

**Editors' Note:** *VOICES* is a project of the journal to provide personal, historical and scientific perspectives on the field of epidemiology, as seen through the eyes of the field's most senior and accomplished practitioners. Subjects are selected by the Editors. Readers are welcome to nominate candidates for *VOICES*.

## A Conversation With Mervyn Susser

*Nigel Paneth*

**M**ervyn Wilfred Susser was born September 26, 1921, in Johannesburg, South Africa. A 1950 graduate in medicine from the University of Witwatersrand, he spent several years in community clinical work in the Alexandra Health Centre before emigrating to England in 1956. In 1957, he was appointed Lecturer in social and preventive medicine at the University of Manchester, and, in 1964, Reader and Head. In 1966, he was appointed Chair of the Division of Epidemiology at Columbia University, where he founded the PhD program in epidemiology. In 1978, he stepped down from the chair to found the Gertrude H. Sergievsky Center, a Columbia research unit focused on neurologic, psychiatric, and developmental epidemiology. He also served as Editor of the *American Journal of Public Health* from 1992 to 1998. Dr. Susser's research has addressed problems in mental health, child health, and the long-term consequences of exposures during pregnancy. He is also known for his work on the philosophy and goals of epidemiology, and for his active involvement in human rights. He is a member of the Institute of Medicine and the National Academy of Sciences, and is the author of 6 books. Special recognitions include the John Snow Award, presented in 1994 by the American Public Health Association.

### INTERVIEW


*NP: Can you describe how your own path brought you to epidemiology?*

**MS:** Before World War II, I was intent on doing a degree in the humanities. In 1940, after 18 months at the university, I volunteered for the military and was out of the country on active service for most of 5 years. The awful devastation of the Hitler regimen and the war sharpened my social conscience, one element that led me postwar into medicine. Zena [Stein, his wife] underwent a very similar transition, and made firm my decision. Epidemiology was not a subject in the curriculum, except for 4 or 5 infectious disease lectures. In the second year of medical school, Zena and I learned of Sidney Kark, and then from him about social medicine. He brought to the practice of medicine an innovative social and epidemiologic approach to community health, now known as community-oriented primary care. A fount of wisdom, he made us conscious of the need for examining what was on the ground where one worked, which involved systematic data collection, evaluation, and calculated response. Our medical curriculum addressed the conditions apparent in the segregated white fraction of the population. What happened in

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 Mervyn Susser's curriculum vitae is available with the online version of the Journal at [www.epidem.com](http://www.epidem.com).

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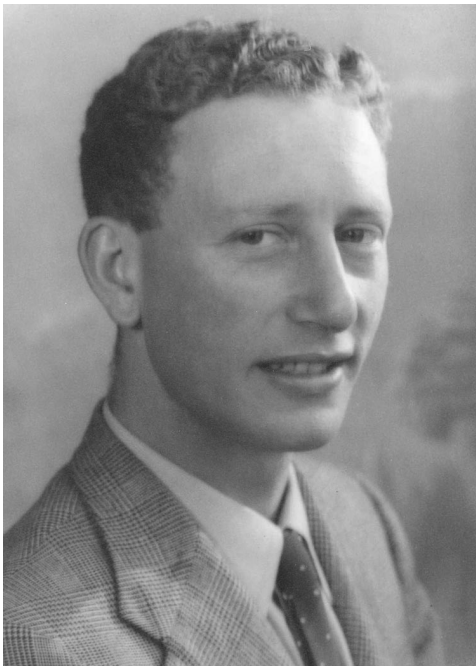
the black majority population was foreign land. We learned about that independently out of hours in outpatient clinics and wards of black hospitals.

*NP: At that stage, you were undifferentiated within social medicine; when did you begin to identify yourself as an epidemiologist?*

MS: Much later. After internship, Zena and I and another couple together took over the Alexandra Health Center and University Clinic which served an estimated 80,000 Africans on the outskirts of Johannesburg. We did community sample surveys of morbidity and other data collection enterprises, some of which we later published. However, it was not yet epidemiology to us. We met epidemiology as a discipline only in 1956 when, bruised early in the antiapartheid struggle, we went into exile in England. After a year in a London chest and tuberculosis clinic, I was lucky to be appointed Lecturer in Social and Preventive Medicine at Manchester University. Epidemiology was then at the heart of academic social medicine and a locus for epidemiologists. However, it was broader than that, and I did not focus on epidemiology until I accepted the Chair at Columbia in 1966.

*NP: What is the biggest difference between epidemiology as it was practiced when you started your career and as it is practiced now?*

MS: British epidemiology at that time was already concentrated on chronic disease, not yet the case in the United States where the focus was still strongly on infectious disease. Through the late 1950s, chronic disease epidemiology was still evolving a basic understanding and then,



Mervyn Susser, Cape Town, South Africa, 1946.

through the 1960s, increasing methodologic skill and sophistication. By the late 1970s, methods had become a dominant theme. Over the next decades, academic epidemiology, led by Miettinen, Rothman, and Greenland, concentrated more intensely on methods and technique.

*NP: Do you see that as problematic?*

MS: Essential and important, but taking your methods and looking for a problem is not the way to go about making a serious contribution to health in populations, which is what we as epidemiologists should be about.

*NP: Who would you single out as having most strongly influenced your career?*

MS: First was Sidney Kark. Next, Jerry Morris; I met Jerry in London not long after we arrived. His 1957 book, *Uses of Epidemiology*,<sup>1</sup> was a beacon along the road to epidemiology. Later on, in Manchester, I did learn too about public health from Fraser Brockington, Professor and Chair of the Department. He took a large risk in appointing me, an unknown. He was not an epidemiologist, but had been a major public health officer in Yorkshire. He taught me to see public health as a discipline in itself, to formulate public health goals, and to make these a central focus of what epidemiology was for.

Bill Watson, an anthropologist and Africanist with whom I wrote my first book (*Sociology in Medicine*<sup>2</sup>), was crucial to my fuller understanding of the social sciences. Family and community medicine were much written about in general journals, but without any concept of what either family or community might be. That was my motivation for writing that book. Later influences were the work and writings of Richard Doll and Bradford Hill, Brian MacMahon's *Epidemiologic Methods*<sup>3</sup> and, in the late 1960s, sociologic methodologists, especially Herbert Hyman's teachings and text on survey research.

*NP: You have mentioned collaboration, which is essential to successful epidemiologic studies. What have you found to be the most important ingredients in a good collaboration and with whom have you had your best collaborations?*

MS: There is only one straightforward answer to that, Zena Stein.

*NP: You have to marry your collaborators?*

MS: It is the best way. We first worked together as medical students after the war. She, too, had been in the armed forces, and we had known each other as kids during my school years in Durban. Successful collaboration requires common goals. We all have different personalities that must be able to mesh. Zena and I quarrel and fight over our research, but we reach resolution in the battles and both learn more. A sense of intellectual equality and free exchange is critical.

Collaboration with Watson was quite different, intense interaction and mutual learning from each other, wonderful. He was a wild working-class Glaswegian with a war history,

as I too had, and he could talk endlessly and brilliantly. He had been a champion boxer, a journalist, and a good hard drinker, too, but also a skilled writer full of ideas. Through rough times and smooth, we stayed friends. We came from quite different angles, but we had a point of intersection and a common social perspective. I should mention, too, later collaborations from which I learned much. These were broader and less concentrated, with several colleagues in the Sergievsky Center, not least, yourself in neonatology, Allen Hauser in epilepsy, Ruth Otman and Dorothy Warburton in genetics, Bruce Levin and Pat ShROUT in statistics, an incomplete list.

*NP: Whom would you regard as the most important epidemiologist during your epidemiologic lifetime and on what basis?*

MS: The epidemiologist who has surely most often hit the bull's eye is unquestionably Richard Doll, my friend, I am proud to say. He has a sharp, clear mind and an English way of reducing things to their simplest elements. With him, of course, one must place his teacher Bradford Hill. Equally important in another way, with his absolutely path-breaking book, is Jerry Morris. Nor can Tom McKeown be ignored as a thinker and as a founder of reproductive epidemiology. Later, important figures for me are Brian MacMahon and Abe Lilienfeld. Their contributions were different, and one is as important as the other. George Comstock and Alex Langmuir stand out as influential and productive contemporaries in communicable disease. However, chronic disease was the centerpiece of epidemiology from my perspective. In the United States, Lilienfeld carried that banner, and Brian MacMahon formulated the necessary methodologic structure.

*NP: What do you think has been your most influential paper?*

MS: I was surprised and pleased with the citations and reception of the paper that I first gave in Brazil in 1994 and wrote with Ezra Susser, "Choosing a Future for Epidemiology."<sup>4</sup> My work on causality has had a fuller reception perhaps than my research work, first and perhaps most, my paper on "Judgment and Causal Inference," and so on. On the research side, I suppose it must be the Dutch Famine studies, now being followed by younger colleagues, including Ezra. Zena and I would choose research on two main criteria. One, we avoided fields plowed over and over again. Second, we aimed for something that could make a difference to the ills under study.

*NP: Which of your contributions to the field would you like most to be remembered for?*

MS: I cannot help thinking I would like *Causal Thinking*<sup>5</sup> to be remembered. I am pleased, with the book now 30 years old and 20 years out of print, that it is known and still being translated into other languages. The Dutch Famine book<sup>6</sup> is also important for us, and its long-term significance is being recognized with its perspective on fetal exposure and

ultimate outcome, even if in that study the cohort had reached only age 20. Our onetime colleagues and students as well as others are assessing health effects in that cohort, now in their 50s.

*NP: You have not mentioned your strong work in human rights.*

MS: That arises from the imperatives of social commitment flowing from my war experience and the return to South Africa, where democracy and the vote were confined to 15% of the population. The rest of the population was "others," hardly in the spectrum at all except as a threat. That paradox produced a severe cognitive dissonance not easily resolved if ever one thinks about it, and of course one did. The social and political commitment we then made stayed with us; it all flowed from the antiapartheid struggle and broadened into human rights, something one had to pay attention to and do what one could.

*NP: What has been epidemiology's most important contribution to society?*

MS: Ameliorating and improving the health of the public. For the rest, its scientific base and pursuit of causes introduces a serious element of rigor into public health endeavors. Epidemiology teaches how you might go about changing things and be sure that you have changed them for the better, which is not always the case.

The necessary skepticism of the scientific endeavor is critical for public health in the broadest sense, which is for many largely an evangelical discipline. Epidemiology keeps your feet on the ground and keeps your goals within reachable distance or frames them so that they are.

*NP: How do you see the current state of the health of epidemiology?*

MS: I have been writing a fair amount about this over the past dozen years, starting with "Epidemiology Today: 'A Thought-Tormented World.'"<sup>7</sup> I felt that we were at cross-purposes in formulating what epidemiology was. The academic center of the field was diverging from its concern with substance into the minutiae of methods. Not to say that methods are not essential, but to make methods a principal activity, to the neglect of the object of the activity, seems to me a travesty. Also, one was hearing that epidemiology is strictly a scientific discipline and its objective is to do good science. Epidemiology is a science, but the isolated objective of doing good science puts aside, as not germane, the ultimate objective. The aim to advance methods provides the means for discovering the world, not the means to ameliorate, improve, and advance the people's health.

*NP: Have things moved in another direction more recently?*

MS: There has been alleviation since, a nascent counter-movement: the idea that things other than method are germane. I had also noted a narrowing of epidemiology, confinement to strictly individually based research. Even

though we studied populations, these were not constructed around real social entities, but were merely aggregates of individuals arbitrarily selected to meet the needs of a given design.

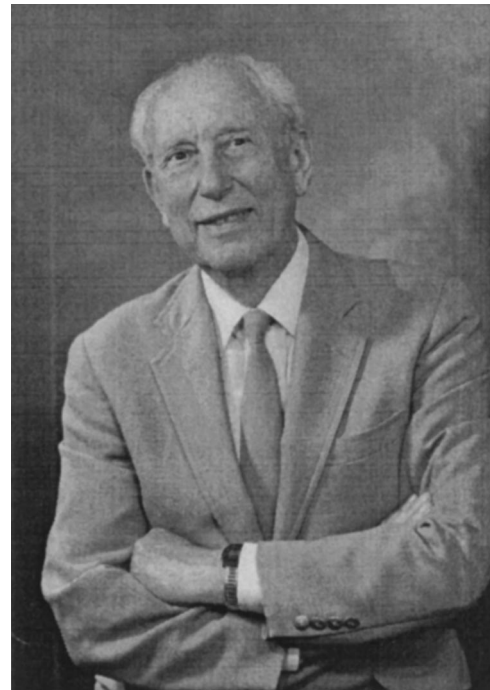
*NP: Is this what you mean by the dominance of risk factor paradigm?*

*MS:* Yes. Not that this paradigm has not been productive. If you stick with that perspective only, you are not in the realm of social impact and of understanding and perhaps changing a population's health in several dimensions. So I began to advocate what I had tried to practice, a multidimensional epidemiology that takes account different levels of organization and different historical times. The trends worry me less now, but starting in the 1970s, a tendency had grown toward epidemiology as big science—multicenter epidemiology with design and analysis centralized. The several recruiting centers became mainly data-gathering operations, and their many researchers mere foot soldiers following the dictates of a bureaucratic center. I saw that as a danger to individual scientific enterprise. Although it is wonderful to have the resources of the government coming our way, it can limit freedom of both thought and action. To promote an original idea becomes difficult if it does not already have an established foundation. That can stifle innovation and produce largely confirming replication.

Zena experienced this in a very specific way. When the HIV epidemic broke in 1982, here in New York City and in San Francisco, she, as always excited by the new, concluded that the disease was likely to be transmitted not only heterosexually, but bisexually. We did not know it was a virus, but we did know that some gay men are bisexual and have sex with women. It seemed sensible to Zena (and to me) that she ought to look into the question of heterosexual transmission. She recruited Robin Flam, our doctoral student, for some very interesting observational work—close-in observations of urban sex workers—as groundwork for a proposal that Zena and Robin submitted in 1983. The National Institutes of Health epidemiology study section turned it down twice because, they said, HIV does not affect women. It is a male disease and, moreover, this was a transmissible disease and Zena was not experienced in infectious disease.

*NP: So new a discipline and so hide-bound already. How about opportunities for epidemiology now and in the future?*

*MS:* We have been intensely focused for a half-century on chronic disease. I never did exclude infectious disease, given early experience of syphilis and tuberculosis, and now it becomes steadily more apparent that so-called chronic disease often has an infectious basis. One of my special interests was peptic ulcer, and I knew there was something funny about it. George Davey Smith has pointed out to me—I had quite forgotten—that one of my cohort papers on peptic



Mervyn Susser, 1996.

ulcer<sup>8</sup> did allow that there might be a specific cause such as infection, and now we know there is.

*NP: The cohort phenomenon that you described in peptic ulcer was compatible with an infection model.*

*MS:* Yes, although infection was not the first cause one thought of by a long way. Nothing shows the role of infection in chronicity more powerfully, of course, than HIV. Forgive the diversion, but we need to be catholic and flexible, to accumulate new scientific tools and face the new problems. These include the wonders of genomics: better to specify disease and to be exact about what our outcomes are and differentiate among them. That should not divert us from the fact that, for epidemiologists, genomics clears up specification errors and is not the heart of what we do. Yet it is a critical tool; we must learn to use it.

Overall, we need assemblies of specialties: molecular epidemiologists no less than epidemiologists well rehearsed in infection, in statistics, and in clinical medicine. Methodologists capable of dealing with multiple dimensions, too, will be needed; all this takes great creativity as well as skills.

*NP: Do you have any predictions about what the future will hold for epidemiology?*

*MS:* It is here to stay, but bound to change form. We are specializing because, like with all science, the field grows at once exponentially and more concentrated. We cannot be omniscient, so collaboration is critical. Epidemiology gains in importance and will become more contributory as we learn to grasp these many dimensions of reality.



NP: *What advice would you give to a new epidemiologist starting out?*

MS: First, select a problem that seems susceptible to answers and then find ways of reaching those answers. Do not be governed entirely by your armamentarium, although one must stay within one's capacities. Choose the problem, a health problem of some sort.

Then, if one insists on being multidimensional, how do we distinguish ourselves from sociologists of health? Our key problems are health outcomes, not problems about how societies work, or about how people and groups interact. When I was recruited to Columbia, I was known best for the book on *Sociology in Medicine*.<sup>2</sup> I was not going to abandon my sociologic interests just because I was an epidemiologist. Jack Elinson, a noted medical sociologist, was then in the Division of Administrative Medicine. I proposed to Dean Ray Trussell that Jack head a new division for social science in medicine. This led to the innovative Division of Sociomedical Sciences. Jack and I distinguished our respective turfs by specifying the dependent variables of epidemiology as health states, and those of social sciences as the impact of social structures and forces on health services delivery and health professional function. This sufficiently segregated our interests.

Another piece of advice, in addressing a problem, is to choose it for "epidemicity"—its fit with epidemiology—and to specify the crucial points of entry to the problem.

NP: *What would you advise in terms of training of young epidemiologists?*

MS: One must have a serious statistical and numerical element. Not as specialists, but epidemiologists must understand the territory—comprehend the logic and be reasonably numerate. Equally, one needs a biologic substrate and a social substrate. Accordingly, in the PhD program at Columbia, we had 3 tracks depending on whether students were entering from medicine or biology, social science, or statistics. I hoped the students would cross-fertilize as they proceeded toward graduation. Also, I emphasized always the historical evolution of whatever is under study. Better to comprehend where your discipline comes from if you are to know where you are heading.

NP: *What is the value of a medical education in epidemiology?*

MS: I valued and never regretted my medical education, nor what I had of a clinical career.

NP: *You mean the suffering in anatomy was worth it?*

MS: We did truly suffer in those days, 700 hours. However, disease is a substrate with which, like physicians, epidemiologists are forever engaged. I do not think you *have* to go through medicine, but if you do, it is an enriching alluvium to draw on for the rest of your career. However, not essential, or I would not have created a PhD degree that could be acquired straight after an undergraduate degree. Very capable people, successful in epidemiology, have not had medical training.

NP: *Do you have any message you would like to share about the discipline that might not have been covered by the questions we have posed?*

MS: To formulate intellectually one's interest in any field is wise, I believe necessary, for sustaining it for a lifetime. You need to see where you are going, why you are going there, what your discipline is about, and what it should be about. That has been a sustaining preoccupation in many of the things I have done—contending with what is new and ready to learn even from what you disagree with.

## ACKNOWLEDGMENTS

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