become very effective in recruiting and admitting students from lower and middle class families. These schools may be relying on this group to be their future generalists. However, public schools with generalist missions, are receiving a sizable portion of relatively high income students. middle class students. year are almost the more likely the child will go to a private medical school, where the production of generalist physicians is much lower.

Table 13: Social Class components and type of medical school attended

Medical School Attending	FATHER'S EDUCATION					
	<12 years	12 years	13-16 years	16 years	>16 years	Total
Private	8 36%	11 42%	19 54%	44 58%	160 77%	164 45%
Public	14 64%	15 58%	16 46%	32 42%	60 23%	105 55%
Total	22 100%	26 100%	35 100%	76 100%	208 100%	367 100%

Missing cases=6 (1.6%)

Medical School Attending	PARENT'S INCOME					
	<$30,000	$30,000 - $59,000	$60,000 - $99,000	$100,000 - $250,000	>$250,000	Total
Private	19 40%	40 53%	51 56%	87 84%	34 92%	151 42.5%
Public	29 60%	36 47%	40 44%	16 16%	3 8%	124 57.5%
Total	48 100%	76 100%	91 100%	103 100%	37 100%	355 100%

	SOCIAL CLASS RANKING			
	Upper	Middle	Lower	Total
Private	93 89%	88 66%	47 43%	164 45%
Public	12 11%	45 34%	63 57%	105 29%
Other	105 5%	133 6.5%	110 5%	348 5%

Chapter 4: Conclusion.

The variables tested in the previous chapter represent only a sample of all the tests that were done. Many of the tables in chapter do not reveal much direct insight into what predisposes a student towards general medicine. It is important to show which variables have no relation to specialty preference, and to contrast these findings with the relationship between social class indicators and specialty preference.

The attitudes of first and second year medical students towards generalism are generally favorable. However, the major finding of this study is that there are distinct differences between students based on social class background. Students from upper class households are least likely to indicate a preference for generalism. Students from lower class households have the highest preference for generalism. Those from middle class households fall in between the two.

Social class has proven to be a powerful indicator of specialty preference. Income is the strongest predictor, partly because it represents the accumulated effect of occupation and education. Occupation is a strong indicator as well. Education is not as powerful a predictor but if analyzed in broad terms, it too is correlated with who favors generalism.

Overall, when the components of class are combined into an index, the relationship between class and specialty preference is quite clear. Generalism is most favored by the lower class and is least favored by the upper class.

It has also been found that gender influences specialty preference. Women are more likely to prefer generalism overall, and remain more favorable to generalism when the other independent variables are controlled.

Race and ethnicity is correlated with specialty choice but not as strongly as is the case with socio-economic indicators or gender. Black and Hispanic students are more likely to indicate a preference for generalism than Whites or Asians. Whites are the least likely to favor generalism. However, ethnic minorities are not evenly distributed through the socio-economic categories, so this makes comparisons difficult. The racial/ethnic groups were most evenly divided in the middle class group, which was comprised on 38% Asians, 35% whites and 19% Blacks/Hispanics. In this group, the effect of race is most apparent.

Undergraduate major did not prove to be a decisive factor in who is favorable to generalism. Overall, science majors are more likely to be generalists than non-science majors. Non-science majors are more likely to be upper class and more likely to have attended an elite college. Undergraduate major has different significance for students of different socio-economic backgrounds. This reflects the different paths to medical school and the different socialization patterns.

Competition does not directly affect who favors generalism. Overall, those who see themselves as less competitive are more likely to favor generalism. However, most medical students consider themselves highly competitive, and among the highly competitive, generalism is more likely to be preferred than specialism. Degree of competitiveness was not found to be related to social class.

CONTROLLING FOR CLASS.

The variables of race/ethnicity, major, and competitiveness are not conclusively linked to a preference for generalism. However the relationship between these variables becomes clearer when we control for social class.

In each social class grouping, women prefer generalism at higher rates than do men. Among both men and women, the lowest preference for generalism is among the upper class. Among men and women, the middle and lower class prefer generalism in almost identical percentages. Gender has different effects within each class grouping. In the social class group with the strongest generalist orientation, the lower class group, there is the narrowest margin between men and women. The widest margin between men and women is in the middle class group.

Social class has less of an effect on women than it does on men. With men, the preference for generalism increases as one moves from the upper to the lower class groups. However, for women, there is very little difference between those from the middle class group and those from the lower class group in their preference for generalism. Preference for generalism peaks at 75% for women in the middle class group and does not increase in the lower class group. There is a higher floor for women, in the sense that middle class women are mostly identical to lower class women in their specialty preference. For women, there really is no "middle" group regarding specialty choice. However, for men there is a middle group, with a different perspective, poised between the upper and lower class.

Race and ethnicity also does not have the same effect in each socio-economic group. As was the case with gender, the widest difference is in the middle class group. In the middle class group, Asians and Blacks are very similar. In the lower class group, differences between the races disappear altogether. The middle class group is the only group where race/ethnicity produces a visible difference in orientations. We also see a "class creep". White middle class students resemble upper class students, while Asian

middle class students resemble lower class students in their specialty preferences. While most Asian students qualify as middle class by income and occupation, their outlook is more lower class in terms of specialty preference. The same is true for Blacks and Hispanics. Even if they qualify as middle class, their orientation is still very different from upper class students. When we control for race/ethnicity, we find that a true "middle class" group, that is, one that has a distinct position between upper and lower class, does not exist.

If we control for school attended, we see that the effects of race are minimized in the survey. The majority of Asians that favor generalism come from the school with the generalist mission. In this school, 90% of the Asians expressed an interest in generalism. In the two other schools surveyed, the majority of Asians preferred specialties. Asians in the schools without a generalist mission preferred specialties 69% to 31%. Blacks and Hispanics in the schools without a generalist mission were split 50/50 between generalism and specialism.

In regard to undergraduate major, we also see that specialty preference varies by class. Upper class science majors are more likely to specialize, while lower class science majors are the most likely to prefer generalism. If undergraduate major were a force, it should effect all classes the same way. It does not. Overall, non-science majors are more likely to be generalists except in the case of the lower class. However, very few lower class students are non-science majors.

It must be considered that the choice of a major is more restricted for lower class students, since they are not as likely to have the advantage of being from an elite school. Choice of major is also correlated with the type of college attended. Students from elite

schools are far more likely to major in a non-scientific area. For many poor students, an intense scientific preparation is considered necessary or is even structured into the curriculum. Among upper and middle class students, choosing a non-science major may reflect a genuine preference for a more socially-based style of medicine. Among lower class students, this humanitarian ethic may be repressed during their long scientific training.

While competitiveness is correlated with a preference for specialism, It was also found that competitiveness functions independently of social class. It is the lower class group that is the most competitive and the middle class group that is the least competitive. Again, it is the middle class that makes up the majority of the students who classify themselves as average or below average in competitiveness. With both gender and competitiveness the correlation with specialty preference can be explained by the high proportion of middle and lower class students who are both women and less competitive. The highest proportion of highly competitive students comes from the lower class group. It is possible that this group will have a high rate of defection away from general medicine as they are further exposed to the hierarchy of medicine and adjust their ambitions.

The analysis of competitiveness as well as the variable of the importance of income and prestige on specialty choice show that social class indicators are not synonymous with personal characteristics. Social class cannot be reduced to more simple variables such as race, major, competitiveness, the value of income or prestige.

Interest in income is relative to one's social class and perceived specialty area. The inconsistencies of the choices suggest that these choices are based on a variety of

personal factors rather than primarily on income. Upper class students interested in income are more likely to choose specialism, but lower class students interested in income still express an interest in generalism.

The implications of this finding can be interpreted in two ways. First, the upper class students may have a better understanding of how the status system of medicine works. Therefore, it is possible that as lower class students learn more about which physicians make the most income, they are likely to practice in those fields and abandon generalism. The second possibility is that lower class students are interested in income, but do not have the necessary background to fully understand the implications that a generalist career would have on their income relative to other specialties. By their standards a primary care physician qualifies as a high income position.
Of course, physicians are not in the field primarily for income, as admission committees do not favor this type of applicant. But for those who do not express interest in income, the choices vary by class. Upper class students who do not express interest in income favor generalism, while lower class students who do not express interest in income favor specialism.

The effect of prestige may also explain why those who are not highly interested in income in the upper class pursue higher income specialties., and why those from the lower class group who are very interested in income pursue lower income generalist fields. The lesser importance of income among the upper class could be explained by this group substituting prestige for income. However, the data show the opposite. Just as in the case with income, lower class students are more interested in prestige than their upper

and middle class counterparts. Prestige does not substitute for income, rather the two variables work together.

Among the class groupings, the importance of prestige increases as one moves down from upper class to lower class. Half of the lower class students categorized prestige as very important or important, whereas only 36% of the upper class students did so. There was very little difference in the degree of importance placed on prestige. Just over 10% of each group listed prestige as very important. This reinforces the idea of homogeneity of medical students and the efforts of admission committees to select students with broad humanitarian interests. It is also possible that upper class students who are interested in high prestige careers have more opportunity than lower class students to pursue careers in business, law, finance or family-owned businesses. Lower class students have less opportunity for choice in a prestigious career, and the meritocratic nature of medicine attracts more students from this group who may be interested in the prestige part of medicine.

This is also confirmed when we look at the importance of prestige within ethnic groups. White place the least emphasis on prestige at 39%. Almost half (48%) of Blacks and Hispanics rate prestige as important or very important, and 69% of Asians rate prestige as important or very important. This strengthens the theory that while class influences attitudes towards general medicine, within the middle and lower classes these attitudes are also effected by such factors as gender and ethnicity. The fact that Blacks, Hispanics, and Asians are more interested in prestige than whites is probably due to the fact that collectively, these ethnic groups are not accorded as much prestige as whites and

therefore they are more conscious of prestige in their career choices. Also, these groups are less represented in other high prestige careers.

AREAS FOR FUTURE RESEARCH:

This study is a first step in addressing the overlooked connection between the social class of the medical students and their eventual area of specialization. Time and further studies will help to determine whether these findings are particular to medical students from the New York area. It also remains to be seen whether the influence of social class on specialty choice is a result of the spirit of the era. Medical school applications have fallen recently as opportunities abound in fields such as business, law and technology. Perhaps, as these sectors shrink medicine may draw in students more interested in income and prestige than in than in a career in general medicine.

The survey found that specialty choice need not be understood mainly as a personality issue. Personality is definitely a factor, but personality can also largely be understood as class-based. Careful recruiting is used to evaluate a student's academic background and his or her personal character to find the best possible future physicians. This recruitment can be improved by considering the effects of social class described above. Further research needs to be done to see how far students go in carrying out their preferences. Undoubtedly these perceptions and attitudes change over the course of their extended medical education. For example, the preference for income may clash with the lower income of a generalist position. It may be that a lower class student has a different yardstick for measuring high income. $100,000 a year may seem to be high right now, but when one learns that one can double or triple that income through specialization, the

importance of income may overpower other factors to compel a student to pursue a specialty.

We also need to know whether and to what extent value shifts take place within the medical school. It is apparent that most students change their minds regarding area of specialization, with most students defecting from generalism to specialism rather than vice versa. Which class is the most likely to defect and can these defections be attributed to class or to other variables? Also, many students may choose a subspecialty within generalist medicine, particularly an internal medicine subspecialty. Technically these doctors may be classified as a generalist, a specialist, or both. In addition to consistent application of the label generalist/ specialist, future research into this problem requires a longitudinal approach that is not feasible at this time.

The data show that middle class students are probably best suited for careers in generalism. Further research, including in-depth interviews need to be done to determine how these attitudes are constructed. This will lead to a better understanding of the variables that went into constructing the index of social class used for this study. For example, how important is income relative to occupation? Further testing must be done to test the self-direction theory of class consciousness outlined by Miller and Swanson (1958) and Hout (1994). A larger data base could also make more significant comparisons between specific occupations rather than to group them under broad categories. For example, this study found a large sample of students with parents who were physicians, teachers and nurses. Students with a teacher parent had attitudes similar to upper class students, while those with a nurse parent had very strong correlations with generalism.

This study was based on students in American medical schools and did not consider the influences of foreign cultures upon individual students. A large contingent of medical students who are educated abroad join the medical education pipeline during the residency years. Determining the class background of this group and their attitudes towards generalism and specialism would be a valuable follow-up to this study. These foreign medical graduates make up a large percentage of those providing primary care, especially in urban public hospitals.

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AM: Academic Medicine
JAMA Journal of the American Medical Asociation
JME Journal of Medical Education (now titled Academic Medicine)
NEJM New England Journal of Medicine

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