DEMOGRAPHIC DESTINIES

Interviews with Presidents of the Population Association of America

Interview with Arthur Campbell
PAA President in 1973-74

This series of interviews with Past PAA Presidents was initiated by Anders Lunde (PAA Historian, 1973 to 1982)
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ARTHUR CAMPBELL

PAA President in 1973-74 (No. 37). Interview with Jean van der Tak at the Center for Population Research, National Institute of Child Health and Human Development, Rockville, Maryland, February 16, 1988.

CAREER HIGHLIGHTS: Arthur Campbell was born in Brooklyn, New York in 1924. He received a B.A. in political science from Antioch College in 1948 and did graduate work in sociology at Columbia University. He worked at the Metropolitan Life Insurance Company in New York City from 1950 to 1952 and with the Foreign Manpower Research Office of the Bureau of the Census from 1952 to 1956. From 1956 to 1964, he was at the Scripps Foundation for Research in Population Problems at Miami University in Oxford, Ohio, where he worked on the Growth of American Families studies of 1955 and 1960. He was coauthor of the influential volumes which reported on those studies, Family Planning, Sterility, and Population Growth (with Ronald Freedman and P.K. Whelpton, 1959) and Fertility and Family Planning in the United States (with P.K. Whelpton and John Patterson, 1966). He was Chief of the Natality Statistics Branch of the National Center for Health Statistics from 1964 until 1968, when he joined the newly established Center for Population Research of the National Institute of Child Health and Human Development as Deputy Director, a position he still holds. He was NICHD's project director for the National Fertility Studies of 1965, 1970, and 1975 and has been project director of the National Survey of Family Growth since its first cycle of 1973. He has published extensively on American fertility, particularly birth expectations, fecundity trends, and, most recently, low fertility. [He died in Ocean Pines, Maryland, in 2020.]

VDT: We are speaking at the new office of the Center for Population Research of the National Institute of Child Health and Human Development on Executive Boulevard, Rockville, Maryland, to which the Center has just moved in the past few days. Art, how did you first become interested in demography?

CAMPBELL: I went to Antioch College and I had a co-op job at the Office of Population Research at Princeton in the summer of 1947. That's where I first became familiar with population research and got to know Kingsley Davis, Frank Notestein, Irene Taeuber, Dudley Kirk, Louise and Clyde Kiser, and Wilbert Moore. They were all there at that time.

VDT: What do you mean by the "co-op" job you had?

CAMPBELL: At Antioch they would send you off on a job for three months and then you'd go back to school for three months, then you'd go on another job for three months, and so on. They called those "co-op" jobs. And I ended up on a three-month job at the Office of Population Research.

Ansley Coale was there as a student at the time and so were George Stolnitz and Georges Sabagh. The particular work that I did, I remember, was preparing some life tables for Japanese cities for Irene Taeuber's book on Japan [The Population of Japan, 1958]. That was a big project at that time. That's where I learned how to make life tables. George Stolnitz showed me how to complete them up to age 100 with some mathematical curves. It was very interesting. I enjoyed that work thoroughly.

VDT: That was in the summer. And when you went back to Antioch you completed the degree in political science?

CAMPBELL: That's right. Then I went to Columbia University and Kingsley Davis went to

Columbia at that time, so I took some courses in population from him at Columbia. In 1950 I got a job with the Metropolitan Life Insurance Company in New York, writing little articles for their Statistical Bulletin.

VDT: Were Dublin and Lotka still there?

CAMPBELL: No, Lotka had died by that time. Louis Dublin was still there, and Mortimer Spiegelman. But I inherited Lotka's 20-inch slide rule, which I suppose was the equivalent of a hand-held computer in those days. I had a good time at Metropolitan Life and learned a lot from Jack Barr, who was editor of the Statistical Bulletin.

VDT: Did you work directly with Louis Dublin?

CAMPBELL: No. I worked in the statistical division, which he headed, but I worked directly with Jack Barr.

VDT: And that was mostly life expectancy?

CAMPBELL: Many articles were on life expectancy, but they also had articles on fertility and internal migration.

VDT: In 1956 you went to Scripps. How did that come about?

CAMPBELL: Before 1956 I went to the Census Bureau. In September 1952 I joined what was then called the Foreign Manpower Research Office at the U.S. Bureau of the Census, where they studied foreign populations. There I worked with Jay Siegel.

One of my first projects was the preparation of a report on the population of Yugoslavia. I made some population projections for Yugoslavia and worked up some fertility rates. I also worked on the USSR and I remember having made an age distribution for China around the time of their first census when they were not releasing very much information and you really had to make a lot of guesses about what their age distribution was.

VDT: China, just after it had become the People's Republic, in the early 1950s?

CAMPBELL: Right. I also developed a method of projecting mortality rates that were published in a little bulletin. I worked mostly on foreign populations there. I did a lot of writing and a lot of mathematical manipulations. It was good preparation.

Then I heard about the job at the Scripps Foundation and applied for it and talked to Pat Whelpton and was hired. That's when Norman Ryder left the Scripps Foundation [for the University of Wisconsin] and I replaced him there. He was there from about 1954 to 56.

VDT: That was specifically to work on the Growth of American Families study of 1955?

CAMPBELL: That's right. They had already done the fieldwork for the 1955 survey. I was hired to do some of the analysis. I did the analysis on the birth expectations. That was my main contribution to the 1955 Growth of American Families study.

Then when we got that out of the way--that was published in 1959 [Ronald Freedman, P.K. Whelpton, and Arthur A. Cambell, Family Planning, Sterility, and Population Growth]--we started on the 1960 Growth of American Families study, which was designed in part to check up on the birth

expectations that were given in the 1955 survey. We didn't interview the same women, but we interviewed cohorts that represented the same women.

Ronald Freedman did not participate in the 1960 study, but we still had the Survey Research Center at the University of Michigan doing the fieldwork. I worked on that until 1964. Whelpton died in the spring of 1964 and we were just finishing the book at that time, reporting the results of the 1960 GAF. It wasn't quite done, so John Patterson and I kept working on it and eventually it was published in 1966 by the Princeton University Press [P.K. Whelpton, Arthur A. Campbell, and John Patterson, Fertility and Family Planning in the United States]. The 1959 book was published by McGraw Hill.

VDT: What was it like to work at the Scripps Foundation? Frank Notestein in his last published article, describing the development of demography in the U.S. ["Demography in the United States: A Partial Account of the Development of the Field," Population and Development Review, December 1982], said it would be hard to overemphasize the importance and pioneering work of the Scripps Foundation, along with the Milbank Memorial Fund, in making demography a respectable field. So what was it like to work at Scripps and, in particular, working with Pat Whelpton?

CAMPBELL: He was a very easy person to work with. He had developed the cohort fertility tables. He was a very thoughtful man, very thorough, and very careful in everything that he did. He was very easy to work with, as he had no temperament, so to speak.

The Scripps Foundation at that time consisted of Pat and myself and we had two secretaries, Mrs. Minnis and Mrs. Smith, and for a while, Dick Tomasson worked with us. That was in preparation for the 1960 Growth of American Families study. Then Tomasson left to go to the University of Arizona and John Patterson joined us. John had worked at the State Department, down here in Washington, before that.

VDT: Wasn't Warren Thompson still there?

CAMPBELL: No, Warren Thompson wasn't there when I joined the Scripps Foundation in 1956. Don Bogue was still there part-time, but he went back and forth between Scripps and the University of Chicago. Warren Thompson had retired by that time. He would come in occasionally, so I met him, but he didn't do any work.

VDT: So it was a very small outfit and here you were tackling this enormous project. Well, of course, you had the Survey Research Center of Michigan.

CAMPBELL: Yes, they were very good. It's certainly one of the best survey research organizations in the United States. They had done some preliminary work in 1954 in the Detroit Area Study. Freedman had asked some questions on birth expectations then. This was the aspect of it that I was particularly interested in--birth expectations and the prediction of fertility. I wasn't as interested then as I've become since in methods of contraception and fecundity trends and so forth. In the 1960 survey, I analyzed not only the birth expectations but I also worked on fecundity impairments and that was quite interesting.

VDT: That was one of the main interests in the first survey too, wasn't it--fecundity impairments?

CAMPBELL: Yes, but they didn't go into it as thoroughly as we did in 1960. For example, they did not try to distinguish between operations for contraceptive purposes and operations for remedial purposes, which we did in 1960. These studies have grown bit by bit. First things first, and then you keep adding new elements to the study.

VDT: You have always been interested in fertility, most of your publications have pertained to that, although you mentioned that you started off in life tables. For example, in your PAA presidential address of 1974--you called it "Beyond the Demographic Transition" [published in Demography, November 1974]--you looked at the 18 developed countries that had very low fertility in the 1930s, the postwar baby boom of the 1960s, and declining fertility since then and pointed out how these trends were related to shifts in the timing of childbirth and that the baby boom was due to a rise in childbearing among younger women, earlier fertility, and some makeup fertility among older women. Then the declining fertility since then was due to a steep drop in fertility at older ages. What do you think the outlook is now for fertility, with the U.S.'s very low, below-replacement fertility since 1972?

CAMPBELL: It's really sort of a guessing game; we have nothing substantial to go on. Demographers in their lifetime may have only one cycle to look at and there are new cycles coming upon us, these cycles of rise and fall in fertility. My guess is that we'll remain at or below the replacement level, because I don't see anything that would cause fertility to increase in the near future. I've been following the fertility of the 1954 cohort.

VDT: Why that particular cohort?

CAMPBELL: They were 30 years old when I started doing this, in 1984, which is an age at which most women have had all the births that they want to have. What I've been interested in particularly is the proportion of zero parity women. The proportion of zero parity women was as high as 23 percent for the 1906-10 cohorts, and the 1954 cohort appears to be approaching that level.

I have two projections, a high and a low projection, for the 1954 cohort. One assumes that they will ultimately have 22 percent childless and the other assumes about 12 percent childless. Then each year that I get the data, I plot the rate of first births for this particular cohort. So far, it's slightly below the 22 percent projection, although when you ask these women how many children they expect to have, the proportion who expect to remain childless is much lower than 22 percent; it's on the order of 12 to 15 percent.

So I think that women are revising their birth expectations downward as they proceed to the older childbearing ages. I've seen no trend that suggests that anything different will happen. Fertility has remained relatively flat for approximately 15 years now. So, unless Easterlin is right . . .

VDT: Yes, the idea that the small male baby bust cohort will want their wives to stay home and have babies while they work. However, I think most birth expectations, as you say, have shown that women consistently overestimate the children they will have. But with your cohort of 1954, you must have data for them only up to about age 32 or 33. There is a tendency to delayed childbearing--the biological clock ticking. I guess, though, it's not such a large proportion that are having children after the age of 33.

CAMPBELL: No, it's really very small.

VDT: It gets a lot of publicity.

CAMPBELL: But it really involves a very small proportion of women having first births in those age groups. Between ages 30 and 34, it's something like only one percent are having first births in any given year and the proportion keeps declining. One percent is 10 per 1,000, but it's a small proportion.

VDT: Working with fertility and birth expectations must have been very exciting and fun. Would you

say that in U.S. demography the baby boom has been practically the leading issue in the last few decades?

CAMPBELL: Yes. It's a phenomenon that's difficult to understand. Why did it occur, this return to emphasis on early childbearing, larger numbers of children, and fewer women childless? I think this is a fascinating problem and we don't know fully what the answer is.

VDT: And now it's gone to the other extreme, possibly 22 percent childless, as you say, and continuing very low fertility.

CAMPBELL: That's a little easier to understand, because we were headed in that direction before. I think these trends have something to do, though perhaps not entirely, with the changing role of women in society. The cohorts of the early 1900s had among them a fairly large number of professional women, women who had gone to college and become physicians or had other professional occupations. Irene Taeuber was a perfect example of that cohort.

VDT: She was rather special, but okay.

CAMPBELL: Yes, she was. But there was Helen Walker, who was president of the American Statistical Association, and there was . . . who was the lady from North Carolina who wrote Statistics for Sociologists?

VDT: Margaret Hagood.

CAMPBELL: Exactly. And Louise Kiser. There were a number of women from the cohorts of the early 1900s who were professionally very successful and this trend, I think, was interrupted in part by World War II and in part the advantages during the postwar period that were given to men who had served in the armed forces and who were released in great numbers and took over the labor market essentially and were able to gain some economic security because of the GI bill, loans for houses, and other benefits that made it possible for them to marry early and begin families early. At the same time, I think women suffered because of this, that is, the advancement of women into professional careers.

But now that's changing and I think it's bound to have an effect on the fertility rate and the effect is predominantly negative. It makes it possible for fertility to remain fairly low, as happened for the cohorts of the early 1900s.

VDT: Well, then of course it was the Depression.

CAMPBELL: No, it wasn't the Depression. The fertility was maintained at a low level during the Depression, but fertility came down during the 1920s. And it was among those cohorts that it came down. So it wasn't just the Depression that caused the cohorts of 1906-10 to have low numbers of births. The earlier cohorts of 1900-1905 also had fairly low fertility. There was something going on that really reduced fertility during the 1920s. You could almost say the Depression stopped the decline of fertility.

VDT: That's an interesting point. In your book on the 1960 GAF, Fertility and Family Planning in the United States, you made projections at what was then the peak of the baby boom of what fertility could be in the early 1980s. I was interested that your low series projected the net reproduction rate as still above one and a crude birth rate of about 18. However, in numbers--the actual number in the U.S. in 1980 was 226 million, which fell between your low and medium series of population projections, so

that wasn't bad. Of course, there have been a lot of notoriously incorrect projections in the past, starting with Whelpton, who made projections in the 1930s of the U.S. population in 1975 which were far below what it actually was. However, projections got a bit more accurate as they got closer to the period. Of course, the birth expectations data were first collected with the idea of feeding into projections.

CAMPBELL: That's right, it was. It hasn't proved to be as useful as we thought it might be because women do tend to expect more children than they eventually have, particularly women who are better educated. Less educated women expect fewer children than they actually have because they have so many unwanted children. The birth expectations data have not been too useful during this period of change. Particularly with the cohorts of the 1940s, you can see how they kept revising their birth expectations downward as they became older. You can follow this through the series of surveys that we've had.

VDT: The ones collected in June by the Current Population Survey?

CAMPBELL: That's right, those--and the National Survey of Family Growth also has a comparable series. So what it's going to be in the future is very difficult to tell. We made those 1960 projections on the basis of the birth expectations, but obviously they weren't too accurate.

VDT: Let's go back to your career. In 1964 you went to the National Center for Health Statistics. What did you do there?

CAMPBELL: I was chief of the Natality Statistics Branch. We published the annual data on births in the United States and we got the cohort fertility tables started. That was another project that Whelpton and I did at the Scripps Foundation--publish the early cohort fertility tables. These have since been updated by the National Center for Health Statistics. Now we have every year a set of five cohort fertility measures, that is, the central rates, the cumulative rates, the parity distributions, the age-parity-specific birth probabilities, and the parity progression ratios.

VDT: That's been very important ever since Whelpton developed his cohort fertility measures in the 1930s, pointing out that period rates can be misleading. What led you to go from there to . . . Was the Center for Population Research of NICHD first formed about 1968 when you came here?

CAMPBELL: Yes, it was. Phil Corfman and I started it in August 1968, almost 20 years ago. The purpose of the Center for Population Research was to support population research in the U.S. and we had not only the behavioral component, which would include demography, but also the biomedical component. So we eventually organized it in four branches: the contraceptive development branch; contraceptive evaluation branch, which studies the safety of methods of contraception; reproductive sciences branch, which supports basic reproductive biology; and the demographic and behavioral sciences branch, which includes demography and also psychology, sociology, and economics. It studies not only fertility but also migration and mortality.

VDT: You should write about that sometime. Notestein in that article I mentioned said that he was writing about the part of the development of demography that he knew about, which was the private organizations and universities and so on. He said that if the story had been told by you--and he named you in particular along with Con Taeuber and Phil Hauser--you could say more about ["do more justice to"] the innovative role of government organizations in the development of demography in the U.S. You've described the four branches of the Center for Population Research. Could you say that it is

probably the leading supporter of research in those fields?

CAMPBELL: We are now. In the United States, it used to be that there was very little support for population research in the social sciences. There was Milbank Fund, the Office of Population Research at Princeton, Rockefeller Foundation, and eventually the Population Council came in and then the Ford Foundation. So the private agencies did begin to support population research to a greater extent. But they were never able to come up to the level of funding that we've been able to provide.

VDT: Of course, all those private agencies you've mentioned, except the Milbank Fund, were supporting research on Third World demography.

CAMPBELL: That's right.

VDT: How did it happen that in the late 1960s the time was ripe for setting up the Center for Population Research? Was that part of the Great Society era, the Johnson era?

CAMPBELL: It was part of that and it arose also out of the concern for the population problem--population outrunning food supply and resources in general. You had the Club of Rome, Paul Ehrlich [The Population Bomb, 1968], and a lot of other people giving publicity to population.

VDT: And the Commission on Population Growth and the American Future in the early 1970s.

CAMPBELL: Yes.

VDT: And it was easy enough to get money then from Congress?

CAMPBELL: The amount of money was really not very much. The Center started in 1968 with only about $2 million. Our initial amount was spent on studying the safety of the pill. That was a big project we had at the Kaiser-Permanente Hospital at Walnut Creek, California. This was a big cohort study of women who took the pill; they did a lot of medical tests on these women to see what the effects of the pill were. But since that time our budget has grown to well over $100 million. So the Congress has continued to appropriate fairly large amounts of money for us. Not that we can fund all of our approved grant applications.

VDT: That's one of the biggest hassles in the population research world. Everybody wishes they could get more funding from NICHD. You approve many proposals in a year which you can't fund, is that it?

CAMPBELL: Oh, yes. I don't know what we're expecting to do this year, but if we can fund as high a proportion as 30 percent of approved grants we're doing well.

VDT: Only 30 percent of approved grants? Phew!

CAMPBELL: Yes, but you also must remember that most of our money goes to biomedical research. I say we have well over $100 million, but most of that is spent on basic reproductive biology. The amount spent on socio-behavioral aspects of population, including demography, would be around $20 million. That's still a pretty good chunk of money, but research becomes more and more expensive every year. There are computers to be bought, salaries to be paid, and so forth.

VDT: But you can say that the Center for Population Research has been the most important source. Has it influenced policy in the U.S.?

CAMPBELL: Yes, it has--in two ways. Certainly our biomedical research has influenced policies concerning, let's say, the safety of the pill and the IUD. In the social-behavioral areas, it's a little difficult to see what the direct influence on policy has been. But certainly since 1975 we have made a concerted effort to study the problems associated with teenage pregnancy and childbearing and I think this had a big impact on efforts to reduce fertility at such an early age. Just how our studies have affected policy in a direct way is difficult to say. But certainly by making known what the consequences are and what some of the contributing factors may be, I think we've increased the awareness of this problem and society's attention to it. So, yes, I think we have affected policy, but it's just difficult to say how much.

VDT: Now I'd like to turn to your connections with the Population Association of America, of which you were president in 1973-74. Do you recall when you first attended a meeting, when you first joined PAA?

CAMPBELL: I remember attending meetings at Princeton. The first meeting I attended was in the spring of 1947, when I remember T.J. Woofter making a spontaneous intervention about the usefulness of looking at fertility on a cohort basis rather than a period basis. He made quite a point of that. I don't think it was that particular remark that started Whelpton thinking about cohort fertility tables, but certainly that was the first I ever heard of it.

VDT: I was looking back at Clyde Kiser's 40 years of reminiscences on the Milbank Memorial Fund, a series of papers given at the time Kiser retired from the Fund in 1971 [Clyde V. Kiser, ed., Forty Years of Research in Human Fertility, Milbank Memorial Fund, 1971]. Someone [Wilson Grabill] remarked that Woofter inspired Whelpton in cohort fertility analysis ["A few might regard Woofter's paper on generation reproduction rates as a forerunner of Whelpton's work."]. I thought Whelpton had been doing it in the 1930s. No?

CAMPBELL: He had developed the component method of population projections in the 1930s, meaning that you make separate estimates for the different components of population change. But to my knowledge he hadn't started working on cohort fertility.

VDT: So maybe it really was Woofter that put Whelpton onto it.

CAMPBELL: Could be.

VDT: Tell me about Woofter [PAA president in 1940-41]. Nobody seems to recall much about him.

CAMPBELL: I don't either. He was from the South. I can't remember if he was associated with the University of North Carolina or not [yes, 1926-35]. I don't know what his career was. I do know that he worked for the government, but whether it was the Department of Agriculture or some other agency, I'm not sure [Works Progress Administration, Federal Emergency Relief Administration, Federal Security Agency, CIA].

VDT: Do you remember anyone else that struck you at those early meetings?

CAMPBELL: I'm afraid not.

VDT: The first meeting you attended, in 1947, was indeed at Princeton, where so many meetings were then held. Do you recall some issues or events of note in PAA over the years--any outstanding meetings that you can think of?

CAMPBELL: There was a Catholic priest who used to come to the meetings--Father Collins or something like that [Father Gibbons]. He gave a paper on Catholic fertility values ["The Catholic Value System in Relation to Human Fertility"] at one of the Princeton meetings [1949] and I remember Kingsley Davis making a very heated intervention, saying that such papers had no business at the Population Association. [See Philip Hauser's description of this incident in his interview.]

I don't remember any PAA meeting that stands out in my mind. I do remember Irene Taeuber's pleasure when President Johnson said in his State of the Union address that problems of population required attention. That opened the possibility for the State Department to start giving population aid.

VDT: That was the State of the Union address of 1965, when he said that five dollars put into family planning was worth $100 of economic development aid. That was a famous speech and it did indeed precipitate the U.S.'s getting into population aid, through AID's Office of Population, which started in 1968. It took a while for things to rev up. It must have also spilled over into the domestic climate. Can you recall what offices you've held in PAA?

CAMPBELL: I was a director, on the Board, for a number of years. I recall counting the ballots one year.

VDT: What do you think of how PAA has changed over the years? Many old-timers miss the Princeton meetings, when you all fitted into one room and there were no overlapping sessions. Now, of course, we have six or seven overlapping sessions, attended by over a thousand people. How do you view the changes over the years and have they been for the better or worse?

CAMPBELL: It was fun having smaller meetings. But I think it's a natural thing to happen, that the Population Association has become larger, and it's encouraging to see that it has. One of the things that happened while I was president was the revision of the constitution, which put the offices on a calendar basis rather than a fiscal year basis. There were some other good changes, such as the possibility for people to petition to have candidates on the ballot, rather than just to let the nominations committee choose who the candidates would be.

VDT: That was important later on. There was one year when not a single woman was candidate for the Board and, of course, the women rose up in wrath and proposed three or four. That might have been one year that Wendy Baldwin was proposed as a candidate.

CAMPBELL: Then for a while there we had the Concerned Demographers. They used to have a publication in the early 1970s.

VDT: Things were still heated up in the early 1970s, with the student unrest and Vietnam war protests that began in the 1960s. I recall <u>your</u> meeting when you were president, in 1974; it was in New York. I was not impressed with New York. Do you think it's better to have meetings in smaller cities? Although Chicago last year [1987] was a good venue.

CAMPBELL: I liked Chicago; I thought that was a good meeting. I didn't go to the San Francisco meeting [1986], but I went to the American Statistical Association meeting in San Francisco last year

and I think that's an ideal city to have meetings in. They have such a nice conference center there; it's not far from downtown. You can walk to the conference center. Of course, New Orleans ought to be a good place. That's where we're meeting this year [1988].

VDT: Have you attended most of the PAA meetings over the years?

CAMPBELL: Yes, I'd say most of them.

VDT: Do you come away refreshed, meeting new people, new ideas?

CAMPBELL: Oh, yes.

VDT: Who would you say was the most important influence on your career?

CAMPBELL: I would say Kingsley Davis. He certainly got me started in demography. But it would be difficult to choose between him and Jay Siegel, because I learned an awful lot from Jay Siegel. I worked with him at the Census Bureau and he was a very good person to work with, because he taught me so much. For one thing, he taught me how to write. He was a stickler for good grammar, and he was a heavy editor. He could instruct you and still be pleasant about it; he wasn't overbearing at all.

VDT: He's still teaching, as you know. I was supposed to interview him last month for this series, but he was leaving for Cornell, for this semester, till June. He was trying to finish his 1980 census monograph on aging and that was behind schedule, and he was winding up at Georgetown, where he has been teaching for the last few years. You didn't have him as a teacher, but as a colleague.

CAMPBELL: He's a perfectionist. That's why it takes him so long to do things, but when it's done it is perfect. That makes it worthwhile.

VDT: And Kingsley Davis. It's interesting that you name two men who have had such long careers in U.S. demography. Kingsley, of course, is still very active. He's chair of a session at the next PAA meeting on the history of demography, "Two Centuries After Malthus: The History of Demography." What was he like? He must have been just a young man when you studied with him at Columbia.

CAMPBELL: He was very helpful, a very dynamic person. And had a sense of the importance of social structure and the influence of social structure on population that I think is unparalleled. So many demographers today are primarily interested in the mathematical techniques of studying population and I think to a certain extent we may have lost this social structure orientation, this view of society and population that Kingsley represented so strongly. I think the methodologies that have been developed are certainly very interesting and helpful, but often they are not used to do anything but demonstrate a particular methodological technique, rather than to say something about the relationship between population and society. And this was what his whole career was about--population and society. I think we need more Kingsley Davises.

VDT: That's an interesting point. I've been reading about Frank Notestein. People said that he was a marvelous, well, theorist, of course--there was his demographic transition theory, which has since been much criticized--and seemed to have an overarching view of the importance of society, but was perhaps sloppy with some of the details. But don't you feel there's room for both?

CAMPBELL: Oh, sure.

VDT: You pointed out back in the 1966 volume, Fertility and Family Planning, and again in your 1974 PAA presidential address that fertility decisions are made in a socioeconomic context, so obviously you've thought about this for a long time, that one should look at fertility decisions, migration decisions, whatever, in the context of the social climate. Do you find that missing in, say, current PAA meetings where so many of the papers are very methodological?

CAMPBELL: Yes, I do. I would like to see more emphasis on social aspects. I think a lot of the work on teenage pregnancy and childbearing has this element to it, that is, the connection between society and population. But so many of the other things don't.

VDT: What has given you the most satisfaction in your career?

CAMPBELL: That would be difficult to say.

VDT: Perhaps the two books from the GAF, or your part in setting up the Center for Population Research, which has become so enormously important in the field in the U.S.?

CAMPBELL: I don't know what has given me the most satisfaction. I think one of the things I do find satisfying is the opportunity to continue to learn, to study some of the new techniques. Although I say people may give them a little too much emphasis, nevertheless, they are interesting. Methods of log linear analysis, for instance, which I've been studying recently. I can see how they can be helpful. New techniques of categorical analysis could be very helpful in analyzing fertility surveys.

I think what gives me the most satisfaction is to analyze the results of surveys, or to analyze cohort fertility rates. To do things like that. The administrative things that I do are not really very satisfying. They are really kind of humdrum; I don't find them something I look forward to. I think this is probably true of a lot of people in this field.

VDT: Not just in this field, I would say. I've peripherally seen what NICHD requires for proposals and it's pretty overwhelming. Then when you get the money, the reports that are required.

CAMPBELL: Yes. So the things I find satisfying are really sitting down with computers and analyzing numbers, playing with them, trying to see what's there. For instance, analyzing things like unwanted childbearing to see how this relates to socioeconomic status, education, religion, etc. I like to do things like that. That gives me most satisfaction.

VDT: I think you're fortunate that you've been able to continue to do that. How are you connected with the National Survey of Family Growth? You mentioned that Cycle IV, which I had thought was in the field last year, is actually only just happening now, because questions on AIDS were added to the schedule.

CAMPBELL: I'm project officer on that survey, so I have to stay in close touch with it. Cycle IV is going to be a landmark survey.

VDT: Because of the AIDS questions?

CAMPBELL: Well, that, and they hope to be able to do some longitudinal studies, that is, reinterview a sample of women 17 months after the main survey is done.

VDT: Like the National Fertility Study of 1975, that reinterviewed women from 1970?

CAMPBELL: Exactly. So that should be quite interesting. I'm pleased about that.

VDT: How big a sample is it?

CAMPBELL: They expect to have between nine and ten thousand interviews this time. The sample size is something like 10,600, but then you don't get everybody. And they plan to reinterview half of those people.

VDT: That's a lot!

CAMPBELL: By telephone, so it shouldn't be too expensive.

VDT: That's great. You should be very satisfied with your part in the National Survey of Family Growth.

CAMPBELL: Well, as I say, the satisfying thing for me about that is to play with the numbers, once I get them.

VDT: Do you do more analysis than the actual staff--Bill Pratt, Bill Mosher, etc.--do?

CAMPBELL: No, I don't think so.

VDT: That's always been a very interesting survey. I was in on the planning meetings back in the early 1970s.

CAMPBELL: I remember. Georgetown had the contract to set up those planning meetings.

VDT: Right. Then it was thought they were going to have them every other year. Do you regret the fact that they've been spaced out as they have been [1973, 1976, 1982, 1988]?

CAMPBELL: No, I think that's okay. We can just make estimates those other years. It takes time to analyze these big surveys. I would rather have one big survey every five years than little surveys every two years, because you can go into more detail, more depth, in the larger size.

VDT: That's right--with the sample size now up to 10,000; that's marvelous. It was 2700 [2,713] in 1955?

CAMPBELL: Yes.

VDT: Well, of course, the U.S. population has increased enormously too.

And these U.S. fertility surveys have led to the World Fertility Survey, the Contraceptive Prevalence Surveys, and Demographic and Health Surveys all over the world. That's a tremendous contribution, I would say, of U.S. demography.

CAMPBELL: Yes. I just wish more countries would have cohort fertility tables. And they could too, especially the developed countries. It would make it a lot easier.

VDT: Could they get cohort fertility tables just from their birth registration?

CAMPBELL: No. You have to start somewhere and you have to start with something like a survey of children ever born.

VDT: Actually, not many developed countries have had good surveys, compared to the U.S. Jerzy Berent put together those they had around the early 1970s.

CAMPBELL: There have been quite a few, but they haven't been on a regular basis. Of course, the U.S. surveys have not been on a regular basis but, still, they have been quite useful.

VDT: I think it's a tremendous achievement, and people thought at the beginning that women would be loathe to talk about . . .

CAMPBELL: Yes, and now we're asking all kinds of embarrassing questions.

VDT: And this next time AIDS is going to be asked of the women?

CAMPBELL: Well, it's really pretty much a matter of asking what they know about it to see what the level of information is about AIDS and how they think it might be prevented and how they think it is transmitted. It's mostly questions about the information they have about AIDS.

VDT: The NSFG has never attempted to interview husbands. Some of the early surveys--was it the Princeton survey that interviewed some husbands?

CAMPBELL: Indianapolis interviewed husbands, in 1941. Nowadays you have to say "partners." It's like "householder."

VDT: Right. You don't dare have "head of household."

CAMPBELL: I don't think the Census Bureau ever asked husbands about birth expectations. They may have; I can't remember now.

VDT: Do you think that would be a good idea?

CAMPBELL: Sure. Very often there are differences between husbands and wives in the number of children wanted. You pick that up just by asking the wives how many children they think their husbands want. But it would be also useful in terms of, let's say, methods of contraception being used currently, whether they are being used, in the first place, and whether they agree with the wife. It would be a good way of seeing how consistent the information is.

VDT: What do you see as the outlook for demography in the United States--more and more people in it? You've said that it's becoming very methodological. Obviously, fertility continues to be an area that fascinates a lot of people. How do you think the future looks for the discipline of demography in the U.S.?

CAMPBELL: I think it has gained importance and recognition. I think that it's going to be very important in the future, especially as the baby boom ages. When they reach 65, there is going to be an explosion. The kids who are being born now are going to have to support these old people. I think that the social issues this raises are going to be tremendous. There may even be pronatalist efforts in

the future. Who knows?

VDT: Do you think when you come out with your studies on fertility, showing it so low, you might precipitate pronatalist policies? You have said that your research on adolescent pregnancy and childbearing has had some impact on policy.

CAMPBELL: Well, it's pretty obvious to the people concerned about Social Security, for instance, that adjustments are going to have to be made in the future. Whether these will be pronatalist or not, I don't know. But certainly there will be concerns and debate about this, and I think population research will contribute to this.

From Ocean City Today, 03/20/2020

Ocean Pines

Arthur A. Campbell, age 96, of Ocean Pines, Maryland, passed away peacefully Tuesday, March 10, 2020, at his home.

He was born in Brooklyn, New York, and raised in Danville, Pennsylvania. Arthur was the son of the late Arthur M. Campbell and Jo E. Andrews and the loving husband of the late Nancy (Pyle) Campbell.

Arthur is survived by his daughter, Julie Phillips and her husband, Dr. Richard Phillips; grandchildren, Hunter Aanenson and Lindsay Aanenson; as well as a great-grandchild, Carter.

In addition to his wife and parents, he was preceded in death by his sister, Joyce Campbell.

Arthur was a veteran of WWII and had served his country in the Navy.

He received a B.A in political science from Antioch College in 1948 and did post-graduate work at Columbia University.

He was an eminent demographer with the N.I.H. where he served as deputy director of the Center for Population Research during his career from 1968 to 1994. He was best known for his contributions to the study of fertility.

His work incorporated the rigorous application of mathematical methods that allow demographers to interpret and project population data and a commitment to understanding the role of social and economic factors influencing childbearing and other demographic events.

He served as the president of the Population Association in 1973 and wrote numerous publications regarding fertility trends.

After his retirement, he followed his lifelong interest in art, travel, music and lectures at the Smithsonian Institute. He will be remembered for his calm demeanor, amazing expertise and self effacement. He was a true scientist and a renaissance man.

Arrangements are in the care of the Burbage Funeral Home in Berlin, Maryland. Services will be announced at a later date and condolences may be sent via: www.burbagefuneralhome.com.

Should friends desire, contributions may be made to, The Guttmacher Institute, The Population Association or the Southern Poverty Law Center.

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BEYOND THE DEMOGRAPHIC TRANSITION*

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Two major demographic movements have dominated population growth in the world during the past thirty years: first, the decline of death rates in the developing countries, which has brought about unusually rapid population growth, and, second, the rise and subsequent decline of birth rates in some developed countries.

The first of these trends was to have been expected because it recapitulated the decline of mortality in the developed countries, though in a much shorter period of time. But the second—the rise of fertility in the developed countries—was not generally expected. At most, demographers thought that there would be a moderate increase after the war to compensate for the interruption of family growth during the war—and, indeed, the word "compensation" has been used occasionally to characterize the resurgence of childbearing in the postwar period. But it turned out to be much more than that, and we have had to recognize the fact that fertility rates in developed societies are not necessarily consistent with reproduction at the replacement level. The developed countries appear to have gone beyond the demographic transition and to have entered an era in which fertility fluctuates mainly in response to influences other than those that reduced birth rates during the preceding three centuries. Certainly something unexpected happened, and it is natural to assume that new forces have come into play.

* Presidential address presented at the annual meeting of the Population Association of America, New York City, April 19, 1974.

I should like first to review the principal features of the rise and decline in fertility since the lows of the 1930's were reached. I have identified 18 developed countries with populations over two million that recorded a sustained elevation of fertility—that is, a postwar rise above the levels of the 1930's lasting at least through the early 1960's. I have excluded countries, such as Poland, where the postwar rise lasted only a few years, as well as the countries of Southern and Eastern Europe that showed continuing declines in fertility. The countries under review include those of Northern and Western Europe, Australia, New Zealand, Canada, and the United States. They now contain nearly 500 million people, or 44 percent of the population of the developed world.

During the 1930's, these 18 countries reached low total fertility rates averaging about 2,100, as shown in Table 1. By the early 1950's, the average had risen to 2,700 and by the early 1960's, to 3,100. Most of these countries reached their late postwar peak fertility rates in the period 1961–1964. The United States, with its 1957 peak of nearly 3,800, was an exception. During the later 1960's, declining fertility was almost universal among these countries, though not among all developed countries. By 1971 or 1972, at least seven of the countries that had experienced a sustained elevation of fertility had total fertility rates below the replacement level, that is, below 2,100. The average for 17 of the countries for which age-specific rates could be obtained was about 2,300. The average is

TABLE 1.—Age Components of the Total Fertility Rate for 18 Selected Countries: 1930's–1972

Country	Low Values (1930's)[a]				Early 1950's				High Values (Late 1950's or 1960's)[b]				Early 1970's			
		Total Fertility Rate				Total Fertility Rate				Total Fertility Rate				Total Fertility Rate		
	Year	All Ages	Under 25	25 and Over	Year	All Ages	Under 25	25 and Over	Year	All Ages	Under 25	25 and Over	Year	All Ages	Under 25	25 and Over
Australia	1933	2,163	624	1,539	1950–52	3,088	1,088	2,000	1961	3,512	1,335	2,177	1972	2,750	1,128	1,622
Austria	1933–34	1,653	528	1,125	1950–52	2,073	755	1,318	1963	2,810	1,097	1,713	1972	2,101	998	1,103
Belgium	1933–37	1,968	624	1,344	1948–52	2,370	731	1,639	1964	2,692	980	1,712	1971	2,205	909	1,296
Canada	1936–40	2,693	732	1,961	1950–52	3,530	1,196	2,334	1959	3,935	1,471	2,464	1972	2,024	792	1,232
Czechoslovakia	1934–36	2,081	702	1,379	1950–52	3,018	1,236	1,782	1956–58	2,724	1,261	1,463	--	--	--	--
Denmark	1936	2,137	647	1,490	1950–52	2,539	969	1,570	1963	2,630	1,109	1,521	1971	2,043	839	1,204
England and Wales	1939	1,835	544	1,291	1950–52	2,151	725	1,426	1964	2,889	1,109	1,780	1972	2,197	950	1,247
Federal Republic of Germany	1934	2,032	536	1,496	1951–53	2,062	760	1,302	1964	2,547	746	1,801	1972	1,724	749	975
Finland	1937	2,399	575	1,824	1950–52	3,077	905	2,172	1955	2,914	936	1,978	1971	1,705	710	995
France	1934–38	2,073	753	1,320	1949–53	2,859	907	1,952	1964	2,868	1,020	1,848	1972	2,416	932	1,484
Ireland	1936	2,984	390	2,594	1951	3,271	475	2,796	1966	3,918	672	3,246	1971	3,974	846	3,128
Netherlands	1933–37	2,632	411	2,221	1948–52	3,173	553	2,620	1961	3,191	716	2,475	1972	2,169	724	1,445
New Zealand	1936	2,115	556	1,559	1951	3,405	1,102	2,303	1961	4,111	1,509	2,602	1971	3,175	1,395	1,780
Norway	1932–35	1,848	354	1,494	1951–55	2,605	756	1,849	1964	2,968	1,102	1,866	1972	2,396	1,040	1,356
Scotland	1938	2,202	640	1,562	1950–52	2,416	750	1,666	1964	3,076	1,126	1,950	1972	2,279	978	1,301
Sweden	1933–37	1,703	463	1,240	1948–52	2,312	819	1,493	1964	2,492	970	1,522	1972	1,926	788	1,138
Switzerland	1937	1,753	363	1,390	1950–52	2,348	568	1,780	1964	2,668	840	1,828	1972	1,913	683	1,230
United States	1934–36	2,040	810	1,230	1949–51	3,085	1,406	1,679	1957	3,767	1,790	1,977	1972	2,022	969	1,053
Average		2,128	569	1,559		2,743	872	1,871		3,095	1,099	1,996		2,295	906	1,389

a- These are the lowest total fertility rates that could be found in the period 1931–1939 in the sources searched (see Sources for this table). Since rates were not always available for all years, in a few cases the values shown here may not be the lowest actually experienced.
b- These are the highest total fertility rates found in the period 1955–1966 in the sources available.

Table 1.--Continued

Sources: Australia -- 1933 and 1950-1952, Keyfitz and Flieger, 1968, pp. 555 and 556; 1951, United Nations, 1966, p. 335; 1972, Australia, 1973, p. 9.

Austria -- 1933-1934, League of Nations, 1945, p. 52; 1950-1952, Keyfitz and Flieger, 1968, p. 242; 1963, United Nations, 1966, p. 330; 1972, Gisser, 1974.

Belgium -- 1933-1937 and 1948-1952, Keyfitz and Flieger, 1968, pp. 258 and 262; 1964, United Nations, 1970, p. 299; 1971, Schobbens, 1974.

Canada -- 1936-1940 and 1959, Canada, 1965, p. 38; 1950-1952, Keyfitz and Flieger, 1968, p. 85; 1972, Aubry, 1974.

Czechoslovakia -- 1934-1936, U.S. National Office of Vital Statistics, 1947, p. 113; 1950-1952 and 1956-1958, Keyfitz and Flieger, 1968, pp. 280 and 283. (Although the 1956 gross reproduction rate of 1.379 was 4.5 percent above the 1956-1958 rate of 1.319, age-specific rates for 1956 could not be located.)

Denmark -- 1936, League of Nations, 1940, p. 60; 1950-1952 and 1963, Keyfitz and Flieger, 1968, pp. 290 and 297; 1971, Ussing, 1974.

England and Wales -- 1939, League of Nations, 1945, p. 54; 1950-1952, Keyfitz and Flieger, 1968, p. 534; 1964, Great Britain, England and Wales, 1971, p. 150; 1972, Cole, 1974.

Federal Republic of Germany -- 1934, League of Nations, 1945, p. 52; 1951-1953, United Nations, 1960, pp. 260, 261, 280, and 281; 1964, Keyfitz and Flieger, 1968, p. 355; 1972, Schwarz, 1974. (About 62 percent of the pre-war population of Germany lived in areas now included in the Federal Republic. Figures for 1951-1953 are weighted averages for the Federal Republic of Germany and West Berlin.)

Finland -- 1937, United Nations, 1951, p. 309; 1950-1952, Keyfitz and Flieger, 1968, p. 302; 1955, United Nations, 1966, pp. 479-480; 1971, Strengell, 1974.

France -- 1934-1938 and 1949-1953, Keyfitz and Flieger, 1968, pp. 332 and 334; 1964, Calot, 1974.

Ireland -- 1936 and 1951, Keyfitz and Flieger, 1968, pp. 382 and 384; 1966, United Nations, 1970, p. 393; 1971, Keating, 1974. (Although the 1964 gross reproduction rate of 1.955 was 2.4 percent above the 1966 rate of 1.909, age-specific rates for 1964 could not be located.)

Netherlands -- 1933-1937 and 1948-1952, Keyfitz and Flieger, 1968, pp. 414 and 418; 1961, United Nations, 1966, pp. 491-492; 1972, Vanden-Breckel, 1974.

New Zealand -- 1936, League of Nations, 1945, p. 54; 1951, Keyfitz and Flieger, 1968, p. 570; 1961, United Nations, 1966, p. 336; 1971, New Zealand, 1973, pp. 7, 15, and 25.

Norway -- 1932-1935 and 1951-1955, Norway, 1973, p. 20; 1964, United Nations, 1970, p. 300; 1972, Lettenstrom, 1974.

Scotland -- 1938, League of Nations, 1945, p. 54; 1950-1952, Keyfitz and Flieger, 1968, p. 540; 1964, United Nations, 1970, p. 301; 1972, Travers, 1974.

Sweden -- 1933-1937 and 1948-1952, Keyfitz and Flieger, 1968, pp. 476 and 504; 1964, United Nations, 1970, p. 301; 1972, Sweden, 1973, p. 75.

Switzerland -- 1937, United Nations, 1951, p. 311; 1950-1952, 1964, and 1972, Cuenoud, 1974.

United States -- 1934-1936 and 1949-1951, Keyfitz and Flieger, 1968, pp. 146 and 150; 1957, U.S. National Center for Health Statistics, 1970, pp. 1-7; 1972, Gibson, 1974.

this high partly because of continuing high rates for three countries: nearly 4,000 for Ireland, 3,200 for New Zealand, and over 2,700 for Australia. The average for the remaining 14 countries was slightly below 2,100.

Even more notable is the fact that one major industrial nation, the Federal Republic of Germany, now has a negative rate of natural increase. In 1973 this country had a birth rate of 10.2 and a death rate of 11.8, yielding a rate of natural decrease of 1.6 per 1,000. This represents an excess of 97,000 deaths over births in a population of 61 million. The total fertility rate for 1973 is estimated to be about 1,500. The total fertility rate for Finland is also estimated to be near 1,500 in 1973. Thus, we are now beginning to see rates below the lows recorded in the 1930's.

In an effort to identify some of the factors underlying these broad trends, I have divided the total fertility rate into two components: the portion accounted for by births to women below age 25 and the portion accounted for by births to older women. For example, a total fertility rate of 2,200 might be divided into 1,000 births to women under 25 and 1,200 births to older women.

When we look at the postwar fertility cycle with the use of this simple analytical device, we find that rates at the younger and older childbearing ages increased by about the same absolute amounts between the 1930's and the early 1950's. Following this initial rise, the increase at the younger ages continued, but the increase at the older ages tapered off.

The early postwar increase at the older ages comprised births to women who belonged to the birth cohorts of 1911–1920 and entered the childbearing years of life in the 1930's, when fertility rates at the younger ages were very low. If any portion of the postwar fertility cycle deserves the name "compensation" it is this one, insofar as high fertility at the older ages can be interpreted as compensating for low fertility at the younger ages.

After the early 1950's, fertility rates at the younger ages increased more rapidly than those at the older ages. This movement reflected the trend toward much younger childbearing by the birth cohorts of the 1930's, who entered the reproductive years of life in the postwar period. It culminated in the high rates at ages under 25 observed in the 1960's among women belonging to the cohorts of the late 1930's and the 1940's.

Overall, more than half of the rise in the total fertility rate from the lows of the 1930's to the highs of the late 1950's or early 1960's is due to increased fertility at the younger ages. In the countries under review, the portion of the total fertility rate accounted for by births to women under age 25 rose by 93 percent (Table 2). The fertility rates of older women, however, rose by only 28 percent. The net result was a substantial downward shift in the ages at which women gave birth.

These changes were accompanied by steep increases in the proportions married by the younger ages. The proportion of women married by ages 20–24 rose from an average of 30 percent in the 1930's to 51 percent in the 1960's (Table 3). The decline in age at marriage in Europe and the implications of this trend for period fertility rates were pointed out by Glass (1968) six years ago.

Since the mid-1960's, fertility rates at all ages have declined, but the reductions have been much less among the younger than the older women. Among 17 countries for which 1971 or 1972 rates could be obtained, the total fertility rate declined an average of 800 points from the high values observed eight to ten years earlier (from 3,100 to 2,300), but women under 25 accounted for only about 200 points of this drop. All of these countries still have fertility rates at the younger ages that are well above the rates ob-

TABLE 2.—Percentage Change in the Age Components of the Total Fertility Rate for 18 Selected Countries: 1930's to 1960's and 1960's to Early 1970's

	Percentage Change in Age Components of Total Fertility Rate					
	1930's to 1960's[a]			1960's to Early 1970's[a]		
Country	All Ages	Under 25	25 and Over	All Ages	Under 25	25 and Over
Australia	62%	114%	41%	-22%	-16%	-25%
Austria	70	108	52	-25	- 9	-36
Belgium	37	57	27	-18	- 7	-24
Canada	46	101	26	-49	-46	-50
Czechoslovakia	31	80	6	--	--	--
Denmark	23	71	2	-22	-24	-21
England and Wales	57	104	38	-24	-14	-30
Federal Republic of Germany	25	39	20	-32	--	-46
Finland	21	63	8	-41	-24	-50
France	38	35	40	-16	- 9	-20
Ireland	31	72	25	1	26	- 4
Netherlands	21	74	11	-32	1	-42
New Zealand	94	171	67	-23	- 8	-32
Norway	61	211	25	-19	- 6	-27
Scotland	40	76	25	-26	-13	-33
Sweden	46	110	23	-23	-19	-25
Switzerland	52	131	32	-28	-19	-33
United States	85	121	61	-46	-46	-47
Average	45	93	28	-26	-17	-31

a- These are the percentage changes between rates in the appropriate columns of Table 1.

served in the 1930's (the average excess over the 1930's is 59 percent), and most of them (13 out of 17) have rates at the later ages that are below the lowest levels observed in the 1930's.

The essential meaning of these trends at the younger and older childbearing ages is that the postwar rise in fertility was brought about, to a major extent, by changes in the age distribution of childbearing. The early rise reflected rising rates at the older ages for earlier cohorts and at the younger ages for more recent cohorts. The maintenance or increase of total fertility rates until the early 1960's was due largely to the continuing tendency toward younger childbearing.

It is still difficult to estimate the extent to which the postwar rise in fertility was brought about by increases in completed fertility rates, that is, in the average number of children per 1,000 women that a cohort has borne by age 50. It is certain, however, that the increase in completed fertility rates for cohorts will be less than the rise in period total fertility rates between the 1930's and the 1960's. In the United States, the rise in the total fertility rate between 1936 and 1957 was 85 percent, but the rise in the completed fertility rate between the cohorts of 1911–1915 and 1931–1935 will be only about 40 percent. In eight countries for which I was able to make very rough estimates, the maximum rise in period

TABLE 3.—Percentage of Women Ever Married by Ages 20–24 for 18 Selected Countries: 1930's and 1960's

Country	1930's		1960's	
	Year	Percentage	Year	Percentage
Australia	1933	31.2%	1966	59.7%
Austria	1939	31.6	1967	51.9
Belgium	1930	40.5	1961	56.5
Canada	1931	36.9	1966	55.8
Czechoslovakia	1930	38.1	1966	65.9
Denmark	1935	31.6	1965	54.6
England and Wales	1931	25.8	1966	58.7
Federal Republic of Germany	1939	36.3	1966	50.0
Finland	1930	23.7	1965	46.1
France	1936	50.7	1968	43.9
Ireland	1941	12.4	1966	25.2
Netherlands	1930	24.6	1967	47.1
New Zealand	1936	28.2	1966	61.1
Norway	1930	18.7	1960	50.3
Scotland	1931	22.9	1966	54.0
Sweden	1935	21.7	1965	42.6
Switzerland	1930	17.6	1960	34.7
United States	1930	53.9	1967	67.2
Average		30.4		51.4

Sources: Census data as reported in various editions of the United Nations' Demographic Yearbook.

rates averaged 50 percent and in cohort rates only 20 percent (Table 4). Unfortunately, the data required for accurate comparisons are not yet available, but the general tendency is clear. It establishes the finding that the postwar elevation of period fertility rates was influenced to a major degree by changes in the age patterns of childbearing. It also confirms the wisdom of Glass's (1968, p. 3) warning, "Changes in marriage patterns and in birth spacing, as well as in ultimate family size, combine to make the use of period rates very hazardous in measuring or interpreting fertility trends."

An inspection of the changes in fertility rates by age and calendar year suggests that in most countries the cohorts of the 1930's will have higher completed fertility rates than adjacent cohorts. These cohorts began their reproductive careers early in the postwar period; they reached the ages of highest fertility in the late 1950's or early 1960's, and they did not begin to show lower rates at the older ages, in comparison with previous cohorts, until 1965–1969. By 1970, they had borne 94 to 97 percent of their ultimate total number of children.

Estimates of completed fertility for the 1931–1935 cohorts in eight countries vary from a low of 2,157 for Sweden to 3,238 for the United States.

Parenthetically, although the estimate for Sweden seems low—at 2,157 it is

TABLE 4.—Comparison of Increases in the Total Fertility Rate, 1930's to 1960's, and in the Completed Fertility Rate, Cohorts of 1911–1915 to 1931–1935, for Eight Selected Countries

Country	Total Fertility Rate			Completed Fertility Rate		
	Low (1931–1939)	High (1955–1965)	Percent Change	1911–1915 Cohorts	1931–1935 Cohorts	Percent Change
Belgium	1,968	2,692	37%	2,178	2,334	7%
Canada	2,693	3,935	46	2,761	3,058	11
Denmark	2,137	2,630	23	2,299	2,400	4
England and Wales	1,835	2,889	57	1,750	2,371	35
Norway	1,848	2,968	61	1,851	2,492	35
Sweden	1,703	2,492	46	1,944	2,157	11
Switzerland	1,753	2,668	52	1,805	2,230	24
United States	2,040	3,767	85	2,316	3,238	40
Average	1,997	3,005	50	2,113	2,535	20

Sources: Total fertility rate: see Table 1.
Completed fertility rate, 1911–1915 cohorts: Except for Canada, Denmark, Sweden and the United States, these rates were estimated by dividing the total number of children ever born (generally reported by currently married or ever-married women) by the total number of women for ages 45–49 in Censuses taken in 1960 or 1961. These estimates would differ from those calculated from birth registration statistics for a variety of reasons, but are considered sufficiently accurate to serve the illustrative purposes for which they are used in this table. For Denmark, Sweden and the United States, rates were taken from cohort fertility tables. For Canada, data on numbers of children ever born and women for ages 55–59 in the 1971 Census were used.
Completed fertility rate, 1931–1935 cohorts: Except for Denmark, Sweden, the United States (for which cohort fertility tables are available), and Canada, completed fertility rates were estimated by interpolating age-specific fertility rates between 1945 and 1969 and by extrapolating rates at ages 35–39 and older between 1970 and 1984. For Canada, an estimate was made of the cumulative fertility rate at ages 35–39 from data in the 1971 Census and extrapolated to ages 50–54 in 1986.

barely above replacement—it is a realistic estimate based on an excellent series of cohort fertility tables prepared by the Swedish Central Bureau of Statistics. It is worth noting that Sweden's total fertility rate was consistently above this maximum cohort level for 26 years (from 1942 until 1967), reaching nearly 2,500 in 1964. This provides an excellent illustration of the extent to which period rates can consistently exceed maximum cohort rates over long periods of time because of changes in the age distribution of childbearing.

By the late 1960's, fertility rates at the older ages were declining rapidly. In the 17 countries for which I was able to obtain recent data, these declines extended into the early 1970's. This very strong downward trend shows that the cohorts that recorded the highest fertility at the younger ages, generally the cohorts of the late 1930's or early 1940's, are having much lower fertility at the older ages in comparison with previous cohorts and will probably have lower completed fertility rates than the cohorts of the early 1930's. This trend refutes the generalization, "earlier means more," that was at one time dangerously close to becoming part of the conventional wisdom of demography. The entire postwar experience of certain areas of Eastern Europe also refutes this generalization, as

I shall show later. Regardless of how much earlier childbearing may be associated with higher completed fertility in cross-sectional studies, they are not necessarily associated in time series or in international comparisons.

A crucial question I have tried to address, but with little success, is whether the increases in completed fertility rates have been due to larger proportions of women becoming mothers or to higher numbers of births per mother. In other words, do the increases we have seen reflect primarily changing decisions by couples to marry and have any children or do they reflect changing decisions by couples who are already parents to have more children? My tentative answer is that the rise in cohort completed fertility is due primarily to the spread of childbearing to larger proportions of women, but the evidence on this point is still slim. In the United States we can demonstrate that about 40 percent of the rise in completed fertility from 2,300 to 3,200 between the cohorts of 1911–1915 and 1931–1935 was due to more mothers and that 60 percent was due to more children per mother. But I suspect that increases in the proportion of women becoming mothers was even more important in other countries. The evidence for this consists of (a) relatively high proportions single or married and childless for the cohorts of 1911–1915, suggesting that only 70 to 80 percent of women became mothers in these cohorts and (b) first birth rates in the late 1950's and early 1960's consistent with proportions close to 90 percent having children among the cohorts of the 1930's. I am aware of the fallacy of mistaking period rates for cohort rates, so I do not regard this evidence as conclusive. I am, however, looking forward to the publication of recent Census data on children ever born, which should provide definitive evidence on this point for several countries.

I should like now to return to my earlier observations about the postwar rise in fertility at the younger ages. This trend represents a significant break with the past. In Sweden, for example, the fertility rates at ages under 25 in the 1960's were the highest observed in that country in a series that extends back to 1778 (Keyfitz and Flieger, 1968, pp. 462–509). In 1964, the portion of Sweden's total fertility rate accounted for by births to mothers under age 25 was 970, but 186 years earlier it was only 610. By the middle of the Nineteenth Century, fertility at the younger childbearing ages was still further reduced to only 410.

Fertility at the younger ages began to rise in Sweden in the late 1800's, reaching almost 700 in 1908–1912, but fell back to levels close to 500 in the 1930's. Not until the 1960's did this rate begin to approach 1,000.

A series of fertility rates for Norway extending back to 1874–1876 shows a rate of 542 for the younger childbearing ages in those years (Kuczynski, 1928, p. 38). After rising to 610 in the early 1920's the rate dropped to 354 in the 1930's and rose to 1,104 in 1968, the highest level recorded for that country (Norway, 1973, p. 20).

A series for England and Wales extending back to 1861 shows a rate of 909 for ages under 25 in that year (Keyfitz and Flieger, 1968, pp. 520–539). The rate fell to nearly 500 in the 1930's but rose to 1,109 in 1966. As recently as 1972, the rate at the younger childbearing ages was still above the level observed 100 years earlier.

The historically low fertility rates at the younger childbearing ages in the countries of Northern and Western Europe were due largely to socially imposed limitations on the proportions of men and women marrying and restrictions on the ages at which marriage occurred. After marriage, fertility tended to be high, but the fertility of the female population as a whole was only moderate. The association between fertility and restricted ac-

cess to marriage has been developed and documented by Davis (1956, pp. 243–255), van de Walle (1968, pp. 486–501), Matras (1965, p. 351), and others.

The great declines in fertility after the middle of the Nineteenth Century occurred almost entirely at the later childbearing ages, reflecting reductions in marital fertility.

In summary, the long-term decline of fertility in the developed countries of Northern and Western Europe was accompanied by restricted fertility at the younger childbearing ages, which occurred relatively early in the demographic transition, and by sharp reductions of marital fertility in the Nineteenth and early Twentieth Centuries. Both of these trends culminated in relatively low rates at all childbearing ages by the middle of the 1930's.

I suggest that the recent trend toward sharply higher fertility rates at the younger childbearing ages resulted, in part, from the continuation and acceleration of the long-term movement toward earlier marriage and toward reliance on the control of fertility by contraception, abortion, and sterilization. As methods became available with which to limit marital fertility, the marriage ceremony was no longer regarded as the prelude to a highly uncertain reproductive career. And as methods became more reliable, easier to use, and safer, the utility of late marriage declined still further.

Whether the increasing availability and reliability of the technology of fertility control can properly be regarded as a cause of earlier marriage and the resulting rise in fertility at the younger ages is a question that cannot be settled by the data reviewed here. Van de Walle (1968), suggests that in the late Nineteenth Century the increased use of fertility control techniques within marriage made it possible for age at marriage to decline but did not initiate the trend. He states, "... the decline in age of marriage was not provoked by a decline in marital fertility; the latter was a permissive agent without which the nuptiality trends would not have persisted in the long term" (p. 499).

In my view, this interpretation is still valid. The improved effectiveness of fertility control within marriage may have facilitated the movement toward younger marriage, younger childbearing, and higher proportions marrying and having children. But improvements in technology alone are not sufficient to account for these trends. If they were, fertility would remain permanently high at the younger ages, and the recent moderate declines in fertility at ages under 25 indicate that this is not the case.

The postwar movement toward younger marriage and childbearing was probably also influenced by improved economic conditions and by the assumption of greater responsibility by national governments for many of the costs associated with parenthood: education, medical care, and, in some instances, living costs through family allowances. These social and economic supports for child rearing may not have increased completed fertility greatly, but they have probably made it possible for many couples to begin their families earlier and for higher proportions of couples to marry and have any children.

The trends of the past four decades suggest that couples now respond to varying social and economic conditions more by changing the ages at which they marry and have children than by changing the total number of children that they have.

There have been many exceptions to the prevailing patterns in the developed countries reviewed here. One of the more interesting has been in Eastern Europe, where fertility rates at the younger ages were already high in the 1930's and showed little tendency to rise or fall in the postwar period. In general, these countries went through the demographic transition later than did the countries of

Western Europe. Bulgaria provides an excellent example. Kuczynski (1931, p. 162) shows that in 1901–1905 Bulgaria had a total fertility rate of nearly 6,600, composed of 1,600 at ages under 25 and 5,000 at ages 25 and over. By 1934–1935, the total fertility rate had declined to 3,500, as shown in Table 5, but the rate at ages under 25 had lost only 300 points, bringing it to 1,300, whereas the rate at ages 25 and over had declined by nearly 2,800 points to a level slightly above 2,200. In other words, the decline of fertility in Bulgaria was due almost entirely to the decline of marital fertility, accompanied by little change in the proportions marrying or restrictions on young age at marriage. In 1934, 66 percent of the women 20–24 years of age in Bulgaria were married. This contrasts with levels of 22 to 40 percent in Western Europe. During the postwar period, Bulgaria showed no tendency to raise fertility rates at the younger childbearing ages. In fact, they remained relatively constant between 1,200 and 1,400. However, the rates at the older childbearing ages continued to decline sharply until they reached some of the lowest levels ever observed. In 1967, the rate for ages 25 and over in Bulgaria was only 803. Now Bulgaria is one of the few countries where women bear more children before age 25 than afterward. Other countries recently exhibiting this pattern are also in Eastern Europe and include Czechoslovakia, Hungary, and the Democratic Republic of Germany.

A similar trend appears to have occurred in parts of Yugoslavia. According to Kuczynski (1931, p. 164), the total fertility rate in the Kingdom of Serbia was 5,662 in 1900–1901. This was composed of 1,596 at ages under 25 and 4,066 at later ages. In 1950–1954, the autonomous region of Serbia Proper (which includes most of the area in the previous Kingdom) had a total fertility rate of 1,202 at ages under 25 and 1,652 at later ages. By 1967, the rate was still 1,136 at ages under 25 but had dropped to only 830 at ages 25 and over (Rasevic, 1971, p. 127). A similar trend can be shown with historical data for Croatia-Slavonia and modern Croatia.

Another exception to the prevailing pattern is represented by Italy, Portugal, and Spain. Fertility in these countries did not show an extended elevation in the postwar period but tended to remain constant or decline in comparison with prewar levels (Table 5). These countries have had relatively small increases in the proportion of women married by ages 20–24 and small increases in childbearing at ages under 25. By the early 1970's, the rates for ages under 25 were still rising in all of these countries, according to data kindly provided by their statistical offices. In Portugal, for example, the total fertility rate of 3,100 in 1970–1971 was composed of a rate of 926 for ages under 25 and 2,174 for ages 25 and over. The 926 was higher than rates observed earlier in the 1960's and well above the prewar level of 836 observed in 1935. Perhaps the trend toward earlier childbearing is occurring later in these countries than in the countries of Northern and Western Europe.

Japan's fertility patterns also differ from those described for other developed countries. Fertility was lower at all ages in the postwar period than before World War II, and rates at ages under 25 were still well below prewar levels in 1972 (Table 5), although they were rising above values observed in the 1960's.

I have tried to show how changes in the age distribution of fertility rates have extended the postwar rise in fertility into the 1960's in a number of developed countries. I have also attempted to relate these changes to the way in which the long-term transition to lower birth rates was accomplished in these countries. In countries where lower fertility was achieved, in part, by restricted access to marriage—particularly by the practice of late age at marriage—age at marriage

TABLE 5.—Age Components of the Total Fertility Rate for Nine Selected Countries: 1930's–1972

Country	Low Values (1930's)[a]				Early 1950's				1963				Latest Available Data			
		Total Fertility Rate				Total Fertility Rate				Total Fertility Rate				Total Fertility Rate		
	Year	All Ages	Under 25	25 and Over	Year	All Ages	Under 25	25 and Over	Year	All Ages	Under 25	25 and Over	Year	All Ages	Under 25	25 and Over
Eastern Europe																
Bulgaria	1934-35	3,501	1,258	2,243	1950-52	2,619	1,192	1,427	1963	2,189	1,251	938	1968	2,287	1,370	917
Democratic Republic of Germany	--	--	--	--	1952	2,390	1,000	1,390	1963	2,513	1,249	1,264	1967	2,273	1,226	1,047
Hungary	1935	2,480	902	1,578	1950-52	2,549	1,092	1,457	1963	1,819	937	882	1972	1,927	1,053	874
Poland	1931-32	3,525	850	2,675	1950	3,705	1,165	2,540	1963	2,695	1,140	1,555	1972	2,235	975	1,260
Yugoslavia	--	--	--	--	1950-52	3,581	1,160	2,421	1963	2,639	1,127	1,512	1971	2,359	1,112	1,247
Southern Europe																
Italy	1936	2,863	617	2,246	1950-52	2,402	591	1,811	1963	2,491	697	1,794	1971	2,370	792	1,578
Portugal	1935	3,630	836	2,794	1950-52	3,207	756	2,451	1963	3,099	840	2,259	1970-71	3,100	926	2,174
Spain	1940	3,063	492	2,571	1950	2,468	449	2,019	1963	2,843	555	2,288	1970-71	2,894	707	2,187
Japan	1937	4,396	955	3,441	1950-52	3,297	776	2,521	1963	1,979	508	1,471	1972	2,175	602	1,573

a- These are the lowest total fertility rates that could be found in the pericd 1931-1939 in the sources searched (see Sources for this table). Since rates were not always available for all years, in a few cases the values shown here may not be the lowest actually experienced.

Sources: Bulgaria -- 1934-1935, League of Nations, 1945, p. 52; 1950-1952 and 1963, Keyfitz and Flieger, 1968, pp. 268 and 274; 1968, United Nations, 1970, p. 384.

Democratic Republic of Germany -- 1952 and 1963, Keyfitz and Flieger, 1968, pp. 340 and 347; 1967, United Nations, 1970, p. 388.

Hungary -- 1935, League of Nations, 1943, p. 48; 1950-1952 and 1963, Keyfitz and Flieger, 1968, pp. 364 and 370; 1972, Klinger, 1974.

Poland -- 1931-1932, League of Nations, 1945, p. 54; 1950, 1963, and 1972, Poland, 1973, p. 147.

Yugoslavia -- 1950-1952, Keyfitz and Flieger, 1968, p. 546; 1963, Rasevic, 1971, p. 122; 1971, Breznik, 1974.

Italy -- 1936 and 1950-1952, Keyfitz and Flieger, 1968, pp. 390 and 391; 1963, United Nations, 1970, p. 300; 1971, Italy, 1974.

Portugal -- 1935, League of Nations, 1943, p. 49; 1950-1952 and 1963, Keyfitz and Flieger, 1968, pp. 440 and 446; 1970-1971, Pais Morais, 1974.

Spain -- 1940, United Nations, 1951, p. 311; 1950 and 1963, Keyfitz and Flieger, 1968, pp. 456 and 460; 1970-1971, Bermejo, 1974.

Japan -- 1937, League of Nations, 1945, p. 52; 1950-1952, Keyfitz and Flieger, 1968, p. 226; 1963, United Nations, 1970, p. 381; 1972, Kobayashi, 1974.

declined and fertility rates at the younger ages increased dramatically in the postwar period. Where late marriage and late childbearing were not commonly practiced, as in some areas of Eastern Europe, high fertility at the younger ages tended to be maintained throughout the postwar period.

In this view, the postwar rise of fertility in certain developed countries did not represent a fundamental reversal of the long-term transition to low fertility rates but was the result, in part, of the way in which that long-term decline took place.

The details and complexities of these broad movements provide largely unexplored opportunities for research that can profitably be addressed with the use of comparative studies. I emphasize the comparative approach because the trends I have described are not uniform but vary in their timing and magnitude from one country to another. In some countries, such as Australia, New Zealand, Canada, and the United States, the changes were dramatic; in others, such as Sweden, they were moderate. Obviously in a field as complex as the relationship of fertility to social and economic change, many factors can influence couples' marriage and childbearing decisions and the effectiveness with which they control their fertility. Comparative studies should make it possible to ascribe these variations to differences in the social and economic characteristics and trends of the countries involved.

Fortunately, there are impressive efforts under way to encourage the comparative approach. Certainly a major facilitating factor has been the publication of population statistics for all countries in the world by the United Nations. A recent example of the effectiveness of comparative research is the study of declining fertility in Europe since the middle of the Nineteenth Century being conducted by Ansley Coale and his colleagues at Princeton and other universities in the United States and Europe. Two major research projects that will shed a great deal of light on recent trends in fertility in the developed countries are being conducted by the Economic Commission for Europe under the direction of Jerzy Berent. One is based on data from censuses and vital registration and the other on recent fertility surveys in 12 countries. In addition, the World Fertility Survey, under the direction of Sir Maurice Kendall, will include a component designed to obtain comparable data on fertility from the developed countries.

These studies, in addition to individual country studies, will help us to understand much better than we now do how societies provide for the transmission of human life after the transition to low fertility has been achieved.

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