DEMOGRAPHIC DESTINIES

Interviews with Presidents of the Population Association of America

Interview with Joseph J. Spengler
PAA President in 1956-57

This series of interviews with Past PAA Presidents was initiated by Anders Lunde (PAA Historian, 1973 to 1982)
And continued by Jean van der Tak (PAA Historian, 1982 to 1994)
And then by John R. Weeks (PAA Historian, 1994 to present)
With the collaboration of the following members of the PAA History Committee: David Heer (2004 to 2007), Paul Demeny (2004 to 2012), Dennis Hodgson (2004 to present), Deborah McFarlane (2004 to 2018), Karen Hardee (2010 to present), Emily Merchant (2016 to present), and Win Brown (2018 to present)

JOSEPH J. SPENGLER

This was a joint interview of Joseph Spengler, C. Horace Hamilton, and Clyde Kiser conducted by Harry Rosenberg at the Carolina Population Center, Chapel Hill, North Carolina, December 15, 1976.

CAREER HIGHLIGHTS

Joseph J. Spengler, PAA President in 1956-57 (No. 20), was born in 1902 in Piqua, Ohio, and died in 1991 in Durham, North Carolina. He received all of his degrees in economics and all from Ohio State University: the A.B. in 1926, M.A. in 1929, and Ph.D. in 1930. He was Assistant and then Associate Professor of Economics at the University of Arizona in 1930-32 and 1933-34, interspersed by a year (1932-33) at Duke University, Durham, North Carolina. He returned to Duke in 1934 and remained there until his retirement, as Professor of Economics and eventually Director of Graduate Studies. His many publications in population economics dealt with such themes as the history of population and economic theories, migration policy, changing rates of fertility, and the concept of optimum population.

ROSENBERG: Horace, I would like to start with you and ask you what your first association was with the PAA.

HAMILTON: I first joined the PdoubleA when I was at North Carolina State University. I was doing research mainly with the agricultural experiment station, the agricultural economics department and rural sociology. Among other things, I was studying some of the state's social problems and needs connected with the Depression. But I had this interest in population. Publications from the 1930 census were just coming out--in 1932, 33, and I guess even 1934. The first word I remember getting about the Population Association was a letter from Frank Lorimer, who had written a book with Fred Osborn on the Dynamics of Population [1934]. He was secretary of the Association [1934-39] and asked me for 75 copies of a little book I had put out for the experiment station at North Carolina State on rural-urban migration in North Carolina to be distributed to PAA members. I called up the experiment station and asked them to ship them off. I was tickled to death that somebody was going to read the damn thing.

I see from the member list that Joe Spengler has that my name was on there in 1935 and I guess that's when I joined. They had a meeting in 1935 in Washington and I probably attended that one.

Among my earliest memories, of course, are some of the people who are here, especially Clyde Kiser. He was our old buddy in the department of sociology here [University of North Carolina at Chapel Hill], back in 1926 and 1927, working on juvenile delinquency in [Garrett?] County, North Carolina.

I was joining other organizations about this time. My first, of course, was the American Sociological Society; I joined that about 1927. There were some population papers being published there and the rural sociology section. Later in the 1930s, 1936, we began publication of the rural sociology journal; we called it Rural Sociology. About the same time the American Sociological Society--they called it Society at the time--dropped the American Journal of Sociology and published their own journal, American Sociological Review. So there were a lot of things happening about that time. I became conscious very quickly that if I was ever going to get any work done I'd have to quit joining organizations--or quit going to all of them. We also had an organization called the Southern Agricultural Workers Group, not farm laborers but professionals working in colleges and universities. We had meetings of that in the South, usually in Atlanta or Birmingham or New Orleans.

The big thing that impressed me about the Population Association is the same thing that impressed me about other organizations that I had joined during the early 1930s and that was the opportunity to meet with people that I knew only by name and at a distance. I got most of my

satisfactions out of the personal and professional contacts. I see the first president was Henry Pratt Fairchild. I remember an article he wrote in Harper's Magazine on population, the 30 or 40 percent increase in births in one year, 1920 or 1921, after World War I. I remember Sorokin of Harvard talking about that. He got the idea that we were going to have overpopulation because of this increase.

Henry Pratt Fairchild was president from 1931 to 1935. It must have been an informal organization in those early years, possibly centering pretty much around Fairchild. Following Fairchild, here is Dublin (1935-36), Warren Thompson (1936-38), Lotka (1938-39), Truesdell (1939-40), T.J. Woofter (1940-41), Whelpton (1941-42). I met all of those people. I knew of their work before the Association started and I utilized their methods, particularly this method of computing a stable population, true rate of natural increase.

SPENGLER: The record probably would bear out that Fairchild was the prime mover who put this thing over. I mean he was the type. I remember when we were together at the first big meeting on birth control, organized by Margaret Sanger in 1934, with Amelia Earhart and Katherine Hepburn and so on, and Fairchild was the real pusher. I don't mean this is the pejorative sense; good organizer. I don't know if we would have had an organization if it hadn't been for Fairchild, who had done work those many years on immigration, this, that and the other. What always struck me was that his brother was a very conservative economist at Yale, wrote on income distribution. He had this book called [Furnace Fairchild?], all his students used to alliterate this thing. I think you really more or less felt this way--the importance of Fairchild as the organizer, pusher. Osborn may have gotten, put up more money and so on, since he was interested.

HAMILTON: I never did know Frederick Osborn. Evidently he was one of the great men in the early history of the Population Association. The man I knew first about in this field was Warren S. Thompson. He had written his doctoral dissertation on the population of China, I guess. I had first met and heard him talk about China.

SPENGLER: I think Warren ran into Scripps while he was making a trip to China and that's how Scripps got interested in this thing and put up the Scripps Foundation [for Research in Population Problems].

KISER: Notestein, in one of his articles, says that Scripps was interested in world population. He went up to Columbia University and was going through the card catalogue and ran across a reference to Thompson's book [dissertation on Malthus] and got impressed with Thompson and induced him to go with him on a trip to the Far East, in his yacht. They were gone for about a year and when they came back they had the plans for the Scripps Foundation.

HAMILTON: I think the Scripps Foundation played a big role coordinate with the Population Association of America. There were Thompson and [P.K.] Whelpton at Scripps, Clyde Kiser at the Milbank Memorial Fund. Whelpton was an agricultural economist and taught down at Texas A & M College, where I had gone to school. I didn't meet him while I was there.

There were interlocking relationships. In the early 1940s, I was offered a job by the commissioner on hospital care of the American Hospital Association. One of the first people they checked me out with was Warren Thompson--wanted to know if Hamilton would do any good as a demographer on their staff. Warren evidently gave me a good recommendation, so I got the job. It moved my salary from about $4500 up to $8000 just within one year. Is Warren living?

KISER: No, he died about nine years ago. He'd been out of his mind for a couple of years.

HAMILTON: T.J. Woofter is another man I would meet at all the meetings and enjoyed contacts with him. In fact, Woofter asked me to write a paper, do a study on rural-urban migration in the Tennessee Valley. So we did that. Conrad Taeuber [PAA president 1948-49] sort of alarmed me. Back under the old FERA [Federal Emergency Relief Administration], he wrote a series of bulletins on the rural population and collectivization. [Something about Ohio State.]

SPENGLER: I played volleyball at Ohio State with [Charles] Lively. He was an exceptionally good volleyballer. If you got first choice, you got him. The ag economists went to Ohio State. I thought the ag economists were much more realistic than the rest of them.

KISER: I went to the population conference in Paris in 1937 [IUSSP] and Lively was there and he told me that Thompson had offered him the job in Scripps before he offered it to Whelpton.

ROSENBERG: Joe, can you tell about your first association with the PAA?

SPENGLER: I was interested in this thing [population] very early, because when I lived in the country we had a very good library in my hometown. So I'd take the stuff home, particularly if it looked like the weather was going to be bad, because I wouldn't have to go to school, for which I was always grateful. I got hold of Malthus's Essay one time and you know he has a couple of formulas in there, forecasting population. I told my father that and he said that was a lot of malarkey; nobody could forecast the population. I guess he was righter than I was.

So I had this interest from then on, which was back when I was in--I must have been about freshman high school. I went to Ohio State and I wasn't aware yet of [A.B.] Wolfe's things, but I had a very good professor of ancient history and he liked me and took me to lunch and was telling me about Wolfe. So then I got in with A.B. Wolfe immediately and I think he was one of the charter members of the PAA. So my interest in this was very early. But I cannot remember the first meeting I went to. See, I was at Duke in 1932-33 and then I went back to Arizona in 1933-34. I got one trip from Arizona to Cleveland in 30-3l. Times were hard and people were being paid in [warrants?] the year I was at Duke.

I clearly remember going to a meeting when we were all invited to the White House. This must have been the Washington meeting in 1935. What I remember then was there was a man named Frank--L.K. Frank--in the chair. There was some argument--I never felt that social sciences should be pushing anything or propagandizing, though I did think that all issues are subject to examination, and I felt a certain hostility to concern with birth control matters. Of course, Norman Himes was an exception to that. I think that upset Frank a little. I had the feeling that we were enraging everyone.

A lot of my work was with Kuczynski, because I was at the Brookings Institution in 1926-27--the Institute of Economics--and Kuczynski was there working on his two books on Europe. I was studying the movement of fertility in New England, mainly, because that's where the data were best. So that's what I wrote on, and migration and so on. Then I went back to Ohio State. I think Wolfe and Brookings and all got me involved in the PAA. So, as I had an opportunity to go to the meeting--maybe the Washington one was the first, or the previous one. So I got in around the beginning.

KISER: The first annual conference [organizing meeting; May 7, 1931] was in New York and the following three meetings, 1932, 1933, 1934--at the Town Hall Club. Fairchild was a sort of resident manager of the Town Hall Club; his office was there. In 1935 we came to Washington.

ROSENBERG: I'm interested in this reception that Eleanor Roosevelt gave. What was the occasion?

SPENGLER: It wasn't much of a reception. We just marched down, arrived, Fairchild stood next to

Mrs. Roosevelt and introduced each of us and we shook hands. I thought the White House very stuffy. At the Brookings Institution we'd look out and see the White House and I always referred to it as "your inferiority complex."

KISER: I remember that while we were in session, Eleanor Roosevelt came over and made some remarks to the group. She sat right behind me. Fred Osborn brought her. I wanted a good look at her, so I just turned around and looked and she gave me this stern look. She sat there and knitted while Carter Goodrich was giving his paper on migration and economic opportunity.

SPENGLER: Rupert Vance was there. She was especially solicitous with Rupert; he was crippled by polio.

KISER: At this White House reception, a young guard saw us all starting up the stairs and saw Vance come along on his crutches, so he crooked his finger and took him into a little elevator.

SPENGLER: One thing that struck me early in the game was how many people were interested in population. I was just looking at something I'd forgotten about--a chap named Punke, he was down at Georgia State Women's College in Augusta. I don't remember him from Adam, but the thing that struck me was he had an interest in this. We had some correspondence. Like Horace, I had the feeling that there were a large number of people interested and you had an opportunity to get acquainted.

I bought Lotka's book [Elements of Physical Biology, 1924?; Analyse demographique, 1939?, or other?]. I thought that was the greatest book I read in the first 50 years of my life. What it showed me was the rich variety of matters that [centered on population]. This was what I got out of Wolfe's course on population; you had to study geography and this, that, and the other. As an economist, when people asked me what I was doing and I said I'm working on population. "Well, what's that?" I just let the fools suffer in silence and never paid attention. My wife said I was really rude. The thing that caught my eye and what led me to introduce a course on it just as soon as I could was that you had a tremendous range of materials; all kinds of things emerged here. As far as an economist was concerned there was nothing else.

I first took the course with Wolfe. Then when he went away once, I took it over for him, I think for a term. I went to Arizona and introduced it there even in my second semester or second year, when I had some freedom to put something in. And when I came to Duke, I immediately introduced it there. I was supposedly a labor economist. What I got from Wolfe was a wide range. Check the journals; he wrote a tremendous lot on this. I've been tempted to write a lengthy paper on his contribution. But that's how it came.

Then things just kept enlarging and you had more and more angles. And down here in the South--as long as we were poor in the South and it's hell to be considered other than poor--we were the scheduled classes, so we got a certain amount of money from the SSRC [Social Science Research Council] without being questioned.

ROSENBERG: What's that you have there?

SPENGLER: That's the proceedings of one of our meetings, "The Third Annual Southern Social Scientists Research Conference in New Orleans, 1937." We had a regional meeting every spring; Raymond Thomas was the chairman. Rupert Vance went every year and we would get a car--four or five would go. We got the money. There was nothing to splurge on, of course. This was about the South--a major theme was always the population problem in one character or another, much of it on agriculture and migration and so on. Simon Kuznets came down one time.

ROSENBERG: Was it always focused on population?

SPENGLER: No, that was a component. But you had a number of people in the South who worked in this and then you got tied in with the population. In addition--as I remarked to Horace--Rural Sociology came into being and my own feeling was that up to the time of World War II that was the best sociological journal in the United States if you were interested in demography.

So there was a general kind of syndrome of concerns. And this fed the Population Association. I think we brought a considerable impact from the South into it, because these urban characters from up in New England didn't understand anything about agriculture anyway. We were able, I think, to give a certain orientation it might not otherwise have had.

ROSENBERG: Do you think you can tell that when you look through the officers--the impact of Southerners on the Association?

SPENGLER: Well, you've had Rupert Vance [PAA president 1951-52], who's a distinguished demographer from the very start, continuing somewhat, I think, Odum's concerns with regionalism.

KISER: T.J.Woofter, Jr. [president 1940-41], too. Odum's Southern Regions was published in 1936.

SPENGLER: Yes, Woofter was particularly interested in what you call the labor force replacement ratio or something. Several people here in the sociology department. These things all touched upon the population excess here in the South. We had a particular orientation when we were working locally and we also had a good empirical orientation, because there was so much to go on.

ROSENBERG: Was a major concern at that time with labor excess in general, let's say, during the 1930s--as a population issue?

SPENGLER: Well, the high rate of fertility among the least privileged agricultural people, particularly the blacks. Whether it was white or black, you had a very heavy fertility and they therefore didn't have the opportunity to elevate their kids upward. You had the shortage of education and the South spent their small budgets relatively more on education than a good many places, but you couldn't get any federal help on education to speak of, as I recall.

You had mobile human capital and you were here and it's all growing up in the South. That was beginning to move North, because we'd had the previous experience of the heavy movement during World War I. I think that comes out with Kuznets and Dorothy Thomas and those studies. So that was mobile human capital. We didn't turn it into technical terms. The economists talked about the "learning effect." Well, every damn dog is subject to a learning effect. So we didn't fancy it up; we just looked at it in the country. So there was a real sense about what was going on. We had Social Forces, too, and then Rural Sociology and these fugitive publications. Of course, Horace knows a lot more about these than I do. But that's what made an impression on me.

You had another thing that could have been tied in; you had the National Resources Planning Board set up in Washington, about 1932 or 33. You had two books on trends in the U.S. First there was one during Hoover's time, in the 1920s [William Ogburn?--headed the staff of Hoover's Research Committee on Social Trends], and then there was one in which Whelpton and Thompson had their first projections, that was published by McGraw Hill [Population Trends in the United States, 1933]. And the sequel to that, the National Resources Planning Board report [Problems of a Changing Population, 1938]. There were all kinds of inquiries. A good deal of this stuff grew out of Southern demographers, I think. Some of the work that had been done sort of fed into that, stirred it up.

I was always interested--as I think Warren Thompson was--in city size. My point was that a

big city ought to be burned out, and that's now been confirmed. I had an argument with the New York Times editor on that. I did a piece on city size and migration. It never got published because we went to war just as I was finishing up. This is by way of saying that the interest ranged fairly widely in the National Resources Planning Board.

I think in the history of empirical social science, say from 1929 on, you'd find a whole network of things that fed into each other, to which in a way the demographers contributed a great deal. Not so much in technological terms, although they did very good empirical statistics, I thought, but in the sense of pointing to empirical issues they felt affected man's material welfare. I've been trying to interest one or two graduate students over at our place [Duke] to do something like this.

ROSENBERG: That would be somewhat an intellectual history?

SPENGLER: Yes, it would. But I think it would also throw light on the strengths and weaknesses of how you organize.

This is a little aside from the Population Association, but my point is that we had a whole network of things, because we had a network of interrelated problems. I know that Horace had a lot that he was working with on this. And you, Clyde, up there where you were [Milbank Memorial Fund in New York], you were working at you might say the other side, except for the measurements.

INTERRUPTION. Talking about Rupert Vance as tape resumes.

SPENGLER: One thing that always struck me about Rupert, you never could do anything whatever to help him. We were at VPI and he went up three flights of stairs to do a radio program. The only time Rupert would accept any assistance from me was when we were in Philadelphia, maybe when I was president [1957 PAA meeting, when Spengler was president, was in Philadelphia]. It was windy as hell; just bitter on that elevation. And I sheltered him because his circulation couldn't contend with that. That's the only time it was ever possible for me to extend any assistance.

Rupert introduced me when I made my presidential address ["Aesthetics of Population," published as a Population Bulletin of the Population Reference Bureau, June 1957].

HAMILTON: He gazed out over the audience and said, "I know this audience is a typical demographic table--all broken down by age and sex." That's funny. I can't remember your speech but I remember that. I never was much of a joke-teller but one of the great joys I always had was at these meetings and hearing Vance tell some off-color jokes.

SPENGLER: Two people that always beat anybody else. One was T. Lynn Smith. Clyde Kiser would always have three or four up his sleeve; he'd try them out on me first. T. Lynn always used to have several on blacks.

HAMILTON: Woofter was awfully good too. I thought a lot of T.J. He was very good on methodology--undercounting of blacks in the 1940 or 1930 population census. He pinned down that they'd undercounted 150,000. He was very much interested in that.

When I talked to Woofter about one problem I had, he suggested using another method and he was right, but I wanted an argument at that time. I later recognized that he knew what he was talking about.

On the Southern regions, T.J. Woofter had a special methodology for delineating regions, special kinds of regions, sort of out of character with Odum's generalized approach. But I wonder if it wasn't good to take off from some of Woofter's work, because he adapted Hotelling's method of factor analysis of central components, first components.

KISER: If I might make a serious remark, someone once defined the South as that part of the country in which if you wanted something good to eat you had to go to a Jewish delicatessen.

ROSENBERG: Clyde, could I ask you how somebody from Gaston County developed an interest in population? Do you come from a big family, for example?

KISER: No, there were five of us--three boys and two girls. And my own household is four. Well, I came to the University of North Carolina as a freshman in 1921. I dropped out and taught in high school a year. Then I heard about Odum's work here, through Jennings Rhyne. Jennings told me he would support me in an application for a fellowship. I didn't get a fellowship, but I got a scholarship that first year when I came back to work on a master's degree. Then after I took the master's degree, I planned to go on but I got hooked up with the study of St. Helena Island, a project Woofter was running there.

SPENGLER: What was your master's?

KISER: My master's thesis was on liquor law violations in Durham and Person counties. Frank Ross--he used to be editor of the Journal of the American Statistical Association--he and Jack Woofter were doctoral students together at Columbia and they were good friends. So they hatched up the idea of this study of St. Helena Island. I got hooked in with that. We ran into the fact down there that a lot of these Negroes had moved north, although this was not a place where Negroes were downtrodden so much. They were poor but they owned their own little plots of land. And they've had very little in the way of racial tension because there are very few whites there. But still they were moving. So they hatched up the idea that it might be well if I transferred to Columbia, if they wanted me there, and collect some data on Harlem Negroes and then come back to North Carolina for my degree.

Well, I got up there and I liked the group up there pretty well. I became good friends with Frank Ross. As a matter of fact, I gave blood to his infant daughter--I was her blood type--my first year up there; so I happened to fit in very well with him and his family. So I stayed up there for the degree. I was already initiated into demography more or less--Negro migration--and I took Chaddock's's courses in vital statistics and population.

Then in the summer of 1931, Chaddock showed me a letter he had from Frank Notestein. Frank Notestein said they had a lot of 1900 and 1910 census data on children ever born that needed analyzing and they had a fellowship for a year, for which I applied. So I went to the Milbank Memorial Fund in 1931. And I learned pretty soon there about the PAA. My immediate supervisor was Frank Notestein and Sydenstricker was above him. So I learned that a young organization, the PAA, was just beginning. They had had their organizational meeting on May 7th, 1931.

I might say a word or two about the circumstances of that organization. In my PAA presidential address, "The Population Association Comes of Age" [1953, published in Eugenical News, December 1953], I mentioned predisposing causes and immediate factors responsible for the Association. Among the predisposing factors was the increasing interest in demography during the 1920s. The Scripps Foundation started in 1922. Pearl and Reed had developed their logistic curve and Pearl had written Biology of Population Growth and at Scripps, Thompson and Whelpton were starting work on their projections. At the Metropolitan [Life Insurance Company], Dublin and Lotka had come out with "On the true rate of natural increase" [1925]. And in 1928, the Milbank division of research was started to do research on population.

The immediate factor I saw was the stimulus given by the formation of the International Union [for the Scientific Investigation of Population Problems/IUSSP]. The International Union was formed in 1928 and that grew out of a World Population Conference held in Geneva in 1927. Margaret Sanger organized that. Margaret Sanger did more for getting population started than we give her credit for.

She approached an anonymous source for money for that 1927 conference and she got it. She approached the Milbank Fund for money for the International Union and she got it. She approached the Fund for money for this first little organizational meeting of the PAA and she got that. Now the amounts were relatively small. For the PAA it was just $600 to pay Thompson and Whelpton's fare and a few people coming up from Washington, things of that sort. But she got the money on behalf of Fairchild. Fairchild did the legwork in getting the organization started. The Fund supported the International Union the first three years of its existence almost in full. It gave, I believe, $10,000 a year, or $30,000 for the three years 1928-31, and the Rockefeller Foundation chipped in with additional support.

The PAA had its organizational meeting May 7th, 1931. In that article I mentioned the first meeting of the American National Committee. The International Union was organized not on the basis of individual members but of national committees, so we had to have a national committee. The first meeting of that American National Committee was held February 4th, 1931. Lotka was the secretary. He gave me the minutes of that meeting and I quoted from that in that article. The first paragraph read something like this: " Louis I. Dublin opened the meeting by stating that he had been asked by the president of the International Union for the Scientific Investigation of Population Problems to become chairman of the American National Committee, in accordance with the organization of its executive committee. Dr. Dublin had accepted and in conjunction with Professor Fairchild and a group that had met at the latter's invitation, he had invited a small group to constitute the American National Committee. Those attending were: Louis I Dublin, elected chairman; Alfred J. Lotka, elected secretary; and then H.P. Fairchild, C.E. McGuire, Lowell J. Reed, Clarence C. Little, and P.K. Whelpton."

Now last night I was digging through some old files and one of the things I read was a letter from Lotka to Edgar Sydenstricker, March 3, 1931, just about two weeks after that February meeting of the American National Committee. He wrote:

> "Dear Mr. Sydenstricker,
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> In accordance with a motion carried at a meeting of the American National Committee, held in New York on February 4th, 1931, the chairman has prepared a draft of statutes, of which a copy is enclosed. The several members of the committee are hereby requested to communicate to the chairman any comment or suggestion that they may have to make regarding this draft in order that he may be able to send the statutes in final form to Dr. Carr-Saunders for publication."

Raymond Pearl was the first president of the International Union. Lotka gave the list of the original members of that American National Committee: Louis I. Dublin, C.E. McGuire, vice-chairman, and Alfred J. Lotka, secretary-treasurer. And members: O.E. Baker, Department of Agriculture; H.P. McGuire; James W. Glover, the life table man; George W. Kosnak, editor of the <u>American Journal of Obstetrics and Gynecology</u>; Dr. Clarence C. Little of Harvard Club--he was a biostatistician and he once was the president of the University of Michigan--and Dr. Raymond Pearl and Lowell J. Reed, both from Johns Hopkins, and Mr. Edgar Sydenstricker of the Milbank Fund, Warren Thompson and P.K. Whelpton.

Now, I might just say a bit more about that first meeting of the organization [May 7, 1931]. According to Fairchild, there were about 38 there. Notestein in one of his articles recently spoke of the overlapping membership of the American National Committee and the Population Association. Fairchild was the first president of the Population Association; Dublin was the first chairman of the American National Committee. I wonder if there was some jockeying between those two for a position as the arm of the International Union. But the American National Committee <u>was</u> the first on the scene. It stimulated the formation, I think, of the Population Association.

SPENGLER: Did you know anything about C.E. McGuire. He was at Brookings; a Catholic. I had lots of arguments with him when I was at Brookings. He was a brilliant man, very sharp and all, but a profound Catholic, and, of course, I had run-ins with him periodically on this. He was the correspondent to the London Economist too. I didn't know how he happened to get in [the PAA], because he had an ideological concern, I thought, rather more than a substantive concern.

KISER: Frank Lorimer said that Margaret Sanger wasn't concerned too much by science but she stressed the importance of having the backing of science in her movement and she didn't get very far with the International Union. She set up the Union, but it was not going to be an activist organization. She couldn't get very far with Dublin. Dublin opposed birth control on moral grounds. So probably for that reason, I thought there might have been some jockeying for position. Or maybe Margaret Sanger thought she'd take a second chance on the PAA and on Fairchild, because she hadn't been able to get very far with the International Union. But she didn't get very far there either. Notestein says here--he spoke of the fact that she had managed to get some money from the Fund to help set up the PAA. And he said--this is from his article in my book ["Reminiscences: The Role of Foundations, the Population Association of America, Princeton University and the United Nations in Fostering American Interest in Population Problems," in Clyde V. Kiser, ed., Forty Years of Research in Human Fertility, Milbank Memorial Fund, 1971, pp. 67-84]:

> "It was expected that she, Mrs. Sanger, would be elected first vice-president. Largely because of Frederick Osborn's influence, her name was withdrawn. Osborn, a great admirer of Mrs. Sanger, persuaded the meeting, and I think Mrs. Sanger, that the fortunes of the field would be advanced if the new Association were to guard its scientific character and keep free from attachment to the birth control movement." [page 70]

Now, from the very beginning, they adopted a scheme to guard the scientific character. They formed what they called a College of Fellows. These were the purest of the pure. Notestein describes it:

> "We went to organizational lengths beyond all lengths to keep out all but the purest of the academically pure. I still remember when about a dozen of us would meet in Dublin's office at the Metropolitan as members of the American National Committee of the International Union for the Scientific Study of Population Problems and draw up a memorandum to the new Population Association of America. We would then adjourn our meeting and quickly travel to the Town Hall Club, where the same group would assemble as the College of Fellows of the new Population Association of which were were the creme de la creme. As such we received the memorandum from the American National Committee, pondered its merit, and passed on the results of our superior wisdom together with notice of action taken to the body of the Association. The College then hastily adjourned to reconstitute itself as the Association and receive with gratitude the result of the College's mature wisdom. It really took us an incredible time to realize that the birth controllers and other action groups were probably less eager to capture the academics than the academics were to avoid capture." [pp. 70-71]

SPENGLER: In recent years, there's been a great resurgence of interest in fertility and family planning, which is really birth control, and all of these new people that have come in on family planning have now joined the Population Association and almost swamped it. That's gone full cycle. But I think the group interested in the scientific approach is so large now and dominant with the

journals--Population Studies in England, Population in France, and our Demography and Population Index. By the way, do you know anything about this new World Population Society?

KISER: They're people in Washington. It's sort of an alarmist group, I guess. I couldn't make much out of it.

SPENGLER: I couldn't either; I didn't join it. Funny thing, I belong to the International Union and their dues now are up to $40. They haven't followed all my other societies, like American Sociological Association, Population Association, Southern and so on, which have reduced the rates for elderly people down to practically nothing. The members of the Union get sort of a double rake. Your dues to the International Union are supposed to include subscription to Population Index along with Population Studies and Population. But we American members are paying for Population Index twice, that is, we get it along with Demography as PAA members.

KISER: I heard that American members of the Union would get a reduced rate because of that. [IUSSP members get a reduced rate in PAA because their subscription to Population Index is covered by IUSSP dues.]

KISER: I joined the Population Association before that first annual meeting [1932] but I didn't get into the College of Fellows. I was just a young squirt. John Innes and I attended that first annual meeting together in the spring of 1932 at the Town Hall Club. I think we were about the only two there--besides the birth controllers, Mrs. Sanger maybe--who were not members of the College of Fellows. The College of Fellows was just a sifting device. It was made up of the very first charter members, the professors and the bigshots. They were to guard the scientific character and keep the birth controllers out.

HAMILTON: The fact that Frank Lorimer wrote me for the 75 copies of that bulletin--it was published in 1934 and he wrote me right after it came off the press--there must have been a relatively small number of members in 1934. [PAA records show "around 100" members in late 1934-early 1935.]

SPENGLER: What about Walter Willcox?

KISER: Willcox was never president of the Association. He attended the early meetings all right. He even attended that [IUSSP] conference in Paris in 1937. I remember he attended a meeting at the Shoreham Hotel in Washington. He must have been well over 80 then, but he walked all over Washington. I went to his 100th anniversary at the Cosmos Club.

SPENGLER: He was over 100 when he died [103]. Got into Ripley [Believe It or Not] for that. I remember going to the Columbia Club for dinner around 1950 and he was sitting there eating with two or three people. I had corresponded with him on something and I went over and shook hands. He seemed quite spry; it was amazing, he was 100 years then.

KISER: After he got to about 100, he offered to be examined periodically by any medical group that might be interested and he did go several times to be examined. Notestein said he enjoyed being thumped by the doctors who examined him.

ROSENBERG: What was the secret of his long life?

SPENGLER: Good parents. I think a combination of genetics and culture factors. Individualistic factors too. I think nutrition has a hell of a lot to do with it and he probably got started on that. Then I think that genetically, some people do not generate excessive cholesterol or something like that--other factors that kill people off.

ROSENBERG: You say that Margaret Sanger was instrumental in generating a lot of resources and enthusiasm but that she somehow was kept out of the mainstream. Did she accept that role?

KISER: I think so. She must have seen what was happening. After all those things happened, she was quite willing to cooperate with a study of her birth control patients--Regine Stix and Notestein followed up 5,000 patients of the Margaret Sanger Clinic. She would have conferences with Notestein and Stix and take issue with them when she thought they were not showing birth control up in as good a light as she thought it should be, but she did things pretty good.

SPENGLER: Do you remember the journal called The Birth Control Review? I wrote things for that. Got invited to the first conference. You had old Charlotte Perkin--all these suffragettes--most entertaining conference I ever attended in my life. There was some pretty good stuff in that review and a lot of nonsense too. But it was in some degree a medium at a time when there was no other journal rather closely oriented [to population].

HAMILTON: I remember the year before I got married, I decided I ought to know as much as I could about birth control techniques. I wrote a personal letter to Margaret Sanger and asked her to send me any information she might have. She sent me an article and wrote me a letter and gave me the brand and name and everything which I could buy. I thought it was very instructive and to the point. As a matter of fact, I sent it to my prospective bride before we married. I wanted her to be sure of what was going to happen.

SPENGLER: She married a wealthy man, Mr. Clee, who lived in Arizona. She moved to Arizona not long after I came East. She was closely associated with the university people; very highly respected in Tucson. She was very comfortable in her older years.

I remember one time I made a speech to women on how much wealth they owned and how much more they would own and how it got concentrated when they had smaller families. The Catholics hopped on me--"this stinking, vicious. . ." The president of the University of Arizona, he was a man of parts, he never paid any attention to people who hopped on his faculty--obviously it was a scholarly argument that I presented. I was just describing how family size affected how much wealth they had. There was quite a bit of writing in those days on wealth--this was about 1933.

You remember General Francis Walker? Well, a student of mine was writing on the significance of legislation by our Congress having to do with Indians. He had grown up on a reservation himself. He told me--and I hope I'm remembering this correctly--when Walker was made superintendent of the 1870 census, he didn't have an office. So they made him head of the Bureau of Indian Affairs and that way he got an office. He had a young yellow-haired military s.o.b. named Custer and he told Custer, "Well, if you want to make a name for yourself. . . [go after Indians?]" This was an easy way to do it.

KISER: Did you know that Willcox was the Census Bureau's chief statistician for population about 1912?

SPENGLER: He didn't have much in the way of high-powered techniques; he had simple methods. But he made a big impact. I got my vital statistics from E.B. Wilson, Harvard.

KISER: I wrote a chapter for Frank Lorimer in Problems of a Changing Population with a part in it on factors underlying group differences in fertility. I gave the biological factors and then went on to show that biological factors are not so important and most differences were due to differences in contraception. Without asking me, someone cut out the contraception part and it just ended on biological factors, attributing all these fertility differences to biological differences. Who did this? Old E.B. Wilson. [This incident is described more fully in Frank Notestein's interview.]

SPENGLER: He was a mean bastard. He and Pearl had some way of ascertaining whether the other planned to go to a certain meeting and if he was to be there, the other wouldn't go. You know why? Old Pearl received an appointment at Harvard once and, according to the story, E.B. Wilson blackballed him. Blackballed him so that for a day or two Pearl was out on a limb. He'd already resigned from Johns Hopkins and then his appointment at Harvard was canceled because of E.B. Wilson's objection. But they took him back at Hopkins.

HAMILTON: Raymond Pearl [roused] a good deal of controversy on the logistics curve and that method of projections.

SPENGLER: Wolfe wrote a critique of it. Whelpton, in his first set of projections, his components method, he criticized the logistics curve.

HAMILTON: I lucked out pretty well on trying to make projections--a short method of projections of population from one decennial census to another for small groups. Came out in Social Forces in 1962. I wrote more papers and did more work with a practical interest after I retired as head of department and also when I was away from the department, like I did in Chicago with the American Hospital Association.

SPENGLER: I think Ed Hutchinson married E.B. Wilson's secretary. What did Wilson say to her?--"Keep your mouth shut." He had a first-rate mind and he was a son of a bitch.

HAMILTON: Getting back to what PAA was like in the early days of my association with it and some of the central characters, I think two people that contributed, man and wife, as much as anybody else to PAA were Conrad Taeuber and Irene Taeuber. Irene, you know, edited Population Index for years.

I remember we had a meeting in Charlottesville [1954] and there was going to be a Negro invited, George Roberts, Jamaican, and Conrad Taeuber made arrangements to have him put up at the [Jefferson] Hotel. When he came to the hotel, he just assumed that arrangements had been made, but they wouldn't register him. Conrad Taeuber went through the ceiling on that. I think he got it worked out, but it was a nasty situation.

It's too bad Irene had a premature death. She had an offer to leave Princeton and go to Georgetown as professor at a very good salary. Princeton found out so they upped her salary and kept her. But she didn't live there; she lived in Washington.

ROSENBERG: Horace, you said you had some thought on your older recollections of PAA.

HAMILTON: I was a generalist on nearly everything--rural sociology, agriculture--and for that reason, I decided at one time that I was going to quit fooling around with population. I was going to stick to rural sociological surveys. I remember telling Dan Price or Rupert Vance that I was going to let the university over here do the armchair research and I was going to do my surveys. Well, I

couldn't stick with that because the guy after Truesdell in the population division in the Census Bureau advised me to read a paper at one of the PAA meetings on net migration, techniques, and so on. I did it reluctantly. But gradually--you know, a man writes a paper or series of papers on a certain area and he begins to get tabbed--"Well, Hamilton is the guy to do that paper or say something about that."

ROSENBERG: Joe, what are your recollections of some of the early issues the Association was concerned with?

SPENGLER: I can't remember the issues too well. The thing that sticks best in my mind--something that sticks best in my memory respecting other organizations with which I was associated in the early salad days--was you had a sufficiently small group so we could hear most of the things that were presented. Furthermore, we knew each other, sort of speaking acquaintances, and there were people there with whom we had deeper common interests and it was easy to make contact and carry them on. You didn't have to plan ahead, because you played these things by ear. So what I liked was the smallness of the organization, rather than the conflict. The opportunity I had to get little views on things or lines on things that I could possibly make use of in my own research and teaching. Not so deep, but something I could jot down and stick in my head and go home and it would fester in my brain, even help me to teach or scholar or both.

Now you get these damn big markets. You can't have that anymore. There it was easy since you were all members of the same bark. You could go say, "I'd like to chat with you about this for a moment," and that was just standard protocol. That's what I remember. We got rid of most social scientists of all sorts and if we could restore that situation, I would be all in favor of it--provided I could survive the process.

HAMILTON: The universities would not pay traveling expenses to a faculty member unless they were delivering a paper. I got into trouble on that at Texas. I wanted to go to Detroit one year and deliver a paper on the social effects of the mechanization of agriculture, but they wouldn't pay my expenses. I said, "I'm reading a paper there." They said, "We don't pay people's expenses just because they've got a paper. You have to have some other reason to go." So I paid my expenses that time, several hundred dollars, and I had to take it out of my meager salary and I didn't like that at all. I published it in I think it was Rural Sociology. Had a lot of fun writing it; Lynn Smith got me in on that. Incidentally, a lot of papers I've written have not been papers that I thought of myself, but papers other people persuaded me to write.

Later on, Everett Lee was chairman of the social science section of the American Association for the Advancement of Science, which was meeting in Cleveland in about 1961 or 62. He wanted me to write a paper at first on the Negro deserts the South. I didn't like that word "deserts" so put it "The Negro Leaves the South" [published in Demography, Vol. l, 1964]. I got more requests for reprints on that paper, and also for it to be reprinted in other books and in other connections. At the same time, I got a request from Duke University--Edward Thompson and McKinney, I believe, were publishing books on the South. I had written this paper on the Negro and found it very easy to expand the same subject matter to whites and blacks and they thought so highly of it they put it Number 3 in the book.

I got some more mileage out of that paper. I was invited to address the alumni of North Carolina State University--they come back once a year--and the dean wanted me to make an address. I told him, "I have a paper which is going to be published and if you'll let me read it, I won't have to do any extra work." I did. The chancellor was there and all the other bigwigs and little wigs. I got a lot of mileage out of that paper, because people that I had met and known through the Population Association knew that this was something down my alley.

ROSENBERG: Clyde, could you say something about your feeling about the issues the Association was involved with and how it changed? The whole question of size is something I'm somewhat sensitive to, even over the brief period I've been associated with it. It has grown so rapidly. Last year for the first time, I went to the meeting of the Southern Regional Demographic Group, which is quite a small group. They have about a hundred people at their meetings. You get to know people over the two days on a face-to-face basis and it's much more personal. Leaves you feeling much better. People really talk to you about your presentation and you see them again at dinnertime and it's a very pleasant thing. I believe the Association size has been a real factor in changing the nature of it--at least as I hear you talking about all the people you interacted with through the Association.

KISER: Well, as I said, the original membership was around 38, according to Fairchild. I did a little spot map by state of them and most of them lived either in or around Washington or New York. The first three meetings, as I said, were held in the Town Hall Club and they were pretty small rooms. But then in 1935, the attendance did jump, because of the interest of the government workers. That topic in Washington was the relation of population to some of the New Deal programs. [Conference on "Population Studies in Relation to Social Planning," May 2-4, 1935. PAA fourth annual meeting was on May 3, 1935.] The organization was different too. It was in some respects more loosely organized in those days.

HAMILTON: They didn't have sectional meetings; just one big program.

KISER: That's right. Everyone heard the same thing; they had one session going. It wasn't a three-ring circus. Now it's about 24 varieties.

HAMILTON: Clyde, you worked in the field of fertility--the tremendous Indianapolis Fertility Survey--we migration people got to feel maybe the fertility people were running off with things. Dudley Kirk talked a bit about that in his presidential address ["Some Reflections on American Demography in the Nineteen Sixties," published in Population Index, October 1960].

SPENGLER: Yes, I believe he said--well, Warren Thompson used to say, "You can only be born once, but you move a hell of a lot."

KISER: And in another respect it was more tightly organized than now. The members voted on the Board of Directors and the Board of Directors appointed the officers. Furthermore, the Board of Directors was self-perpetuating. They would reappoint themselves. They didn't have this rule about not serving consecutive terms. So there were lots of complaints about a tight little group running things.

HAMILTON: I remember when that fight came to a head; I don't remember what year it was.

KISER: I'll tell you. It happened--not because of anything I did--but it happened in 1953, when I was president, that they did amend the constitution to put officer election on a membership basis. It was Con Taeuber who wrote and said he was going to propose this to the members. I rather resented it, because I had enough to do anyway getting ready to leave and then I had to read up on Robert's Rules of Order. But I think the thing worked pretty well. Phil Hauser was a bit pugnacious, so I wanted him on my side. He was the one I chose to introduce the motions one by one and then we'd vote on them. After the meeting was over, Irene Taeuber said, "You practically had that memorized" [Robert's Rules]. I sure did.

HAMILTON: Phil Hauser was president in 1950-5l.

SPENGLER: He was president when they met here in Chapel Hill in 195l. We had two meetings here--1940 and 195l.

KISER: At the 1940 meeting here, Truesdell gave his presidential address on the 1940 census.

SPENGLER: Let me tell you what O.D. Duncan said about Truesdell's address. You know how exciting a speaker Truesdell is. O.D. Duncan [Senior], you remember him, says to me, "Joe, I had to listen to Buckshot [Fall-in-a-trap governor]; damn sight more interesting than this."

KISER: I remember Odum got pretty fed up too. I believe he presided that night.

HAMILTON: But Truesdell was a great man. He's still living too, isn't he?

SPENGLER: He is; he's 90 years old. He's a good man, but he's a hell of a poor speaker. He was the man who introduced me to Phil Hauser. Phil was his assistant for a while [in the Population Division of the Census Bureau].

KISER: Well, it's really a lot of scope for interesting relationships and experiences. I think the trouble with all of our social science organizations--just like the AMA almost--they have a House of Delegates and they no longer attempt to have a mass meeting of everybody.

SPENGLER: There's one thing I miss now compared with the early days and this is not so much a function of change in size, it's something else. People were very knowledgeable about the facts of life in the early days. Now you have a bunch of young men--paralyzed monks or whatever you want to call them--who don't have much real interest in the world or any sense of it at all. So as soon as you shift away from a methodological feature you're apt to be pumping in a dry well. In the early days, people had a pretty wide range of knowledge of economics [and other things]. It might not have been scientific, but at least you had a basis. Now they don't know about any of those things and therefore you get these peculiarly circumscribed notions of [concomitants of] human behavior, despite the improvement in methodological techniques.

HAMILTON: I was thinking that too, Joe. We've had the computer and all the improvement in technology, methodology. Yet I don't believe we can predict any better now than we could 25 or 30 years ago. The facts should be in the computer. What makes a difference is not the computer; it's that they speed things up. And the stuff comes out of that thing. . .you get a stack of computer output that thick. What the hell are we going to do with it? Straight into the garbage can.

ROSENBERG: I wrote to Science magazine--there was an article by Sklar and Berkov [June Sklar and Beth Berkov, "The American Birth Rate: Evidences of a Coming Rise," Science, Vol. 189, No. 4204 (Aug. 29, 1975), pp. 693-700] on the trends in U.S. fertility and it said something about a resurgence in U.S. fertility. I thought there were some problems with their analysis and I wrote Science at the end of last week and they told me they would accept [my article]. Basically, I challenged what they said; it was on the basis of one year's data in California.

HAMILTON: The latest month that the monthly vital statistics came out of Washington shows a tremendous drop in births, both in the state and in the nation. The childbearing women, they've had their two kids and this depression, the housing [costs], is developing and beginning to show an effect.

ROSENBERG: But I was thinking about what you said about the use of the computer and refinement of methodological techniques. And at the same time, you see a great narrowing in the capabilities of understanding and specialization. It's fragmented the Association, I think. PAA is just enormously fragmented now into small groups.

HAMILTON: There's one thing they do now in most big organizations which helps the little man trying to get a start, give a paper. They have a section called contributed papers. Anybody that can't get on the regular program, the bigtime, he can always send in a contributed paper.

SPENGLER: I hear a lot of people at the Census Bureau watch that very carefully. They use that as a basis for getting to the meeting.

HAMILTON: There's a similar thing. You know this magazine of England called Nature. Very early they adopted the principle of open submission. Anybody who had an idea, no matter what [could be published]; they didn't submit it to a bunch of referees. One of our statisticians out here now at RTI [Research Triangle Institute] worked with me on a problem and he got an idea while he was working on it and wrote it up--just a short couple of pages--and sent that to Nature; got it published. And I never did get my paper published. The damn referees in the American Statistical Association, they wanted to be snooty about it.

SPENGLER: This would make an interesting study. Nature has had a profound influence over the years on scientific thinking. If one could compare the role that Nature has played in England over, say, 50 years with some comparable journal or two or three, I would think this would demonstrate Milton Friedman's point that if you've got a lot of liberty without imposing arbitrary rules, you get more product. I've often skimmed Nature to see if anybody's written something new in there.

ROSENBERG: Clyde, what are some of the books and materials you think might be useful in this project? For example, the history of the Milbank Fund, Forty Years of Fertility Research [Proceedings of a Conference Honoring Clyde V. Kiser, New York City, May 5-6, 1971, edited by Clyde Kiser, Milbank Memorial Fund, 1971]. Obviously, it's a central kind of thing.

KISER: That's right. There are three historical articles in here. My own is, "The Work of the Milbank Memorial Fund in Population since 1928." Then Notestein's piece, "Reminiscences: The Role of Foundations, the Population Association of America, Princeton University and the United Nations in Fostering American Interest in Population Problems." And then Frank Lorimer, "The Role of the International Union for the Scientific Study of Population."

Then this other little red book of which I've given each of you a copy. It's called, The Milbank Memorial Fund: Its Leaders and Its Work [by Clyde Kiser, Milbank Memorial Fund, 1975]. There's a little history of population here but not too much. I devoted this mainly to public health work. There is another good book, the proceedings of the World Population Conference in 1927, edited by Margaret Sanger and published in London by Arnold. Another book is the proceedings of the 1931 IUSSP conference in London; that was the first annual meeting. It's edited by G.H.L.F. Pitt-Rivers. He was an erratic guy but he was pretty bright. He was the one who really caused a ruckus in that Paris meeting in 1937. He was something of a Nazi and he wanted to kick the Czechoslovakians and several of the other Communist countries--or those he thought were on the verge of Communism--out of the Union. There was a lot of argument. The Germans and Nazis there wanted to give papers in which they talked about the master race and all of that. In planning the congress, according to Lorimer, they put all those papers in the same session and let Frederick Osborn be the chairman. At the end of the

session, Osborn quoted Voltaire: "I disagree with everything you say, but I would give my life for your right to say it."

SPENGLER: Gini organized a meeting earlier and Sorokin invited me to give a paper there, which I gave on state and population, or something like that. Later on, Gini had another one; I gave a paper to it too. [The IUSSP'S 1931 first conference was planned for Rome but transferred to London when it was learned that it would be used as a platform for the proclamation of Mussolini's theories. Gini, however, organized an international population conference in Rome, securing the "attendance of a considerable number of foreign scholars." Frank Lorimer in the article cited above, p. 89.] This brought together a good many demographers. One thing that struck me was the small knowledge Americans had of the degree of population study in Europe. There were a tremendous number of pretty good workers and fairly good statistics. The Hungarians had done pretty good work way back. But except for people like Wolfe who were well educated, there was small comprehension of the nature of the work that was done there. We were somewhat provincial, except for the connections that we had with the British.

INTERVIEW ENDS AT THIS POINT

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JOSEPH J. SPENGLER
(November 19, 1902–January 2, 1991)

At a time when many of the world's most urgent problems demand the insights of cross-disciplinary research with an historical perspective, yet academic research in economics has gravitated toward extensive specialization and temporal myopia, the prophetic scholarship of Joseph J. Spengler, one of the stellar social scientists of our generation, takes on an aura of singular distinction.

An economist by training whose writings spanned sociology, history, ethics, statistics, political science, demography, gerontology, public policy, law, genetics, and, of course, economics, Professor Spengler's lifetime research program on the nexus of economics and demography represents his most important seminal contribution to the advancement of knowledge.[1] Arguably the founder of the field of modern economic-demography (or population economics), his work effectively set out a research agenda both in theme and in methodology that will carry the subject into the twenty-first century. This is especially true of his writings on the consequences of demographic change, including aging; it is also true of his early recognition of the fundamental importance of the "economic model" of family-size choice.

The Consequences of Demographic Change. An examination of the evolution of Professor Spengler's thinking on the consequences of rapid population growth in the Third World illustrates at once the power and usefulness of his broad-based perspectives, his muster as a scholar, and his capacity to identify and confront problems well before they gained attention in scholarly and popular discourse.

He was the first prominent "population revisionist," characterized by a methodological perspective that highlights the intermediate to longer run, and that takes into account both direct and indirect impacts, as well as feedbacks within economic, political, and social systems. As early as 1953, Spengler embraced population revisionism, which in the late 1980s

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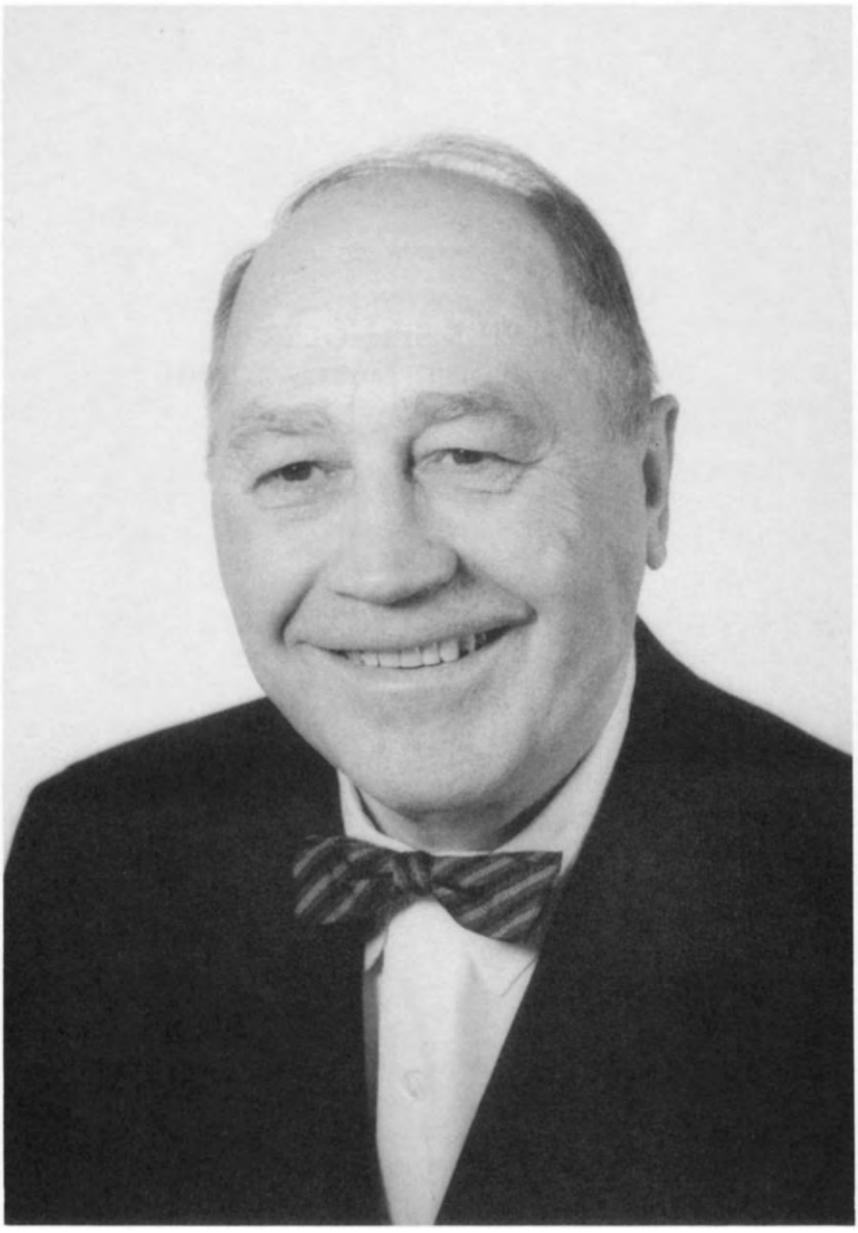
[1] Contributions to his other major field, the history of economic thought, as well as a short biography, are found in Irving Sobel, "Joseph J. Spengler: The Institutionalist Approach to the History of Economics," in *The Craft of the Historian of Economic Thought*, edited by Warren J. Samuels (Greenwich, Conn.: JAI Press, Inc., 1983). A selection of his papers on population economics, and a bibliography, are found in *Population Economics: Selected Essays of Joseph J. Spengler*, edited by Robert S. Smith et al. (Durham, NC: Duke University Press, 1972). An essay on the impact of his social and personal philosophies on teaching and research is provided by Leonard Silk, *New York Times*, January 4, 1991. See also Leonard Silk, "The Economics of Joseph J. Spengler," *Demography India* 14.1, pp. 137–145.



dramatically altered the assessment of population's impact on development from the strong (indeed alarmist) pessimism that prevailed in the 1960s and 1970s, to one of more moderate concern. The transformation of his own assessments in the 1940s mirrored the change in thinking that took place in the minds of most population analysts over the ensuing decades.

He began as a strong pessimist concerning the adverse economic consequences of population growth, convinced of the likelihood of the Malthusian specter—food scarcity arising from limitations on the availability of land. However, based largely on his research in the 1940s revealing this view of Malthus to be excessively narrow, as well as findings suggesting that food supplies would be quite elastic for decades to come, Spengler modified his early Malthusian concerns. (This moderated interpretation, now confirmed by history, is still not fully grasped by many population analysts.)

He was unwilling, however, to participate in the "dissection of the ghost of Malthus," since he had already broadened the framework of diminishing returns to argue that "it is probable that raw materials . . . presently constitute the limitational factors . . . [on development]." His pessimism about the economic consequences of population growth, somewhat eroded, was still strong. Moreover, fully cognizant that international trade and technical change could ease natural resource restraints, he remained pessimistic since the benefits of these sources of growth were spread unevenly. He judged them to be insufficient to "clip the wings of the stork and release mankind from the clutches of the Malthusian Devil."

But again, impressed by evidence that showed firms and individuals responding to changing resource prices in ways that effectively resolved much of the resource-limitation problem, Spengler rejected the empirical significance of the broadened Malthusian interpretation. Reflecting on this change in thinking more than a decade later, he noted: "Perhaps the greatest reversal of opinion . . . is that relating to the role played by land and other natural resources in economic development and the disenthralling of populations from Malthusian traps." (This interpretation was not fully embraced by most population analysts until the mid-1980s.) His pessimism, still notable, was eroded still further.

Never greatly impressed by the capital-limitation problems stressed by many analysts in the 1960s and 1970s (again a conclusion accepted by most economists only in the 1980s), Spengler's greatest residual concern about rapid population growth focused on what he termed "aesthetics," including not only adverse negative externalities of population-specific "bads" such as pollution, but also the impacts of population pressures on the degradation of renewable natural resources (e.g., forests, water, topography). In his 1957 presidential address to the Population Association of America, he wrote: ". . . an overworked stork is the enemy of the beautiful." And in his 1965 presidential address to the American Economic Association, he derided Americans "prepared to trade natural

grandeur and 'spontaneous activity of nature' . . . for junkyards and carscapes, . . . bent on frustrating Henry Ford's desire that his car give even the man of little means access to 'God's great open spaces.'" Indeed, he observed, ". . . some hold J. K. Galbraith had better labeled ours an effluent society than an affluent one." His population pessimism, by now substantially moderated by evidence that downplayed most of the traditional economic arguments, had swung substantially toward ecological concerns, based increasingly on clearly-labeled value judgments where his position was abundantly clear. (Prophetically, this environmental concern is likely to dominate the population debate in the 1990s, and for the same reasons that caused Spengler to change his assessments in the 1960s.)

It is intriguing to inquire what accounted for Spengler's intellectual transformation on the assessment of population's economic impact on development, and why it antedated by decades the recent movement by most population specialists toward revisionism. The explanation is simple. Professor Spengler's mind-set was broad, interdisciplinary, highly analytical, and historical. He was a scholar of the "old world" who was fully equipped with "new world" methodological and analytical tools. (Indeed, in 1947 he worked out the formal mathematics of key economic-demographic interactions.) Successful engagement in the "population debate" demanded a longer-run perspective, a strong empirical bent (given the ambiguity of the various relationships), and "institutional economics"—a perspective on how individuals, firms, and institutions (including governments and their policies, land tenure arrangements, and property rights) responded to population pressures. Increasingly out of fashion in the economics profession in the late twentieth century, institutional economics was central to Spengler's assessments, which have stood the test of time.

In the context of the population debates, the culmination of Spengler's writings was several unsigned chapters in the United Nations publication, *Determinants and Consequences of Population Trends* (1953). This report represented the most systematic and comprehensive assessment of the economic consequences of population growth since Malthus. Balanced in scope by taking into account both positive and negative effects of population, by distinguishing between short- and long-run impacts, and by reckoning both direct and indirect effects, the report offers a guarded net-impact assessment of the consequences of rapid population growth. While during the 1960s and 1970s "population alarmism" strayed dramatically from the Spengler assessment in 1953, in the 1980s the assessments by population specialists returned to Spengler's views, and population revisionism has re-emerged as the dominating intellectual perspective.

Aging. An analysis of population aging, a phenomenon now well advanced in the developed world and underway in much of the Third World, also benefited from the insightful and pioneering contributions of Joseph Spengler. As noted by Nobel laureate George J. Stigler, Pro-

fessor Spengler "for two decades was virtually the only important economist in the world to study population aging." While much of this writing took place late in Spengler's career, his seminal 1938 treatise, *France Faces Depopulation*, and his 1948 article "Economic Effects of the Aging of the American Population," effectively set out the analytical taxonomy for assessing the economic and social consequences of aging that continues to be used to this day.

Determinants of Population Growth. The innovative idea on the determinants of population growth that has dominated much of demographic research since the 1960s—the notion that the family-size choice is strongly influenced by the pecuniary costs and benefits of children—was pioneered by Spengler in the early 1930s. While fully recognizing the plethora of factors accounting for family size, he starkly laid out the fundamental premises of the economic model of fertility, now known as the "New Home Economics." In a popularized rendering in *Scribner's Magazine* in 1932, Spengler argued that "children are economic commodities even as are books, dogs, or automobiles. . . . A deficit of births . . . can be overcome only by the application of the economic principles of price." And in what was the first full-scale application of this hypothesis to public policy, he compiled estimates of the costs of children for France, demonstrating that without massive child subsidies by the state, declining birth rates would likely continue with depopulation a distinct possibility.

Many challenged his ideas, arguing that social, religious, and cultural values would surely dominate the economic calculus. He was unimpressed: "To bellow that marriage carries with it a moral obligation to raise a family is to bark at the moon." And he was right. (Catholic France and Italy currently record exceptionally low fertility rates.)

While the post-World War II "baby boom" could not have been anticipated by Spengler in 1938, the "baby bust," which effectively reinstated the long-run decline in fertility, was consistent with his forecasts. Indeed, his detailed analysis of fertility decline in France a half-century ago lays out most of the central issues appropriate to understanding the recent "birth dearth" in the industrialized countries, a phenomenon harkened by many observers to represent the greatest current threat to western civilization. The broad sweep of Spengler's mind, combining the application of new-world theory with old-world historical/cross-disciplinary perspectives, is critical to accounting for his role as a harbinger in social science in general, and in the field of economic demography in particular.

The Man. Joe was born and raised in a rural agricultural community near Piqua, Ohio. He attended Ohio State University where he studied under Professor Albert B. Wolfe, a distinguished institutional economist and demographer. Wolfe's influence on the young Spengler was profound. During this period Joe's life-long and ardent respect for the values of individual freedoms was firmly grounded. He strongly embraced the market as the best (although not perfect) institution to allocate society's

scarce resources, and deplored the proclivity of governments—indeed, bureaucracies in general—to intrude excessively on individual creativity and choice.

In 1934 he joined the permanent faculty of Duke University, where he rapidly rose to international preeminence. He retired as James B. Duke Professor of Economics in 1972. Past president of the American Economic Association, Southern Economic Association, Population Association of America, History of Economics Society, and the Atlantic Economics Society, he was also a fellow of the American Association for the Advancement of Science, the American Philosophical Society, the American Academy of Arts and Sciences, and the American Statistical Association.

At Duke Joe was a legend. His stature as a scholar was equaled only by his reputation as a man of wit, often taking the form of practical jokes for which he was justly famous. Those who bore the brunt of such attention were held in high esteem, as were those diligent readers of his dense and voluminous footnotes where an occasional bogus citation (e.g., to Montague H. Crackenthorp) might appear. His love of baseball, and his related insatiable appetite for victory in the face of vigorous competition, were also well known. Indeed, his astute acumen in organizing (with an occasional ringer) and inspiring the successful economics faculty softball team resulted in regular defeats of the arch-rival University of North Carolina counterpart. Finally, the Duke administration, which received regular letters from Joe that provided strongly pointed "reminders" about the importance of all those values and programs that make for a great university, assumed its fair share of the creative Spengler verve. It is reported that Joe's letters, sometimes of incendiary quality, have been individually wrapped in heat-resistant encasing, and stored in a fireproof file . . . just as a precaution!

My fondest memories of Joe were my many conversations in his home on Cranford Road, sitting in front of the huge picture window that overlooked his beloved wife Dorothy's splendorous three-acre garden of camellias and southern horticulture. On more than one occasion our evening talks were so intense that we failed to realize that the waning sunset had robbed the room of all light. In retrospect, these happenings might be considered symbolic of the man. The brilliance of Joe's visionary insights, and the vigor and wit with which he engaged in good conversation, were more than sufficient to transform the inconvenience of physical darkness into true and lasting light.

Joseph J. Spengler died on January 2, 1991, in Durham, North Carolina, at the age of eighty-eight.

ALLEN C. KELLEY
James B. Duke Professor of Economics and
Associate Director, Center for Demographic Studies
Duke University

ELECTED 1954; Committee on Membership III 1958–60.

Joseph Spengler gave a presidential address at the 1957 annual meeting in Philadelphia, and it is summarized below starting on page 200. Note that the summary indicates that Rupert Vance was presiding at the meeting. In fact, he was there to introduce Joseph Spengler and the summary of the dinner meeting presentation refers to Spengler's talk.

CURRENT ITEMS

THE 1957 MEETING OF THE POPULATION ASSOCIATION

On May 4 and 5 the Association met in Philadelphia as guests of the University of Pennsylvania. The program included ten sessions of papers, two meetings of the Board of Directors, a business meeting of the Association, and a dinner meeting. The program of the sessions and the authors' abstracts of papers follow.

Applications of Demography — I. Economic Analysis
Chairman: Everett S. Lee, University of Pennsylvania

Uses of Household and Family Statistics, and of Household Projections

Family statistics include a wide range of information, ranging from data on income for all family members combined and the number and employment status of workers in the family, to data on characteristics of the husband and wife separately and cross-classified, the number, ages, and relationship of the children in the family, and the presence in the household of subfamilies, lodgers, and adult relatives of the head. Family statistics also include data on persons by their living arrangements, as shown in data on family status, household relationship, and membership in an institution.

Obviously, it would be beyond the scope of this paper to give a detailed account of the multitudinous uses that are made of these family statistics. At best, it will be possible to present only a few selected applications of these statistics in professional fields, in government, and in private business.

1. In professional fields. Family statistics are used by demographers to describe phases of the family life cycle, relationships between the composition and economic status of the family in different social circumstances, patterns of marriage and dissolution of marriage, family living arrangements, and rates of household and family formation. Educators make use of these materials in courses on family life, family economics, and demographic methods.

Family counselors, medical practitioners, nurses, and medical and vital-statistics research workers are increasingly concerned about such subjects as family stability, family economics, family living arrangements, and attendant problems. Judges and social workers in courts of domestic relations and juvenile courts, probation officers, and statisticians in municipal courts can profit by widening their knowledge of the family so as to carry out their duties with greater effectiveness. Actuaries include in their training fundamental aspects of family dynamics. Statisticians in insurance companies are interested in analyses of marriage and family patterns as they relate to population growth, levels of health, and dependency rates.

2. In government. Agencies of federal, state, and local governments are concerned with numerous planning activities in which staff members make use of available family statistics. Social security experts want more knowledge about the circumstances of widowhood and orphanhood. Labor experts desire statistics on the number of mothers of young children who use this or that means of caring for their children

while they work outside the home. Housing experts turn to family statistics for information on family living arrangements, doubling-up, current and projected rates of household formation, and changes in age at marriage. Cost-of-living economists set up family models for use in their continuing surveys.

3. In private business. Extensive use is made of family statistics also in the fields of production, marketing, and investment. Manufacturers of automobiles, household appliances, residential building materials, wedding rings, and a host of other items that are ordinarily consumed on the basis of one per family, follow with extreme interest each fluctuation in the marriage and household-formation rates and each publication of projections of such rates. Likewise, advertising and marketing concerns which are associated with the distribution of these types of material, the investment concerns which provide the financial backing for these enterprises, the several utilities, insurance companies, etc., are sensitive to changes in family patterns that spell upturns or downturns in the demand for goods and services. — Paul C. Glick, U. S. Bureau of the Census.

Interrelations between Economic Development, Levels of Living, and Demographic Trends

The first part of the paper surveys some outstanding aspects of recent economic and population changes in Western nations and in the underdeveloped areas of Latin America, Africa, and Asia.

Rates of economic growth in most Western areas have been very high during the past decade, comparing favorably with the upsurges during their industrial revolutions in the nineteenth century. On the demographic side, mortality declines since the prewar period have been unexpectedly steep. Current expectation of life at birth in most Western nations is above the point which careful students of the question had until recently envisaged as a reasonable maximum for the foreseeable future. National fertility rates have generally declined from the early postwar peaks, but almost without exception continue to exceed the levels of the 1930's; in some instances they rank with those of the 1920's. As a result, crude rates of natural increase frequently compare with the upper rates on record for Western Europe 50 to 100 years ago. It is probably too late to make satisfactory assessment of the factors underlying the turn in Western fertility since the war. It seems likely, however, that the main causes were continued economic growth and prosperity. (Retrospective studies run the risk of underestimating economic factors, by attributing causal significance to social and psychological variables which were in fact moulded in the altered economic climate of the early postwar years.) The reverse influences — running from population to economic growth—have also been very considerable, particularly in the critical field of investment.

In the underdeveloped areas, mortality has often fallen at rates which would have appeared inconceivable a few years ago. Without an exception known to the author, the areas with relatively trustworthy records show declines which exceed the maximum declines in any Western nation during the modern era. Meanwhile fertility has remained at very high levels in nearly all instances; if the statistics may be believed, recent increases in birth rates have been far more frequent than decreases. With migration generally negligible, population growth rates of 2 to 3 per cent per year have become usual. Yet by 1955, food supply per capita appears to have recovered to prewar levels in the Far East and Latin America, and to have gone well over such levels in much of Africa and

the Middle East. In many areas the increase in overall real incomes has more than offset the growth in population, often by considerable margins.

Can these favorable trends continue? At least, may we expect that they will not be seriously reversed? More important than any forecast is the inadequate way in which the demographer customarily views these questions. The "transitions" approach is extremely vague about dates and magnitudes, even in interpreting historical experience. Little or nothing can be inferred, even in a crudely empirical way, about the approximate point in the transition process at which fertility may be expected to begin its decline. The central variables of transitions analysis, notably fertility, are ill-defined or ambiguous to the point where they lead to contradictory conclusions. Historical support for the usual description of Western transitions is far less than most demographers recognize. With respect to economic consequences, the transitions approach is basically neutral, since it is alleged to apply in essentially equal measure to both overpopulated and underpopulated situations. In this respect it represents a retrogression from the insights provided by optimum theory. Finally, the transitions doctrines, and demographic theory in general, suffer from a "built-in" analytical bias, in that the unfavorable aspects of population growth are more readily documented than the favorable. — George J. Stolnitz, University of Indiana.

Demographic, Economic, and Policy Factors in Research on Resources for the Future

With the continued rapid growth in population in this country and other Western countries which has been going on now for some fifteen years, and with the increasing awareness in underdeveloped countries of population-resources-level-of-living problems, and especially with the increase in knowledge about population and resource trends and possibilities, one may expect the demand for better demographic and economic data and analytical methods to become more and more insistent. The paper examines some of the critical demographic, economic, and policy factors related to increasing knowledge about resources for the future.

The first section of the paper provides a general ecological-economic framework, the essential elements of which are population (including numbers, composition, location, movement, and demands placed upon resources) and resource supplies (land, agricultural and forest products, water, minerals and energy commodities, outdoor recreation, plus their economic characteristics: production, cost, price, and consumption).

The second section sketches by means of a few statistics the major changes in absolute and per capita consumption of renewable and nonrenewable resources (including a few selected component items) in the United States between 1900 and 1952, with further comments relating to the following five years. (Most of the statistics are taken from research in progress by Vera Eliasberg of Resources for the Future, Inc.) The population-resources outlook for the next two or three decades for the United States is generally favorable, although projections of both birth rates and resources technology have to rest on uncertain assumptions. For many of the less developed, densely populated countries of the world the outlook is quite different.

The third section states the essential argument of the paper and provides several examples to demonstrate its relevance. The argument is that for the United States, or any other country, the connecting link between population and resources is cultural adaptation — technological,

economic, demographic, and organizational. The critical point comes in learning how to direct cultural adaptations to meet emerging difficulties posed by population-resources-level-of-living trends, by means of more rational and farsighted policies and decisions. Research in demography and economics should be directed more frequently to this point, so that the research problems may be addressed more realistically and the findings more quickly and readily brought to bear on the policy and decision-making processes of government and business and the organizations of labor, agriculture, consumers, and the professions. The processes themselves in many instances should be brought within the scope of demographic and economic research, so that the researcher may gain a better understanding of the roles which various groups and organizations play in these processes and of the ways in which these groups use objective data and analyses.

In the last part of the paper two examples are presented to show more concretely how a better understanding of the requirements of policy and decision-making can appropriately influence the formulation of research projects and the presentation of research findings. The first example concerns agricultural and land-use adjustment in much of the rural South; the second concerns the meeting of rapidly increasing United States and world demand for petroleum supplies. In each case the relevance of demographic and economic research for policy and decision is stressed. — Joseph L. Fisher, Resources for the Future, Inc.

Recent Developments in Demographic Research Techniques
Chairman: Robert J. Myers, Social Security Administration

Current Research on Population Estimates for States and Local Areas

This paper is in the nature of a progress report on postcensal population estimates made at the Bureau of the Census and at state and selected local agencies. It is concerned not only with publication programs but also with methodology, including experiments with methods that have been rejected or are still being tested. A number of official reports and journal articles by staff members on this subject are now in print. Since much of what is being done has already been described, this paper concentrates on what is new in this continuing program.

There was a major "breakthrough" in the solution to the problem of current population estimates about 20 years ago when such methods as arithmetic extrapolation and apportionment gave way to component methods in which natural increase and net migration are treated separately. No such major breakthrough has occurred since then, but a recent experiment with the combined use of school data and of death statistics for broad age groups is encouraging. Various refinements have improved the Census Bureau's component Method II, which depends on school data alone to estimate net migration for the population of all ages. The Census Bureau hopes to develop other symptomatic series that can be used to supplement school data. In addition to age-specific deaths, these series include two from the Bureau of Old-Age and Survivors Insurance: (1) changes of state of employment by covered workers 18 to 64 years old, and (2) changes of mailing address by beneficiaries 65 years old and over. There are still important obstacles to the utilization of the former data in population estimates.

The Bureau of the Census has a fairly well-developed program of annual population estimates for states. On balance, it is more difficult to make accurate population estimates for cities and counties than

for states. Partly for this reason but more largely because of lack of resources, the Bureau does not have an active program of estimates for local areas. Considerable experimental work on sources and methods has been carried out, however.

Moreover, since the Bureau has been able to publish so few of its own estimates for local areas, it has tried to serve the public by acting as a clearing-house for estimates made by state and local agencies. A questionnaire sent out in the spring of 1955 provided a summary of the sources of official estimates, the types of estimates, and the methods used by state agencies. A second and expanded inventory is now being conducted. Forty-one states so far have reported that they have at least one agency preparing estimates for local areas. The partial returns suggest a general trend away from the use of less reliable methods and toward the more reliable ones.

The paper also discusses some of the methodological research being carried out elsewhere, particularly by Bogue and B. Duncan, and by Frisén. — Henry S. Shryock, Jr., Jacob S. Siegel, and Benjamin Greenberg, U. S. Bureau of the Census.

Methodology for Making Forecasts of Births Using Cohort Fertility Tables

Two types of rates from my fertility tables for birth cohorts of women are useful in making forecasts of births and of population.

1. Age-parity-specific birth probabilities. One use of these probabilities in forecasting is to assume that they will continue to be as they were in a recent year or group of years. Other assumptions can be based on their past trends. In any case, the female population at the base date, classified by age and parity, is multiplied by the age-parity-specific birth probabilities (adjusted for deaths) in order to obtain the number of births of each order for each age-parity group during the first year covered by the forecasts. The products are used separately to classify by parity the women of each age surviving to the end of the first year. The sum of the products is the number of births during the year. Similar steps are taken for additional years.

Age-parity-specific birth rates or probabilities are much more trustworthy than age-specific rates if the fertility projections use the annual birth rates or probabilities of past years on a period basis rather than a cohort basis. The reason is that age-parity-specific rates are disturbed in much smaller degree by changes in the timing of births.

One minor disadvantage of using the age-parity-specific probabilities in question is that they are for single years; hence the projections must be carried forward one year at a time or the probabilities converted to a longer base. Another is that age-specific probabilities for first marriage and for first births to zero-parity ever-married women should be used rather than those for first births to all zero-parity women, but only the latter are now available. The main disadvantage is that the cumulative fertility rates of the actual cohorts cannot be readily ascertained until after the computations are made; hence it is difficult at an earlier stage to evaluate the reasonableness of the assumptions in terms of cohort fertility.

As the foregoing statements suggest, age-parity-specific rates or probabilities are better suited for use in making short-term forecasts (under 10 years) than long-term forecasts.

2. Cumulative birth rates, by order of birth, and additions to these rates from one group of ages to another. Forecasts of the final

birth rates of cohorts, i.e. cumulative rates by the end of the childbearing period, and forecasts of additions to these rates by age, can be made on the basis of cohort rates for past years and of information about the number of additional children expected like that collected in 1955 from a national probability sample of white married couples in the study, Growth of American Families. It is desirable to forecast high, medium, and low final rates, and to allow for different patterns of timing (e.g. the continuation of the post-depression trend toward younger marriage and childbearing, and a reversal of this trend). Combining (a) trends toward marriage and childbearing at younger ages and toward larger families, and (b) trends toward marriage and childbearing at older ages and toward smaller families, is desirable because it gives rapid divergence between the high and low results and hence is more likely to cover the short-run range as well as the long-run range of reasonable developments. It is helpful to make assumptions about the cumulative rates for births of each order as well as for births of all orders combined, but in the computations it is sufficient to use merely the latter.

Averaging the number of women in a group of cohorts at the beginning and end of a five-year period, multiplying by the addition to the cumulative rates of the group during the period, repeating the process for other groups of cohorts, and adding the products gives the total number of births during the period.

With this procedure it is a simple matter to establish reasonable assumptions for completed fertility rates and to evaluate them in terms of changes in the distribution of women by number of children borne. This method is much better than the first for forecasts covering a period of ten years or longer. — P. K. Whelpton, Scripps Foundation, Miami University.

Recent Thinking on Labor-Force Definitions and Measurements

Recent thinking on labor-force definitions and measurement would propell the Census Bureau toward two apparently incompatible objectives. One objective is a set of concepts and definitions, far more complex and differentiated than the present, requiring measurement tools of extreme delicacy, for use in connection with the Bureau's Current Population Survey for the monthly estimates of employment and unemployment. The other objective is a simplified set of concepts and definitions, suitable for use by an untrained respondent or a partially trained decennial census taker; this set might even abandon that unique feature of the labor-force concept — the one-week time reference. For other reasons, information on activity over a longer time period might be preferable for a decennial inventory.

Even the present labor-force concepts used in the CPS require that six or seven questions be asked, in priority order. Because of the difficulties involved, it has been suggested that some simpler concept, such as employment during the preceding year, which would require one or two questions, be substituted. However, on the basis of the users' opinions expressed so far, there seems to be almost no sentiment for abandoning the current labor-force concept in the 1960 Census. Despite the inadequacies of some of the labor-force data from the 1950 Census, consumers apparently continue to want state and local data and detailed cross-classifications, which the sample survey cannot provide, based on the same concepts that are used in the CPS. The Census Bureau is therefore including the current labor-force measurement in its tentative plans for 1960.

The need for information on the economic activity of the population based on a longer time period than a week might be met by data on work experience of the population during the calendar year 1959. Some information was collected in the 1950 Census on weeks worked during the preceding year, and it is hoped that it will be possible to provide more adequate data in 1960 for the use of income analysts and others not satisfied with the one-week approach.

Although the primary objective of the current labor-force concept is to provide a basis for satisfactory statistics on employment and unemployment, it does serve to give a good measure of current labor supply, strictly defined. It is therefore advantageous for use in a national census whose major purpose is to furnish data for individual areas, collected on a uniform basis. Further, the designation of the population in and out of the labor force on the basis of activity during a single week gives a simple, two-way classification that has great value in connection with the analysis of other characteristics of the population that are also current: marital status, family status, residence, school enrollment, etc. The longer the time period used, the greater the need for additional information on duration or intensity of economic activity, in order to identify those whose activity is too insignificant to be a factor in the analysis of variables. — Gertrude Bancroft, Bureau of the Census.

Applications of Demography — II. Public Administration and Business
Chairman: Howard G. Brunsman, U. S. Bureau of the Census

Population Research and the Urban Renewal Program

The urban renewal program has developed in response to the problems of slums and blight which threaten our cities. It has been estimated that 5,000,000 dwelling units throughout the nation need to be demolished, while another 15,000,000 are in need of conservation or rehabilitation.

The national legislation which has projected and sustained the urban renewal program includes the Housing Act of 1937, the Housing Act of 1949, the amendments to the Housing Act of 1949 in the Housing Act of 1954, and further amendments in 1955 and 1956.

As it stands today, one billion dollars have been appropriated for capital grants to localities to pay up to two-thirds the costs of slum clearance and redevelopment or rehabilitation-conservation projects. The localities operate under powers granted by state laws and local ordinances in areas which are deteriorating or have become slum and blighted. The treatment may be modified according to particular conditions: an area may be totally cleared, only rehabilitated, or partially cleared and partially rehabilitated; and clearance for the expansion of community facilities where needed is an allowable project activity.

In order to qualify for Federal assistance the localities must commit themselves to a "workable program" for the prevention as well as the elimination of slums. The elements of the workable program include: (1) necessary codes and ordinances; (2) a comprehensive community plan; (3) neighborhood analyses; (4) effective administrative organizations; (5) financial resources; (6) relocation housing; (7) citizen participation. As of February, 1957, $850,000,000 in capital-grant funds had been reserved for 438 projects in more than 243 localities.

Research provisions in the legislation include financial assistance to localities for demonstration research projects to improve urban-renewal techniques under Section 314, and authorization under Section

602 to the Housing and Home Finance Agency Administrator to carry out research necessary for the exercise of his responsibilities. Eighteen grants have been made under Section 314 and a proposed program of research projects under Section 602 has been published by the Administrator. Many of the studies in both programs would be of interest to population researchers.

Other and more extensive research possibilities stem from the emphasis on comprehensive planning as part of the workable program and the urban planning assistance program under Section 701, which offers grants on a dollar-for-dollar matching basis to metropolitan and regional planning agencies and to state agencies providing planning services to municipalities under 25,000 in population. These programs are stimulating considerable local planning activities. Research opportunities arise from these activities in two areas: (1) the basic data-gathering required for comprehensive planning for which local planning agencies frequently need outside help; and (2) the fundamental research which is needed to give planners a better understanding of how cities function. In both of these areas population researchers are needed.

Last, there are research opportunities in the planning of individual urban-renewal projects. In Chicago, the Chicago Community Inventory and the National Opinion Research Center of the University of Chicago have conducted and analyzed surveys of population and housing characteristics in urban-renewal project areas where rehabilitation and conservation are being emphasized. These surveys and the know-how of population researchers are essential to the planners in determining the needs that must be met by the urban-renewal plans. — Frank A. Kirk, Community Conservation Board of Chicago.

Population Research in Municipal Administration and Planning

Population data are used constantly in the planning and evaluating of municipal services and facilities. Population data have three dimensions: spatial, qualitative, and temporal. The spatial dimension deals with the geographic distribution of people, including the density of distribution. The qualitative dimension encompasses the various characteristics by which any particular group of people may be described. The temporal dimension relates to the past, present, and future of the population factors. These three dimensions are the what, where, and when of demography, and none of them exists independently of the others.

A set of municipal and metropolitan policies is needed which would take into consideration at least the following desiderata: (1) the total size of population which would contribute to the development of optimum social and economic conditions of existence for the people of the community; (2) the spatial distribution of population in the community that would permit a desirable overall distribution of community facilities; (3) the density patterns necessary to minimize congestion and provide for ready access to open space for the population; (4) the composition or quality of population to be encouraged (this would include policies on employment distribution, income distribution, age distribution, household characteristics); and (5) the timing of population change to be encouraged or discouraged in certain areas in order to provide for appropriate relationships to available community facilities and other community services and resources.

Many techniques already available to implement policy are not used in a coordinated or integrated way. These may be listed as follows: (1) comprehensive planning and zoning; (2) the provision of community

facilities, including schools, water, highways, and transit; (3) controls over the issuance of building permits; (4) the attraction or discouragement of certain types of industry that may hold, attract, or reduce the size of specific categories or classes of employment; (5) the location of industry, influencing the location of residential development; (6) differing tax policies across state or city lines, affecting residential locations; (7) the distribution of apartment sizes in publicly controlled housing development; (8) the selection of clearance sites and of highway routes affecting changes in population composition in an area; (9) rent control and public housing, which by maintaining rents at certain levels may hold people in areas where they could not otherwise afford to live; (10) tenant-selection policies and other restrictions which may influence the population composition of local areas; and (11) housing-code enforcement, which, by affecting the size of household and the rent structure of apartments in older areas, also influences the population composition of local areas. — Henry Cohen, City of New York.

Population Research and Market Analysis

Attention is focussed upon marketing problems that depend for solution, in whole or in part, upon population analysis. In general, these are problems concerned with the distribution and sale of consumer goods and services. Once such a problem has been defined and decisions have been made as to the kinds of facts and judgments that will be necessary for its solution, the market researcher almost always begins by conducting an orderly review of available secondary data. In some cases he may find that all of the requirements of the problem are met by such information. More often it is discovered that there are gaps in the information that must necessarily be filled by collection and analysis of primary data. Here are three situations where available population data are most apt to provide all, or nearly all, of the necessary information. These situations will be stated as questions.

1. "What is the market for our product?" This is a question that we are often asked by manufacturers who seek to identify their customers and potential customers in terms of who they are, where they are, and how much they might be expected to buy.

2. "What is the prospective market for this new product?" This question is often raised at that point in the development of a new product where ability to complete design and to manufacture is assured, but where a substantial additional commitment of funds is required.

3. "In the future, will our market increase, decrease, or remain about the same?" This takes the consultant squarely into the area of forecasting. In this area, market researchers probably rank among the most ardent consumers of population projections and forecasts.

Primary data collection, or field work, becomes involved under either or both of two sets of circumstances: (1) it may be necessary to fill gaps where data are not available from secondary sources, and (2) it may be necessary to establish significant relationships between available population data and consumer-buying behavior. Regardless of why it is undertaken, primary data collection involves, at the very outset, utilization of population data as a basis for survey sample design. Population data are also essential to proper analysis of the results of field data collection.

To the extent that market segmentation is recognized and utilized as a strategy in the planning of business operations, market analysts will find it necessary to become interested in finer distinctions between elements in the population. Furthermore, they will need to supplement avail-

able generalizations about group behavior within the population by developing more detailed insight into the "why" of small differences. Perhaps the time has come when we must begin to place relatively more emphasis upon attitudinal and behavioral arrays of population, not in lieu of, but in addition to, the arrays that are currently being made available. — Wendell R. Smith, Alderson and Sessions.

Fertility and Nuptiality Analysis
Chairman: Frank Lorimer, American University

The Nuptiality Table

The subject of this paper is the methodology of nuptiality analysis. Here attention is paid first to first marriages — the gross primary nuptiality table — and to its derivation from enumeration data in the absence of adequate registration data. Two current methods of summarizing the age distribution of first marriages are criticized, and an alternative procedure is proposed, based on the computation of intercensal celibate survival ratios. This procedure is applied to U. S. data for 1890-1955, and gross nuptiality measures are obtained both for males and for females, for cohorts and periods. An argument is presented on behalf of the period mean age at first marriage as a good approximation of the long-run cohort mean age at first marriage.

Attention is directed next to marital dissolution and remarriage, and to the use of registration or enumeration data for derivation of the gross auxiliary nuptiality table, for birth cohorts, marriage cohorts, divorce cohorts, and widowhood cohorts. Some neglected relationships between primary and auxiliary nuptiality are discussed. Finally the subject of the necessary compatibility of male and female nuptiality is introduced. Emphasis is placed on the fact that the nature of the modus vivendi between suitability for marriage and availability for marriage is an important and largely unsolved problem both for the methodologist and for the sociologist. — Norman Ryder, University of Wisconsin.

Child Spacing as Measured from the Ages of Children in the Household

Since the end of World War II, attempts have been made to assess the significance of the high postwar fertility rates in terms of the pattern of family growth and the ultimate size of completed families. These efforts have been handicapped, however, by the absence of adequate information on the intervals between marriage and childbearing and between successive births.

This paper concerns a project now nearing completion, which was undertaken cooperatively by the National Office of Vital Statistics and the Bureau of the Census, to develop by-product statistics on child spacing from census data regarding the enumerated population. This approach is experimental. However, if found effective, it provides a means of obtaining nationwide information on the subject for white and nonwhite women of childbearing age by social and economic status, on a current and continuous basis.

The following paragraphs describe the derivation of child-spacing data from the 1950 Census of Population and Housing. Essentially the same method was applied also to information obtained from the April 1954 Current Population Survey. Although independently derived, the spacing data from the two enumerations can be used to form a comparable time series for the war and postwar years.

In the course of the 1950 Census, information was obtained on the ages and present marital status of all persons in the household. Sample or supplementary questions provided information on the total number of children ever born alive to the mother, on whether she was married more than once, and on the number of years in her present marital status. From the total population for which such information was obtained, a selection was made of women who were 15 to 44 years of age, married once, living with husband, and all of whose children were living and present in the household. This is the group for which child-spacing data were developed.

The basic procedure involved the conversion of the cross-sectional enumerated information for this group to longitudinal data. In other words, the interrelated age information for the children and the mother was transformed to a year-of-birth and year-of-marriage basis, and recorded on a family card showing chronologically the wife's fertility status and experience in each year since marriage. Child-spacing information was then derived by differencing the years in which the successive events occurred.

The family fertility information has been tabulated to provide two basic series of data: (1) a frequency distribution of women by fertility-risk status as of the beginning of specified years, in terms of age, parity, and interval; and (2) a frequency distribution of women by their fertility experience during the year of observation.

Each of these tabulations can be used independently to obtain various measures of fertility experience. In addition, they can be combined to form age-parity-interval-specific annual birth rates. For this purpose the first tabulation provides the numerator, and the second the denominator.

The authors acknowledge and discuss briefly a number of limitations and qualifications associated with the data developed by the foregoing method. While a systematic evaluation has not yet been completed, preliminary examination indicates that this approach can provide useful data, and merits further study and development. A full report on child spacing, accompanied by detailed tables, will shortly be published by the National Office of Vital Statistics. — Joseph Schachter, National Office of Vital Statistics, and Wilson B. Grabill, U. S. Bureau of the Census.

Some Observations on the Populations of Mediterranean Islands

Some aspects are presented here of a study of the demography of Corsica, Sardinia, and the Balearic Islands, undertaken under a fellowship granted by the Social Science Research Council. The population of Corsica is declining, that of Sardinia is increasing, and that of the Balearics is nearly stationary. Such diversity reflects the varying effects of the economies of France, Italy, and Spain on these islands, and other historical causes. Study of this problem is facilitated by an analysis of population trends in small areas within each of these islands.

A suitable measure of fertility was found in the ratio of births to averages of marriages in the preceding years. The measure is affected by the impurities in the data and is inexact, but its approximate validity has been tested by corroborative calculations. Marital fertility so measured is linked to the crude birth rate as a multiplier of the crude marriage rate.

Mass emigration from Corsica began around 1890. Since then, the low marriage rate has been further depressed. Births per marriage de-

clined between 1890 and 1920 from over 4 to 2 1/2, and have been roughly constant since 1920. As emigration continues, this situation suggests indefinite population decline, foredooming efforts at economic rehabilitation. However, in the area of Bastia there has been a recent rise in fertility to 3 births per marriage, and there has also been a slight rise in urban marriage rates. The Bastia area may now be maintaining its population, thereby opening new possibilities, though depopulation continues in other parts of Corsica.

Growth of the dense Balearic population was partly checked by some emigration while fertility was high. But, without any reduction in the marriage rate, births per marriage have fallen from 3 1/2 to only 2 in the past 50 years and population is now almost stationary. The low fertility does not guarantee population replacement, but in the chief city births per marriage have stabilized at 2.3. The achievement of a fertility level consonant with stationary conditions is one of several adjustments which this flexible society has achieved in the face of changing economic needs.

Sardinia retains the traces of its prolonged economic and cultural isolation from the mainland; but a vigorous development program is now in progress. A very slow decline of the birth rate is chiefly the result of a continuous fall of the marriage rate. In South Sardinia, the marriage rate is still falling, while births per marriage average 4 1/2, as before. In North Sardinia, the fall of the already low marriage rate has slowed down, but since 1930 births per marriage have declined from 4 1/2 to 3 1/2. In cities and industrial areas fertility is as high as elsewhere in Sardinia. On the other hand, there are wide variations in fertility among various rural areas. High fertility is associated with high percentages of children not attending public schools. These two phenomena may reflect cultural inertia in a traditional-minded society faced with the necessity of adopting more modern patterns of living. As this is a fundamental problem of "underdeveloped" countries, Sardinia might be a rich field for sociological study. — John V. Grauman, Population Division, United Nations.

Applications of Demography — III. Urban-Rural and Regional Analysis
Chairman: Robert Burnight, University of Connecticut

The Farm Population as a Useful Demographic Concept

The utility of classifying the population by farm residence in the 1960 Census has been questioned. Farm residents are now only 13 per cent of the total population. Thus continuation of the tabulation detail given this population in the past must be justified on the basis of the demographic distinctiveness of farm people and the need for the data.

When farm people and other rural people are compared, it is found that they differ substantially in rate of population growth, sex ratio, fertility, mobility, household features, marital status, educational attainment, labor-force participation, income, and unemployment. For certain characteristics, data are available to compare the farm population with the open-country nonfarm population (village residents excluded). This comparison is important because the proposal has been made to merge the farm population with the rest of the open-country population for census purposes. Farm people are found to resemble their open-country neighbors more closely than village people in sex ratio, median age, and income. However, in mobility, unemployment, labor-force participation, certain marital characteristics, and institutional and armed-forces composition the farm population more closely resembles the vil-

lage residents. Thus segregation of the village population in a separate class would not justify lumping the rest of the rural population into one class, for this remainder is very heterogeneous. It is also noted that for income and employment status there are conceptual difficulties in comparing farm and nonfarm data. These result from differences in the extent and type of income in kind received by the two groups and from the fact that farm people are seldom technically unemployed.

Administrative needs for farm-population data have not diminished. Indeed, the far-reaching adjustments under way in farming have increased them. If one accepts the need for the data, the problem of procurement remains. The demographic concept now used is that of residence on farms as defined by the respondent. Some advantages of this approach are: (1) operationally, it is the simplest and cheapest inquiry; (2) it provides valuable comparability with the last census and historical series; (3) it defines as farm residents most persons whose residence is clearly agricultural and among marginal cases probably discriminates as meaningfully as any other feasible definition; and (4) farm residence, using this definition, has been placed on the vital-statistics certificates of 33 states in the last two years.

The disadvantages of the present definition seem to be these: (1) it does not provide a population identically relatable to statistics from the census of agriculture; (2) persons living under the same circumstances may construe differently the farm status of their home; (3) it is not easy to provide a precise meaning for the definition or to explain it to the public; and (4) it does not include as farm people those families dependent on farming who do not live on a farm. The alternatives proposed thus far are difficult to employ in the census of population or would restrict the scope to families primarily dependent on agriculture. Such restricted data are very useful but do not supplant the need for farm-population data more broadly defined. It is suggested that some economies might be obtained by publishing certain items for state economic areas only, rather than for counties. — Calvin L. Beale, U. S. Department of Agriculture.

Socio-economic Areas of Mexico for Use in Demographic Analysis

This paper is a report of a research project to establish a set of socio-economic areas for Mexico that could be used for computing statistical data for demographic studies. It is a part of a larger project to establish socio-economic areas for all of North and South America. A socio-economic area is an area that is homogeneous with respect to one or more characteristics. However, an area in which there is interdependence of territorial parts by division of labor or exchange of goods and services may also be called a socio-economic area. For the present study it is presumed that the homogeneous areas are more stable area units and more basic to demographic analysis and hence should be delimited first.

At the same time that, internationally, there is at present a clear tendency towards interdependence, it is being felt that some sort of realistic and rational approach to the basic problems of making international comparisons of human livelihood on smaller areas is absolutely necessary. It is believed that for the entire Western Hemisphere a system of boundaries for regions and subregions can be delineated in such a way that international comparisons can be made, and that the regional system can be used to chart future economic developments within each nation and within the Hemisphere as a whole.

From the standpoint of population studies the substitution of a more homogeneous Hemisphere system of regions and subregions for the

political-administrative divisions (for the purposes of publishing statistics) would result in the following advantages. (a) Meaningful comparison of the many different populations of the Hemisphere would be facilitated. (b) Areas of the Hemisphere's major population problems would be accurately delimited. The nature of the problems and their causes and needed cures could be more easily understood. (c) Programs for alleviating population problems could be more sensibly planned. (d) A more intensive analytical demography for the Americas could be initiated. (e) American urbanism would become more comprehensible. (f) International discussion of common population problems and exchange of programs for remedy would be encouraged. (g) A realistic basis for discovering more about the interrelationships between population and resources would be established. (h) The study of population distribution and of migration would be greatly facilitated.

The procedure actually being used to delimit the socio-economic areas of Mexico — as a part of the larger project sponsored by the Population Council — involves the following steps: (a) review of all available descriptive literature; (b) acceptance of Ingeniero Emilio Alanís Patiño's delineation of Mexico's agricultural-economic districts as a tentative delimitation of socio-economic areas; (c) reexamination at the region and zone level of that tentative delimitation using 1950 Census data and application of formal tests of homogeneity to determine the final classification of the smaller homogeneous areas in the larger ones; (d) superimposing of metropolitan areas on the general scheme (thirteen metropolitan agglomerates have already been identified); (e) transmittal of the completed tentative delimitation to national statistical agencies and to experts in Mexico who may help in suggesting revisions.

The complete proposed system of socio-economic areas of Mexico, when finished, will include: (a) socio-economic areas (economic-agricultural districts) following municipio boundaries; (b) regions or groupings of socio-economic areas similar in most important characteristics, ignoring state boundaries when necessary; (c) zones or grouping of contiguous regions that share a few but very important geographic and economic traits; (d) metropolitan socio-economic areas superimposed on the general homogeneous socio-economic areas scheme. — Salustiano del Campo, University of Madrid.

Micro-demography

Micro-demography is the study of the growth, distribution, and redistribution of the population within a community, state economic area, or other local area. This includes both numerical and compositional aspects, and is performed by using meaningful subdivisions of the community or local area. This paper tries to present a systematic picture of this field and its rich opportunities.

The populations with which micro-demography deals have the following characteristics. (a) They are not complete socio-economic units, but are arbitrarily delimited segments of a larger community or local area. (b) For purposes of demographic bookkeeping, these are "open" populations; migrants may arrive and depart freely. (c) On the whole, these smaller populations tend to be much more homogeneous than the community population from which they are taken. (d) As a consequence of the above, these small units tend to be more or less unique, and to exhibit a great deal of inter-area heterogeneity. (e) Each of these areas tends to have a more or less internally homogeneous and externally unique set of environmental circumstances.

Why should demographers have any research interests at this level? At least four reasons can be given. (a) Within and among these small

population segments nature is performing a host of population experiments for us. From the viewpoint of micro-demography, a population change can be looked upon as being analogous to a special type of chemical experiment that has been performed many times upon small batches of ingredients, each batch exhibiting some unique combination of elements. By relating the variations in the composition of the batches to the variations in the results, we can gain information that would be lost completely if we lumped all batches together. (b) Micro-demography is the only practicable way to carry out the analysis of deviant cases. An intensive analysis of the characteristics and situations of communities in which these deviant cases are located could do much to refine our theories. (c) Subdividing a community into more or less homogeneous areas, and making use of these areas as "building blocks" with which to study community structure and functioning is one of the most widely accepted and fruitful ways to study the human community. A large proportion of what is known as "human ecology" consists of studies of community structure of this type, making use of demographic statistics in conjunction with other data. (d) Much of the research undertaken in this branch of demography has a practical application as its principal aim.

The remainder of this paper is devoted to elaborating a 9-point "model" program for micro-demographic analysis under the headings: general planning; urban renewal and redevelopment; housing programs — new construction, code enforcement, market analysis; studies to locate or readjust the operation of local community facilities; planning for traffic, transportation, parking; health and welfare; municipal government and administration; market analysis and shopping centers; zoning, land-use planning, enforcement of fire, building, and zoning ordinances. In the matter of desirable precision, the writer would like to propose the following principle. The "ideal" level of precision is one in which there is zero bias and in which twice the coefficient of variation for any proportion that comprises 10 per cent or more of the subpopulation that is a "total" column in a table should not be more than 10 per cent. If bias is present, sampling should not be allowed until the combined bias and sampling error is no larger than the allowable sample error. — Donald J. Bogue, University of Chicago. [Editor's abstract.]

Recent Developments in Morbidity and Mortality Analysis
Chairman: Mortimer Spiegelman, Metropolitan Life Insurance Co.

Health Surveys and Demography

The recent resurgence of survey research pertaining to health makes it opportune to assess the contributions of past health surveys to demography. There have been few such contributions. In most studies where health and conventional demographic variables have been related to each other, health has been considered as the dependent variable while social characteristics have been treated as independent variables. The converse view of the direction of causality could be held with equal propriety.

The essentially "applied" character of most health surveys is largely responsible for the absence of concrete contributions to demographic knowledge. The primary objective of most health surveys is the collection of information useful in the solution of practical public health problems. This fact leads to the aforementioned analytic bias — the failure to take adequate account of the influence of health status on social characteristics while stressing the socio-environmental basis of illness.

The analytic bias also arises from the tendency to take a static view of demographic characteristics. This is likely to occur when the

data are cross-sectional or cover only a short time interval. In the few studies where changes in economic characteristics over time were measured, the survey analysts were forced to give serious consideration to the fact that ill-health results in lower economic status.

Another basis for our inability to measure the consequences of illness is the atomistic character of the analytic units. The individual episode of illness or the morbid condition is often used as the numerator of rates. Since a person's social characteristics are functions of his total health situation, the atomistic unit greatly attenuates any relation that might exist. It might also be suggested that even the person is too small a unit for such analysis; it may well be that for studies of the consequences of ill-health, some function of the health condition of all the members of the family is the most suitable variable.

The foregoing refers essentially to the absence of cross-sectional context. The absence of longitudinal context is just as great a handicap. Most health surveys deal only with the person's health status during a relatively short time period. Without knowledge of the person's prior health situation, it is difficult to assess the significance of his health during the survey period. If it is unknown whether the individual's health is now, in general, better, about the same, or worse than it was in the past, it is impossible to determine the consequences for social characteristics of changes in health status.

Although it is clear that longitudinal studies have innumerable advantages over cross-sectional studies for the analysis of health as an independent variable, the current trend in health surveys is toward the cross-sectional approach. This is due to the high cost of doing longitudinal studies, the need for estimates of the incidence and prevalence of specific conditions subject to small sampling error, and some recent methodological discoveries concerning panel effect.

A few of the demographic variables which may be affected by the health status of the individual or his family are: income, occupation, labor-force participation, migration status, and educational attainment. Even though the bulk of the variation in these variables is due to factors other than health status, the consequences of ill-health are still probably great enough to warrant their examination. Both public health research and demography would benefit if data could be gathered which would serve the objectives of both disciplines simultaneously. — Jacob J. Feldman, National Opinion Research Center, University of Chicago.

The National Health Survey Program

The National Health Survey Program, authorized by the 84th Congress, is a new statistical activity of the U. S. Public Health Service, the purpose of which is to collect factual information on the health of the American people related to demographic, social, and economic factors.

The Program has three major parts. One part consists of a continuing nationwide sample household survey. Another is a series of special studies developing health statistics from sources other than household surveys. The third part of the Program comprises various studies relating to methodology in the general field of health statistics.

Several projects have been started in the special and methodological parts of the Program, but major attention has been given to the early inauguration of the sample household survey. The plan for the household survey has several unique features. It is expected that the survey will be carried on continuously at the rate of about 3,000 households each month. Since the major interest is in medical, demographic,

and social variables which change slowly, it will be possible to accumulate information over varying periods of time in order to obtain samples sufficiently large for desired tabulations. In addition, the continuing character of the household survey makes it possible to revise periodically the basic questionnaire, so as to keep it in line with changing health problems. It is also planned to add supplemental questions from time to time to obtain information on special topics.

Administratively, the household survey will be a cooperative project by the Public Health Service and the U. S. Census Bureau since the Census Bureau will act as the collecting agent for the survey, and the staff of that agency will have many important responsibilities for the survey design, the field work, and the compilation of the results.

With regard to timing, the collection of data, based on the initial questionnaire form, began on a nationwide basis in May 1957. Tabulations of some of the first returns will not be available until late this year.

As a source of medical information, the household-survey method has some obvious limitations. But the effect of these limitations can be studied and the results calibrated by special studies. As a source of health data related to pertinent demographic and social factors, the survey technique is the only appropriate method.

The Survey Program offers an opportunity for a serious and sustained effort to fill major gaps in existing medical and demographic statistics. After several years a much more adequate range and type of data will be available for analysis. — Forrest E. Linder, U. S. Public Health Service.

Recent Demographic Analysis of Mortality

The rapid growth of the population living in the suburbs of large cities has made increasingly difficult the classification of mortality statistics by size of community. There is evidence of fairly substantial errors in the classification by place of residence of the deaths of residents of the densely populated built-up area surrounding most large cities. Current practices in tabulating mortality statistics require that deaths of residents of the built-up area around a city be classified according to the population-size group of the built-up area rather than according to the size of the central city. Frequently this results in the classification of such deaths as rural while the deaths of residents of the central city are classified as urban.

An alternative to the present rural-urban classification used in the tabulation of mortality statistics is the use of metropolitan and non-metropolitan counties as defined by the Bureau of the Census. Deaths occurring in the United States from 1949 to 1951 inclusive have been retabulated by age, sex, color, and cause for each metropolitan area. Statistics are available for the entire metropolitan area, for the county or counties in which the central city is located, and for other metropolitan counties, if any. The metropolitan counties are grouped by economic subregions. For each subregion, data are available for (a) metropolitan counties with a central city, (b) metropolitan counties without a central city, and (c) non-metropolitan counties.

The age-adjusted death rate for metropolitan counties is higher than that for non-metropolitan counties for each of the four sex-color groups. For white males and females and for nonwhite males, the highest rates are found in the metropolitan counties with a central city and the lowest rates in non-metropolitan counties, with the rates for metropolitan counties without a central city occupying an intermediate position.

This relative ranking of death rates for all ages combined does not hold true for the rates for the separate age groups. From birth until 35 years of age, the highest mortality rates are found in the non-metropolitan counties. Conversely between 45 and 75 years of age the highest rates are found in the metropolitan counties with a central city. This difference exists for each of the four sex-color groups. When the comparison is restricted to the two types of metropolitan counties, the age-specific death rates in metropolitan counties with a central city are consistently higher than those in metropolitan counties without a central city for each of the sex-color groups.

The most striking feature of the geographic variation in mortality rates is the generally low rate for white females. In only two of the 119 subregions does the age-adjusted rate for white females exceed 9.0 per 1,000; the rates for these subregions are 9.1 and 9.8 per 1,000. Except for these, the lowest rate for white males, 8.9 per 1,000, is larger than the highest rate for white females. Without exception, the lowest rate for nonwhite males, 10.4 per 1,000, is greater than the largest rate for white females. Although there is more overlapping in the frequency distributions of the death rates for white and nonwhite females, in only six subregions is the rate for nonwhite females lower than the largest rate for white females. — Harold F. Dorn, National Institutes of Health.

Dinner Meeting

Rupert B. Vance, University of North Carolina, presiding

Presidential Address: The Aesthetics of Population

Under the title, the aesthetics of population, I shall attempt to deal with certain of the interrelations obtaining between population movements, on the one hand, and the content of the aesthetic component of our system of values, on the other. Inasmuch as these interrelations often manifest themselves in economic form, a considerable part of my address has to do with such economic manifestations.

Professionalization and aesthetic value. My concern here is not with the beautiful as such, but with the disregard of beauty, in popular and technical writings about population — and they must be voluminous — into which beauty might properly enter as a subject of consideration. This disregard is largely the outcome of professionalization. Progress consequent upon high specialization exacts its price. It results in a superficial treatment of all aspects of life except those which fall within the groove of the specialist's "science." It results also in a virtual abdication, by the scientific elite, to politicians, journalists, and mere data-manipulators, of the task of interpreting, coordinating, and applying the findings of science, be it demography or something else. A by-product is the current neglect of aesthetic value in writings and policies having to do with population. This outcome might have been avoided had these same forces of specialization produced a really firm critical elite. Of this elite, however, there is little sign.

Adequacy of measures of impact of population growth. Indices currently in use neglect aesthetic values and imperfectly represent the consequences and the concomitants of population growth. By way of example, gross and net national product, considered as measures of the impact of population growth, treat certain costs as if they represented income and disregard effects consequent upon decline in the amount of free resources available per head. One may argue that the movement of physical assets per head affords a better measure of the impact of pop-

ulation growth upon welfare than does the movement of net national product per head. This measure is not perfect, of course.

Current assessment of impact of population growth on well-being. Some of the assessments currently being made of the impact of population growth upon man's well-being in varying degree disregard aesthetic and related values, and fail to utilize preference scales which are really suited to measure and assess the impact of the growth and the spread of population. There is a disposition, even on the part of Malthus's critics, to accept his main posing of the population question. It is possible that this way of putting the question has led to misinterpretation of such correlation as may at times seem to exist between the rate of population growth and the rate of increase of per capita income. For Kuznets's statistical findings bear out theoretical reasoning that, because of the divers relationships and intervening variables present, such correlations as exist are without much if any significance. So long as population policy is not based upon optimum theory and upon a predominance of consumer sovereignty and freedom of choice, population growth is likely to be excessive, at least on economic and "welfare" grounds.

Interrelation of aesthetic value and population growth. The overworked stork is the enemy of the beautiful because satisfaction of the demands of the stork absorbs resources which might otherwise have been devoted to satisfying the criteria of beauty and to meeting the requirements of excellence. Population growth also accelerates the dissipation of resources and intensifies many kinds of scarcity (e.g. of inorganic substances of use to man, water, land, and suitably situated space). We have given so much rein to the stork because we do not prize the beautiful. Ethical and aesthetic values play but a small part in ordering the behavior of many of those upon whom largely depends the aggregate growth, demographic as well as economic, of the American Leviathan. Adverse effects of changes in the composition of gross and net national product, whilst expressible in economic terms, may also be reduced to terms of aesthetic debasement. Although some of these adverse effects accompany income growth even in the absence of population growth, they are very greatly accentuated by population growth. Were there greater emphasis upon questions stressed by exponents of optimum theory, and were their modes of thought more common, adequate attention might be given to the role of aesthetic values in economic-demographic development. It would then be recognized that the aesthetic component might be an important element in a system of values, in which event this element might be both an important determinant of population growth and a variable modifiable through population growth. Eugenic programs are not likely to prove effective in the face of a declension in popular emphasis upon excellence and aesthetic values. — Joseph J. Spengler, Duke University. [Editor's abstract. The complete text appears in the Population Bulletin of the Population Reference Bureau, June, 1957.]

The Size, Composition, and Distribution of the U. S. Population in 1975

Chairman: Frank W. Notestein, Office of Population Research, Princeton University

The Census Bureau Projections of the Size, and the Age and Sex Composition of the Population of the United States in 1975

The Census Bureau projections of the population to 1975 are based on a set of stated assumptions. Their value for purposes of forecasting the population at a future date depends entirely on the extent to which future developments correspond to the assumptions as stated. While the

assumptions appear to be reasonable statements of possible developments, they do not attempt to bracket the full range of developments which might occur and they do not provide a range with specified probability.

The projections as published in Current Population Reports, P-25, No. 123, show separately the population aged 20 and over and the population under 20. The former consists of persons already living; and that estimate is subject to fluctuations arising from immigration and mortality. For the population under 20 in 1975 a number of projections have been prepared, ranging from 70,607,000 to 92,163,000, depending on the fertility assumptions which are made. The total population estimates for 1975 are between 206,907,000 and 228,463,000.

Changes within the 20 years prior to 1975 will vary substantially for the individual age groups, depending on the time when the several age groups were born. For the age groups already living in 1955 the largest increase in absolute numbers is for those 20 to 24 years old, with the group 25 to 29 next. Decreases are expected among persons 35 to 39 and 40 to 44, and small increases are expected for the age groups immediately preceding and following these. Increases are also expected among older persons, particularly among those 75 and over. [See front cover chart.] — Conrad Taeuber, U. S. Bureau of the Census.

The Color and Nativity Composition in 1975

Let us look first at the nativity composition of the U. S. population in 1975. From 1910 to 1950 the percentage of foreign born decreased from 14.5 per cent to about 6.5 per cent. Looking at the age distribution of the present foreign born population and the immigration restrictions, we may say that the proportion of foreign born will continue to decrease, probably being in the order of 3 per cent in 1975. Immigration from Latin America (nonquota immigration) could conceivably affect this trend, but this is unlikely. In 1975, however, immigrants from Latin America will almost certainly form a larger proportion of the foreign born than at present.

The color composition of the U. S. population is more difficult to project. The expected improvement in coverage by the Census would doubtless indicate an increasing proportion of nonwhites if all other factors were to have no effect. A recent Census release indicates that from 1950 to 1956 the rate of increase for nonwhites was half again as high as for whites. Part of this increase is probably attributable to improved coverage in the more recent period, though all of the difference cannot be attributed to this factor. While an increase in proportion of nonwhites in the population in 1975 can be expected, for the nation as a whole it will not be radical, perhaps up to 12 per cent. The nonwhite population stands to gain considerably from improvement in death rates, since their mortality rates are well above the rates for whites. (Underenumeration of the nonwhite population biases this comparison in many computations.) Nonwhites have not shared in the "baby boom" to quite the extent of whites, since their birth rates were already relatively high. As nonwhites continue to shift urbanward, it can be expected that their birth rates will decrease. The net effect of these trends will probably be a slight increase in per cent nonwhite.

More important than the slight increase in the proportion of nonwhites nationally will be the major changes that can be expected to occur in the proportion nonwhite in selected areas, that is the changing pattern of distribution of the nonwhite population. In 1900, 90 per cent of the nonwhite population was in the Census South. In 1950 this percentage was 68 per cent and the rate of change is accelerating. It is certain that by

1975 considerably more than 50 per cent of the nonwhites will be living outside the South, with major concentrations continuing in the urban areas of the Northeast and North-Central states and California. — Daniel O. Price, University of North Carolina.

Future Distribution of the Population of the United States by Regions and Type of Residence

Since internal migration, far more than natural increase, is responsible for the variability in growth rates among regions, it is important to give careful consideration to this component and the factors affecting it in making population projections by regions. Changes in the economic structure and in the relative economic condition of the various regions are basic here, since long-distance migration is to a large degree a product of regional differences in job opportunities. Various persistent factors keep job opportunities from being in perfect balance with the numbers and kinds of available workers in each labor market area; and internal migration serves to reduce the imbalance. Hence, redistribution of the nation's population will continue. Since, however, new patterns of industrial location — not easily predictable — are possible as a result of such technological developments as automation and the use of atomic energy in industry, the pattern of population redistribution will continue unpredictable.

The Bureau of the Census used a somewhat simpler method than economic analysis in preparing its new projections for states and geographic divisions to 1970, now being completed for publication. Four series of projections were prepared by the cohort-survival method, each employing a different combination of assumptions regarding future fertility and internal migration. For migration, average annual migration for certain past periods, namely, .1930-55, 1940-55, and 1950-55 combined with 1940-55, was used. According to these projections, all geographic divisions will increase in population between now and 1970, with the Pacific and Mountain states showing the largest rate of increase. The growth rates for the remaining divisions would then order themselves somewhat as follows: East North Central, South Atlantic, Middle Atlantic, West South Central, New England, West North Central, and East South Central. With regard to their shares of the national totals, the divisions of the Northeast region and the South region will lose some ground, while, in the North-Central region, the East-North-Central division will gain and the West-North-Central will lose. Of course, the divisions of the West are expected to contain a substantially larger share of the total. The Pacific states would increase from 10.5 per cent in 1955 to 12 per cent or more in 1970. There will also be a further concentration of the population in our largest states. For example, in 1955, 53.9 per cent of our population lived in the 10 largest states; by 1970 the per cent would go up to about 56.

Several series of illustrative projections of the population in 1965, by type of residence, were prepared by the ratio method. The base periods determining the rate of change in the ratios during the initial year of the projection period were 1930-56 and 1940-56. According to these projections, SMA population, even without allowance for changes in the 1950 SMA areas, would increase 16 to 23 per cent between 1956 and 1965. The counties outside metropolitan areas would grow 6 to 10 per cent, or possibly as little as 2 per cent. As a result, there will be an even greater concentration of the population in a relatively small proportion of counties. In 1956 about 58.6 per cent of our population was living in a metropolitan area, but by 1965, even without allowance for increase in SMA area, the proportion should exceed 60 per cent and may

reach 62 per cent. The projections imply a continuing suburbanization of metropolitan population: central-city population is seen to grow 9 to 13 per cent between 1956 and 1965, while the population outside central cities in SMA's may increase by one-fourth to one-third. A very wide difference between the growth rates of the "suburban" areas and the non-metropolitan counties is also seen, amounting to at least 3 to 1 per cent. Because of the great need for area reclassification, useful projections of urban and rural population cannot be developed on a comparable basis. — Jacob S. Siegel, U. S. Bureau of the Census.

The Size and Distribution of Cities in 1975

By 1975 a population larger than that which inhabitated the continental United States in 1940 will be residing in approximately 200 major metropolitan centers. A conservative guess would estimate the population in standard metropolitan areas of 100,000 or more to be 136 to 137 million by 1975. If the proportion in large metropolitan communities increases to 66 per cent, and the total population increases to 228 million, the population living in the 200 or so largest standard metropolitan areas in 1975 may be slightly larger than the total population of the United States in 1950. In any event, it is obvious that metropolitan communities are going to feel ever more severely the continuing pressure of our growing national population.

The population pressures will not be uniform throughout the standard metropolitan area. The differential in central city and ring or suburban growth is likely to be maintained. On the average, 42 per cent of the population in the principal standard metropolitan areas were residing outside the central-city boundaries in 1950 and some 58 per cent were residing in the central city. By 1975, if current trends hold, on the average less than 50 per cent of standard metropolitan populations will be residing in the central city.

The consequences of suburbanization will, of course, become more manifest. The modern suburban shopping center is merely an initial development in the ecological adjustment of commercial enterprises. As the economic survival value of decentralization becomes clear to the retail and service industries, the role played by the central business district will more and more become that of providing highly specialized goods and services to a rapidly expanding suburban territory.

The mean size of standard metropolitan areas of 100,000 or more in 1950 was roughly 580,000. By 1975 it is probable that they will have an average population between 650,000 and 700,000. The increases in population size that will take place among individual metropolitan areas will be subject to great variation.

Some idea of the variation in metropolitan growth that may be expected in the coming quarter of a century can be seen in the regional differences in metropolitan growth. In 1950 the Northeast United States contained 38 per cent of the total population living in metropolitan centers over 100,000. By 1975 it will probably have not over 32 per cent. In 1900 today's principal standard metropolitan areas of the South and West regions together contained one-fifth of the total metropolitan population. In 1975 they may contain over two-fifths. Because of the differential in regional metropolitan growth, there will occur a more even regional distribution of urban populations.

The metropolitan population of the South in 1975 will probably be double what it was in 1950. Needless to say, the industrial awakening there will have far-reaching effects. — Ray P. Cuzzort, Population Research and Training Center, University of Chicago.

The Labor Force in 1975

This forecast of the labor force and a few of its characteristics in 1975 represents one man's reading of the statistical tea leaves. Some of the figures used here have been gleaned from scholarly studies or official reports. But the conclusions and interpretations in this quick survey rest basically on intuitive evaluation and personal predispositions. The opinions expressed are those of the writer and not necessarily those of the Bureau of the Census.

The United States labor force, as measured by present-day Current Population Survey criteria, will include an average of approximately 94 million workers in 1975. This labor force will be younger than today's. The age structure will show relatively more workers under 25 years of age (23 vs. 18 per cent) and comparatively fewer between 25 and 44 years (41 vs. 46 per cent). The 45-and-over component will be at about the same proportionate level (36 per cent).

Between now and 1975, women workers will increase by one-half, men by one-quarter. Thus, in 1975, women will constitute around 35 per cent of our working population compared with the current 31 per cent. The rise in the female proportion will involve the addition of large numbers of married women, many with young children and many over 45. By working, these women will of course contribute to the national product. However, their contribution will be proportionately less than their increase in numbers, since married women tend to move into and out of the labor market and from one job to another more frequently than most other workers. Also, many of these women will be available for work only on a part-time or a part-year basis.

In terms of broad occupational composition, the one truly drastic difference between the current and 1975 labor force will concern the farm workers. The next report in this session is focused on this group. However, I cannot refrain from mentioning my fascination with the society-wide implications of a labor force wherein farmers are only about as numerous as truck drivers. And this is a situation which in my judgment will exist in 1975; that is, again using Current Population Survey criteria, each of these two occupations will number around 2 3/4 million at that time.

I do not believe that we will have a 4-day week or 6-hour day in 1975. The standard work-week will in my opinion be 35 hours. Workers and their families will continue to want a sharply rising level of living much too strongly to permit the gains in productivity to be vitiated by a revolutionary cut in hours-input. This demand for more real income will also be reflected in a growing tendency for full-time workers to hold a part-time, second job. The 35-hour basic week will make this more feasible for the worker personally and will simultaneously make available more part-time, fill-in jobs. — David L. Kaplan, U. S. Bureau of the Census.

The Farm Population and the Agricultural Labor Force in 1975

The wall chart displayed shows the annual trend of the farm population, 1910-1956, with projections to 1975. Projection III, by Professor John D. Black in 1955, projects the farm population to decline to 20 million by 1975. From 1910 to 1956 the farm population declined from 32 million to a little over 22 million. Projections I and II are unofficial projections which we made on the assumption of a continuation of the average annual percentage rate of decline experienced during the 40-year period 1916-56 (Projection I), and alternatively the average annual percent-

age rate observed during the period 1933-56. The latter two projections would imply a farm population in 1975 of 16.3 million to 18.6 million. During the period 1916-56, the average annual percentage rate of decline was 0.94 per cent compared with 1.63 per cent in the period 1933-56.

The record of agricultural employment is shown on the same chart annually, 1929-56, with projections to 1975. Projection III, by Professor Black, postulates a level of 5 million by 1975, compared with 6.6 million in 1956 and 10 1/2 million in 1929. For the period 1929-56 agricultural employment decreased an average of 1.7 per cent per year, with decreases of 2.3 and 2.5 per cent for the past 16 years and the past decade, respectively. Because these historical rates of decline in agricultural employment appeared to me to be sharper than those which may be expected to continue to 1975, the Projections I and II shown on this chart have utilized another approach.

An examination of the ratio of agricultural employment to farm population during the 17-year period 1929-56 shows only small changes in this ratio throughout the period, except for the abnormal World War II situation in 1943-45. From the early 'thirties through 1942, the ratio of agricultural employment to total farm population remained at approximately 31 per cent and in the post-World War II years edged downward to 28 per cent. In 1952, and since then, this ratio has edged upward again to 29 or 30 per cent. The relative stability in this ratio has led me to assume little change between now and 1975, and it forms the basis for Projections I and II. These assume a ratio of 28 per cent for 1975 and applied to the farm-population level shown by Projections I and II imply an agricultural employment level of 4.6 to 5.2 million.

The second wall chart translates the information shown in the first chart into the percentages that the farm population forms of the total population and that the agricultural employment forms of the total labor force. The farm population has decreased from 35 per cent of the total population in 1910 to 13.3 per cent in 1956, with the several projections carrying that percentage down to a range of 7 to 9 1/2 per cent. These projected percentages have been obtained by computing the farm population as a per cent of the Census Bureau's AA population level in Projections I and II.

The lower line of the chart traces the course of agricultural employment as a percentage of the nation's total labor force. In 1956 only 9.4 per cent were employed in agriculture. The three projections shown have a very narrow range which by 1975 may mean an agricultural working force of only 5 to 6 per cent of the total labor force, including the Armed Forces (labor force adjusted to AA population base).

Some people have projected an agricultural employment level lower than that shown on this chart. The most extreme projection, by Professor Colin Clark, postulated an agricultural employment level in the United States by 1975 of only 2 million, which to him meant that the United States will have to import by 1975 half of its food requirements. This projection and conclusion of Professor Clark has been vigorously challenged. — Louis J. Ducoff, U. S. Department of Agriculture.

The Journey to Work in 1975

This discussion is confined to commuting in metropolitan areas, and assumes an expanding peacetime economy. There are two outstanding trends in commuting: (1) the average distance of the journey to work is increasing; (2) progressively higher proportions of work-trips are made by private auto. Both of these aspects of commuting (the length of the work-trip and the method of travel utilized) are functions of the spac-

ing of homes and workplaces, and of the arrangement of available routes connecting these two sites. Future patterns of commuting can be more intelligently assessed if we consider whether or not current trends in the spatial arrangements of homes, workplaces, and routes will continue in the same direction.

Despite certain counter-pressures toward "re-centralization," there is no strong evidence that the outward thrust of residential population will cease in the near future. It also seems reasonable to expect that the current decentralization of workplaces (factories, stores, and offices) will continue for some time. With decreased concentration of workplaces, simple geometric reasoning points to more lateral movement, in complicated cross-currents of commuter streams, with a longer average trip to work. This more diffuse pattern of workplaces also reduces the chances for economical operation of mass transit facilities, so that the auto will become even more important, except for commuting to certain central workplaces.

Routes obviously affect the location of both homes and workplaces, and indirectly affect commuting patterns. Construction of new roads and streets (including the current federal program) will permit further dispersal of homes and workplaces, and encourage more surface movement by auto. With respect to non-surface routes, the problems are mainly economic. Underground and overhead transit lines are enormously expensive to construct and operate. Similarly, commuting by helicopter will probably be well beyond the means of most workers during the foreseeable future. Thus for all but a minority, the auto will remain the major method of movement to and from work.

A few conclusions may be drawn. The first postwar decade has already witnessed a delayed reaction to the auto. The removal of depression and wartime restrictions on the construction of residences, workplaces, and routes has initiated a massive readjustment to a new scale of distance. Although it involves enormous costs, this readjustment will probably continue until 1975 and well beyond, if past experience with analogous technological revolutions provides any guide to the future.

If our assumption of increased lateral movement with further decentralization is correct, the continuation of current trends would imply even longer work-trips, made even more frequently by auto, until some new equilibrium is reached. Systematic planning would permit the emergence of more or less self-contained "satellite cities" in which homes are within easy access of workplaces; commuting time and distance would be reduced and more people could walk to work. As yet, however, there has been little disposition on the part of American business, industry, or government to undertake the comprehensive planning required. The reason may lie in the fact that the immediate costs of commuting — in time, money, and energy — are borne by the individual worker. But the absence of adequate data and the lack of conceptual guide-lines also operate to inhibit planning. This is a task for demographers, ecologists, and urban sociologists. — Leo F. Schnore, Michigan State University.

School and College Enrollment in 1975

In discussing the nation's population in 1975, Taeuber has said that "the major element of uncertainty in the projections is in relation to the number of persons born between 1955 and 1975." There has been little change since the 'twenties in the relationship of the number of pupils in kindergarten through the 8th grade to the number of children aged 5 to 13 years.

It is expected that the future will see a larger proportion, 80 to

85 per cent in 1975, of the population 14 to 17 years of age attending high school. In the fall of 1955, 74 per cent of our 14-to-17-year-olds were enrolled in grades 9 to 12. It is assumed that contributing to a greater tendency to complete high school will be a continued economic upgrading of the nation's families, with a higher proportion of occupations demanding skills gained most readily through high school and post-high school education. At the same time, it is difficult to assess future changes in one of the more important roles of the educational system: that of holding young people out of the labor market until job opportunities exist for new workers. It appears likely that this "absorptive" function with respect to the labor force will be shifted increasingly to post-high school education, resulting in a more stable ratio of enrollment to population for boys of high school age.

The Census Bureau has defined with relative certainty the size of 1975's college age group, but there is a high degree of uncertainty in relation to the proportion that will be enrolled in college. The Office of Education reports that in the fall of 1955 college enrollment totaled 2 3/4 million. This is the equivalent of 1 student for every 5 civilians aged 18 to 24 years. Since 1939, the proportion of 18-to-24-year-olds in college appears to have increased about one and one-half times. What will determine 1975's college enrollment? In part, the population base; but more important determinants will be the types of institutions available, their function, number, and location. Every type of college facility will feel the impact of large-scale enrollment gains, but the greatest increases may well be registered by the nation's junior colleges.

We may summarize enrollment changes between 1955 and 1975 as follows: according to the C population projections and patterns of minimum change from present ratios of enrollment to population, the number of elementary pupils will increase from 27 million to 30 1/2 million, high schools will show a gain from 8 million pupils in 1955 to 12 1/2 million in 1975, and the number of college students will grow from 2 3/4 million to 7 1/3 million. The AA population projections combined with assumed higher rates of change in enrollment-to-population ratios point to about 39 1/2 million elementary pupils, a 20-year growth of 12 1/2 million. High schools will gain almost 8 million to a total of 15 3/4 million pupils, and college enrollment will triple, reaching 9 million by 1975.

Implicit in these projections is the assumption that the teachers and the facilities will be available, so that these millions will be housed and taught. For the present, we must assume that, though these problems will prove painful at times — for the student, the parent, the educator, and certainly the taxpayer — we shall somehow manage to solve them. — Carl M. Frisén, Department of Finance, State of California. [Editor's abstract.]

The Coming Marriage and Housing Boom

The number of marriages in the United States has stabilized at about 1.5 million during the last few years, after the postwar peak of 2.3 million in 1946. This leveling off has been attributed to a shortage of young persons of marriageable age and to the unusually large number of marriages in the immediate postwar years which may have involved "borrowing from the future." First marriages are now taking place among the cohorts born during the 1930's when the baby crop was very lean. Assuming no change in the propensity of adults to marry, marriages may fall a little below their present level of 1.6 million per year by 1960. The many births in the postwar period mean that there will be a great increase in the number of persons between 18 and 24 years of age, the age group among which most first marriages take place. This increase will be re-

flected by a rise in marriages to 1.7 million per year by 1965, to 1.9 million per year by 1970, and to 2.1 million by 1975.

The probable trend of the average age at first marriage is uncertain. As calculated from the projections of marital status prepared by the Bureau of the Census, the median age at first marriage for women may remain at about 20.2 years until 1975 or it may decline to about 19.7 years. The possible change of one-half year may be put into proper perspective by recalling that during the 50 years between 1890 and 1940 the change was of the same magnitude, going from 22.0 years to 21.5 years. During the 1940's, the median fell one year or more, and a possible further decline of one-half year is noteworthy.

The marriage boom will very likely have a significant effect on household formation. Most households in the United States contain man and wife, and the rapid expansion expected in the number of married couples should create a very substantial potential housing demand. Between 1955 and 1975, the number of households containing husband and wife may increase 10 to 13 million. The total number of such units in 1975 may range between 46.5 million and 49.5 million. In addition, demand for housing should come from other types of family units (other primary families and primary individuals) which may also increase substantially. As a result, the total number of households in 1975 may range between 61.6 and 67.4 million, as compared with 47.8 million in 1955. The smaller total in 1975 would be brought about merely by population growth during the next 20 years (assuming the age-specific head-of-household proportions remain constant during the period), whereas the larger total in 1975 would be the result of further increases in household-formation rates as well as population growth.

This growth in households is not expected to be uniform during the next 20 years. For each quinquennial period, the average annual increase is expected to accelerate, the closer the period is to 1975. Between 1970 and 1975, the average annual increase might range between 900,000 and 1,200,000. — Emanuel Landau, U. S. Bureau of the Census.

Highway Traffic and Traffic Fatalities in 1975

The size, composition, and distribution of the population of the United States in 1975 has a very real significance to highway engineers and administrators. Although the mileage of roads and streets has remained constant at about 3,300,000 since 1920 and will probably not change appreciably by 1975, the increase in continental population to 220 million from 164 million in 1955 will mean more families, more automobile drivers, and more motor vehicles. Since 1930 there has been a shift in where people live and where they work. Farm population has decreased, and urban population has increased at a greater rate in the suburban areas than for the urban area as a whole. This, together with the growth factor, has developed a daily home-work pattern of travel that is a major headache to all highway administrators.

Since 1920 when highway travel first reached significant proportions, it has been possible to observe a similarity in the pattern of total highway travel and that of the national economy. Prior to 1932 the rate of growth of highway travel exceeded that shown by the gross national product. The indices for each of these two factors moved along together throughout the rest of the 1930's and in 1940 and 1941. During World War II the national economy was stimulated, whereas highway travel was curtailed with regulations necessary for support of the war effort. By 1948 the two indices were back together again, increasing slightly each year. At no time has the ratio of highway travel to gross national product exceeded 1.5 miles per dollar and since 1932 this ratio has varied but slight-

ly during the non-war years. Assuming that the national economy will continue at the present high level, it is reasonable to expect that highway travel will continue to increase proportionately. With a projected gross national product of 745 billion dollars in 1975, highway travel in 1975 will approximate 1,119 billion vehicle-miles. No attempt has been made to estimate what effect changes in design of motor vehicles might have on this projection.

The increase in highway travel indicates that an increase in highway accidents may well be expected. With no appreciable change in road mileage, the increased number of vehicles, each traveling on the average the same annual mileage, will produce more opportunities for accidents. This paper, however, is limited to highway accidents resulting in fatalities since statistics on fatalities are quite uniformly and reliably reported, whereas accident statistics vary considerably among the several states because of the difference in definitions of what an accident is and the completeness of reporting. There is no national or Federal agency with responsibility for highway safety in all aspects of vehicle and driver operations. The 40,000 highway deaths recorded in 1956 is a postwar high. Although this same number was also recorded in 1941, it does not include as many pedestrians, and non-pedestrian fatalities have actually increased.

There will be an improved highway system in operation in 1975 designed to accommodate some of this increased travel and having design elements not found in the conventional highway, such as full control of access and median separation. This is the 41,000-mile interstate system estimated to carry 20 per cent of all highway travel in 1975.

The present fatality rate of 6.3 per hundred million vehicle-miles on all roads and streets is expected to be reduced to 4.6 and will probably be less than this on the interstate system where roads of comparable design at the present time have a rate of 3.3. The projection of 51,000 fatalities in 1975 is essentially a straight-line extrapolation of the fatality trend in the postwar years, and appears reasonable when compared with the trend in fatalities per 100,000 population and an application of separate pertinent rates per 100,000,000 vehicle-miles for the interstate and all other highway systems. — S. T. Hitchcock, Division of Highway Transport Research, Bureau of Public Roads.

The Aged Population in 1975

The Census Bureau has indicated that by 1975 the total population 65 and over will be 20.7 million, approximately 8.7 million males and 12 million females. The projected total aged population represents a 47 per cent increase over the 1955 aged, that of males 33 per cent and females 59 per cent. In 1975 the sex ratio for persons 65 and over will be 72.6, an even greater preponderance of females than at present. Depending on assumptions made as to fertility, persons 65 and over should constitute between 9 and 10 per cent of the total population in 1975.

Only a slight increase in the nonwhite proportion of aged is anticipated for 1975. Nonwhites in 1955 were approximately 7 per cent of all persons 65 and over, and in 1975 they may amount to 7.5 per cent of the aged population.

One of the more marked changes in the characteristics of the aged by 1975 will be the relatively smaller proportion of foreign born. In 1955 23 per cent of all persons 65 and over were foreign born while in 1975 only about 16 per cent of the aged population will be. Were it not for a regular but small number of immigrants expected in the next 20 years the foreign-born aged would actually decrease.

The trend towards greater educational attainment in the last few decades will affect the 1975 aged population noticeably. By 1975 only 2 per cent of the aged population will have had no education. The proportion of aged who had completed one to four years of high school in 1955 was approximately 20 per cent; in 1975 it will be 31 per cent. Similarly, persons 65 and over in 1955 who had completed one or more years of college were 8 per cent of all aged; in 1975 they will be almost 13 per cent of the older population.

Relatively minor changes can be anticipated in the urban-rural residence of older persons. The proportion of persons 65 and over living in urban areas was 67 per cent in 1955 and should be about 68 per cent in 1975. Those living in rural nonfarm areas were about 20 per cent in 1955 and will be about 18 per cent of all aged in 1975. The proportion living in rural farm areas is not expected to change for this age group.

Census projections of labor-force participation give approximately one million more persons 65 and over in the labor force in 1975 than in 1955. Since labor-force participation for this age group is expected to decrease by 1975, there will be approximately 5.6 million more persons 65 and over who will not be in the labor force. The combined effects of an increased population 65 and over and of decreasing labor-force participation rates will produce a situation in which the absolute numbers both in and out of the labor force will be greater in 1975 than in 1955. To expect that labor-force participation in this age category will drop to a point where there will be no increase in the number in the labor force is probably unrealistic.

The sheer numerical increase of the population 65 and over between 1955 and 1975 will produce more cases of illness. In 1975 an estimated 11.3 million annual cases of disabling illness of one or more days' duration can be expected. Heart disease is expected to be the leading cause of disability.

Approximately 5.2 million persons 65 and over will have a permanent disability in 1975, this number being about 1.7 million larger than the estimated figure for 1955. Of the 5.2 million permanently disabled in 1975 approximately 2 million will have a minor or moderate disability while 3.2 million will have either a severe or total disability.

Current data suggest that hospital facilities are rather rapidly falling behind the health needs of the aged population. During the period between 1946 and 1952 hospital beds of all types increased at an average rate of 1.2 per cent per year. At this rate of increase, in 1975 the number of general hospital beds should increase to 734,000, establishing a rate of 35.5 general hospital beds per 1,000 population 65 and over. This rate is considerably lower than the 1953 rate of 42.4 and implies an increase of 169,000 beds over the 1953 figure as opposed to the 311,000 beds needed to maintain the 1953 rate of general hospital beds per 1,000 population 65 and over. — Bruce Waxman, Population Research and Training Center, University of Chicago. [Editor's abstract.]

Demographic Research Abroad
Chairman: T. Lynn Smith, University of Florida

Current Demographic Research in Latin America. By Tulo H. Montenegro, Inter American Statistical Institute. No abstract received.

Danger Spots Revisited. By Warren S. Thompson, Miami University. No abstract received.

Current Research and Research Programs
Chairman: Rupert B. Vance, University of North Carolina

Demographic Research and the National Science Foundation

As a scientific discipline, demography may be viewed as a biological science, a social science, and an area of applied mathematics. Demography is an interdisciplinary science par excellence.

Because the National Science Foundation Act of 1950 provides for differential treatment of the biological and mathematical sciences, on the one hand, and the social sciences, on the other hand, the status of demography within the program activities of the National Science Foundation was originally uncertain. However, with the approval by the National Science Board of a limited program in the social sciences, demography has become an accepted discipline within the various program activities of the Foundation. These include (1) support of basic research; (2) graduate and postgraduate fellowships; (3) support of conferences and symposia; (4) partial support of travel to international congresses; (5) status of science studies; (6) register of scientific and technical personnel; and (7) scientific manpower studies. Brief descriptions of each of these programs are presented with special reference to demography.

The flexibility and dynamic character of the Foundation's activities in demography are noted and the hope is expressed that demographers will assist in providing guidance to the Foundation with respect to the requirements of demographic science. — Harry Alpert, National Science Foundation.

A Century of Divorce in England

The Matrimonial Causes Act of 1857 transferred jurisdiction over matrimonial matters in England and Wales from ecclesiastical to civil control and created a new court empowered to issue decrees of divorce. Prior to that, divorce was available only by special acts of Parliament. According to the 1857 legislation, a husband could petition for divorce on the ground of his wife's adultery but if the wife sought to dissolve the marriage she had to prove that her husband had committed adultery compounded by other matrimonial offenses. A Royal Commission appointed in 1909 recommended that the grounds for divorce be extended and be the same for both sexes. The discriminatory provision was removed in 1923, but it was not until 1937 that desertion for at least three years, cruelty, and incurable insanity became additional grounds for divorce.

For more than two and a half centuries, the basic ground for divorce has been the commission of a matrimonial offense. The Royal Commission on Marriage and Divorce, 1951-55, gave major consideration to a new principle—that divorce be granted where marriage has broken down beyond hope of reconciliation, even though no matrimonial offense has been committed. The Commission split on this doctrine, nine members for and nine against. It took a definite stand against making divorce more difficult, despite the sharp uptrend in the divorce rate, and strongly recommended premarital instruction to check hasty and ill-considered marriages, and that facilities be provided for guidance and reconciliation where breakdown threatens. — Jacob Baar, Metropolitan Life Insurance Company.

International Migration and Cultural Pluralism: Recent Demographic Developments in Switzerland

Shortly after the end of World War II Switzerland began to experience an unexpectedly strong resurgence of foreign immigration. The

nation having remained neutral, Switzerland's industries were in a strategic position to supply the depleted world market, and after the war the chronic unemployment of the 1930's turned into a continually increasing manpower shortage. Consequently the stringent immigration restrictions adopted in 1915 have been relaxed considerably since 1946 and a large number of foreign workers has been admitted. As a result, the 1941-50 intercensal period showed a net migration gain of 114,000 aliens, contributing one-fourth of the total population increase. Since the 1950 census was taken, the flow of immigration has continued unabated: the net migration gain from 1950 to 1956 can be estimated at 81,000 persons. In addition, Switzerland has recently admitted 11,000 Hungarian refugees. The flow of immigrants has increased the proportion of aliens in the Swiss population from 5 per cent in 1941 to 7 per cent in 1956. With the exception of diminutive Luxembourg, no other European country has an alien contingent of this size.

The demographic, economic, and cultural characteristics of the immigrants differ considerably from those of the Swiss citizens. Among the most striking differences is the low sex ratio of the foreigners, 69.3 in 1950, which is largely due to the preponderance of young, single females among the postwar immigrants. The female immigrants have been giving their Swiss age-mates stiff competition in the marriage market: every seventh Swiss man marries an alien bride, who thereby automatically acquires Swiss citizenship. This fact is viewed with misgivings by some of the more narrow-minded in the country.

Since Switzerland grants immigration permits only to foreigners whose skills are in short supply, the postwar immigration has been predominantly proletarian. The foreigners are concentrated in domestic and personal service, and in the hotel and restaurant industries.

The bulk of foreign migrants to Switzerland has always originated in the four neighboring countries with which Switzerland has close cultural and linguistic ties, but there have been considerable shifts in the proportion of immigrants furnished by each of the neighbors. The percentage of Italian nationals has risen rapidly, and that of the French has declined sharply.

At the time of the 1950 census, postwar immigration had wrought comparatively minor changes in the linguistic and religious composition of the Swiss population, but the subsequent effects of the alien influx have been more marked. With respect to language distribution, immigration helps to counteract the effects of considerable fertility differentials among the linguistic groups and acts as a stabilizing force; the influx of Italians checks the ascendancy of the German language. As regards religious groups, immigration reinforces the effect of differential fertility and tends to disturb the traditional balance; while 60 per cent of the Swiss population has always been Protestant, over 70 per cent of the recent immigrants are Catholics. As long as this immigration continues and fertility differentials among religious groups persist, the Catholic creed can be expected to make gains. Whether this will have any adverse effects on the mutual toleration and the harmonious cultural pluralism for which Switzerland has long been famous remains to be seen. — Kurt B. Mayer, Brown University.

Educational Characteristics of the Population in the Census of the Americas

The successful operation of a nation's economy depends in a large measure on a proper occupational distribution of the people, and this in turn depends on an adequate distribution of skills and intelligence among the population. Under the impact of technological changes the general

trend is towards occupations requiring special abilities or advanced training; and opportunities for unskilled labor are rapidly shrinking.

The increased importance of education has created a need for a more efficient statistical measure of the degree of schooling of the population than the traditional illiteracy, and in recent censuses the concepts of level of education and school attendance were introduced.

Broadly defined as the ability to read and write a simple message, literacy shows only the proportion of the people who do or who do not meet minimum standards of education. The level of education expressed in terms of the highest grade or year of schooling completed provides a better measure of the actual degree of literacy attained, and such measures of concentration as medians, quartiles, and deciles provide quite useful comparative units. School attendance provides data on the extent to which the population takes advantage of the educational facilities provided by the country, and gives a basis for estimating the future educational status of the population.

Those concepts applied in the 1950 Census of the Americas show that about 40 per cent of the population 15 years old and over in Latin America are illiterate as against some 2 per cent in the United States for the same age group. The level of education of this age group is expressed, however, by a median of less than one year of schooling completed in Latin America, as against a median of 10.3 for the United States (1952) and 8.2 for Canada (1951). For the population 15 years old and over that has attended schools, the median number of years of schooling varies in Latin America between 2.5 and 4.5. As regards the level of education of the age groups 65 years old and over and 15-24, the trend is stationary, with variations of only 0.3 and 0.4 points plus or minus. This compares with an increase in the United States from a median of 8.2 to 11.3, i.e. 3.1 points.

Despite its bearing on the future level of education of the population, little information on school attendance, or the "school-going population" as this concept may be called, is available from the 1950 Census of the Americas.

Any well-planned program that looks towards a more adequate adjustment of population to the changing occupational patterns, and the improvement of the economic and social conditions of the people must be based on a factual knowledge of the present educational status of the population and its evolution. Consequently, the educational characteristics of the population, serving as a reference point and as a complement of current school statistics, deserve greater attention in the international or regional recommendations for the 1960 World Census; and it seems desirable to enhance their analytical value by the recommendation of adequate cross-tabulations with other personal and economic characteristics of the population. — Gustavo Zakrzewski, Inter American Statistical Institute.

Reports of the P. A. A. Committees on the 1960 Census
Chairman: Philip M. Hauser

Interim Report on the Committee on the 1960 Census, Population Association of America. Prepared by Otis Dudley Duncan.

Census Areas and Residential Categories. By Amos H. Hawley.

Editor's note: Abstracts of these two reports presented at the meeting are omitted, because the complete text of the Committee's interim report will appear in the October issue of Population Index.