

DEMOGRAPHIC DESTINIES

Interviews with Presidents of the Population Association of America

Interview with Barbara Entwisle PAA President in 2007



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)

BARBARA ENTWISLE

PAA President in 2007 (No. 70). Interview with John Weeks, Dennis Hodgson, Karen Hardee, Emily Merchant and Win Brown via Zoom, since we were all self-isolated at home due to Covid-19, May 20, 2020.

CAREER HIGHLIGHTS: Barbara Entwisle was born in 1955 in Massachusetts, but grew up in Maryland, where her mother, Dr. Doris Entwisle, was a renowned professor of sociology at the Johns Hopkins University. She received her A.B. (with distinction) in Sociology-Anthropology from Swarthmore College in 1975, her M.A. in Sociology from Brown University in 1978, and her Ph.D. in Sociology from Brown University in 1980. After completing a Postdoctoral Fellowship and Research Associateship at the University of Michigan, she taught briefly at Dartmouth College before accepting a position at the University of North Carolina, Chapel Hill in 1985, where she has been since, as Assistant Professor of Sociology (1985-89), Associate Professor, (1989-94), Professor (1994-2007), and Kenan Distinguished Professor of Sociology since 2007. From 2002 to 2010 she was Director of the Carolina Population Center at Chapel Hill, and from 2011-2016 she served as Vice-President for Research at Chapel Hill. Currently, she serves as training director of the Carolina Population Center, as well as continuing her position as Kenan Distinguished Professor of Sociology.

Dr. Entwisle has been a pioneer in the use of multilevel models, as well as in research utilizing social and spatial networks and agent-based models. Her many projects and publications highlight her conceptual and methodological contributions to our understanding of the social, spatial, dynamic, and multilevel contexts within which individuals are situated. Her work integrates elements of sociology, demography, geography and health, and encompasses research undertaken across four continents.

John Weeks: I'm John weeks and I'm Chair of the PAA history committee and PAA historian and it is our distinct pleasure today to be able to interview Dr. Barbara Entwisle, who is the Kenan Distinguished Professor of Sociology at the University of North Carolina at Chapel Hill and the past director of the Carolina Population Center-- one of the big centers of demography in the world.

I'm going to lead the interviewing of you because I've known you for a long time and, in truth, although you're younger than I am, your research has been very influential in my research, and I thank you for that. I appreciate that.

As we move on with the interview, committee members are always invited to jump in with a question if something needs to be followed up on. Then, toward the end of the interview, which normally lasts about an hour, everybody is given the green light to again jump in and ask you questions.

I would like to start off with how you got into demography. You got your BA (Phi Beta Kappa) at Swarthmore and went off to graduate school at Brown University. Tell us what prompted you to go there.

Barbara Entwisle: As an undergraduate, there were three things I really cared about a lot in terms of intellectual pursuits. One was social science, one was mathematics, and a third one was which was a demographic analysis of migration into Paris in the early 1800s and the impact it had on a musical movement at the time.

So, I got them all together and I really enjoyed that, but I didn't see how I could continue with all three. So, the music part just became a bit of, you know, hobby, but the math and the social science combined very nicely into demography for me. So that's how I decided that I wanted to

pursue demography. So, how did I go to Brown? I don't think I knew that there was any other way to do demography, other than through sociology. In your interview guide, you asked about economics and these other routes, and I just was unaware of them. So, this was the way I knew, and I went to visit Brown and was so impressed with the students who were there and the faculty who were there and I never looked back.

John Weeks: So now, this was the Sidney Goldstein [PAA President in 1975-76] era at Brown. Who were the people that you interacted with most?

Barbara Entwisle: That's a broad question. One of the people I interacted with a lot is the man I ended up marrying, Ken Bollen. But also faculty. It was Sid Goldstein and Fran Goldscheider, and Bob Potter, who was still there at the time. He was a mathematical demographer. So, you know, Sid taught the introductory seminars on demography. They were great. Everybody who went through them was very much edified by them and affected by them, as was I. Sid also taught courses in urbanization and some other things. So he was a very important person. Fran Goldscheider was my dissertation chair, so you know it was all of them who were together influencing me.

John Weeks: Then you went off to Michigan. Your first publications actually were with Al Hermalin [PAA President in 1993] at Michigan. How did that all come with that?

Barbara Entwisle: Okay, so I went to Michigan as a postdoc--initially as a postdoc in economic demography in a program that was led by Ron Freedman [PAA President in 1964-65], but Ron left right as I was getting there. So, I didn't get a chance to work with him. Evan Mueller took that program over. And so I had a one year postdoc there but pretty soon began to get to know Al Hermalin and Bill Mason, and by the end of that year was working collaboratively with them on a number of different projects--one having to do with sort of the multi-level perspective on fertility and family planning and also with Al Hermalin on issues involving family planning accessibility and impact. So, it was my great fortune, actually, to be a postdoc there and to have that opportunity and those collaborations, and that mentorship affected me for a lifetime.

John Weeks: For your postdoc, did you reach out to University of Michigan, or did they reach out to you? If I recall correctly, your husband Ken was at General Motors working as a statistician or something like that, at that time.

Barbara Entwisle: You know they had an interesting department called the Department of Societal Analysis. Very forward looking, back in the day. So yes, he was located in Michigan already. I moved out there when I was working on my dissertation, and wrote that at the kitchen table, so to speak. And yes, so I applied for the postdoc hoping that something would work out for me locally. I commuted to Ann Arbor for a while and then I just moved down there. It was a bit of a commute.

John Weeks: All right, so at Brown you got into the field of demography generally, but then at Michigan, you got into contraception and family planning issues. Is that right?

Barbara Entwisle: At Brown, I had done a dissertation on fertility. I went to Brown to study migration, but as often happens, the key class you need isn't offered until your second year. And that turns out to be very consequential. And so, you know, I took fertility. I ended up writing a master's thesis on that and then developing that into a dissertation and I didn't get back to migration again until the middle of my career, really. So, I went to Michigan already focused on fertility. What interested

them about what I was bringing was a cross national comparative perspective and the work that we were doing initially, collaboratively together, was meshing surveys from multiple countries and looking at them from a comparative multi-level perspective. Bill [Mason] and Al [Hermalin] were both bringing the micro-survey perspective, but I was bringing this other macro comparative perspective.

So, the interest in fertility predated my arrival at Michigan. But of course, Michigan in those days--I mean, what a fantastic place with the people who were there. I loved it. I couldn't imagine. I mean, just walking around, you know, as a postdoc. You don't make a lot of money, but you can do anything and Michigan was a phenomenal place to just have the doors open to you, and have phenomenal mentorship. But also, you know, all of these really exciting opportunities.

John Weeks: One of your other earlier papers was on China. Was that a connection that you'd made in Michigan, or did you actually ever go to China?

Barbara Entwisle: Oh, I didn't work on China until later. My first one was actually a single author publication, but after that I published with Al and with Al and Bill and then also with an economist named Cal Winegarden, and then some other things. Going along, I worked with Aphichat Chamrathirong from Thailand. The Thailand connection is interesting. I knew Aphichat when I was a grad student because he also got his degree from Brown. And so I was still sort of knowing Aphichat, working with him, when I was at Michigan and then later when I ended up at UNC, Ron Rindfuss [PAA President in 1991] was working with Aphichat, except through a completely different connection--through Charlie Hirschman [PAA President in 2005], actually. And so all of that converged, you know that social network notion about how all these triangles work. They all sort of converged and then Ron and Aphichat and I and some others were collaborating, but that happened a little later. The China work--I did do work in China, but that was not until I got here to North Carolina and got a grant to do some work there and actually did fieldwork there. So yes, I did spend some time there. But that was a little later.

John Weeks: Okay, well, we'll get back to Thailand, because I want to, obviously, talk about that, but I just wanted to follow your trajectory here, because after your postdoc, you went off to Dartmouth for a short while, and then off to UNC, which obviously has been your home for a long time now.

Barbara Entwisle: Right. Well, just on the Dartmouth thing. Those were days when jobs were few and far between. My husband and I both got tenure track job offers at Dartmouth and I thought we had died and gone to heaven. It was such a beautiful place to live. And I really thought when we moved there, that that's where we would spend our lives. At North Carolina, five jobs opened up one year and we were each encouraged to apply, and we did and we each came up separately in our own competition.

And then coming to UNC, I've always appreciated the fact that neither of us was a trailing spouse. So we felt, you know, right from the get-go that we were both independently wanted for who we were at that time. So yeah, I got to UNC and my big collaborator, inspiration, mentor Ron Rindfuss. This is where I got to know Ron, and you know he was fabulous. He was so generous. He was so fun to work with, and so incredibly stubborn. If you don't know this about Ron, but if you really want to stick by your guns, you're gonna have to really stick by them. So anyway, he was just terrific and we collaborated initially on this small grant to do work in Thailand. We applied soon after I got to UNC and this was with Aphichat. So this is when that circle closed.

One little story about that. So that was the first. No, it wasn't. I'd applied for other grants. But it was an early one. I applied for grants when I was still a postdoc, and applied for grants as a Dartmouth

faculty, and came actually to UNC with grants, but this was my first grant with Ron and I learned a lot. But I remember him saying, as we submitted this proposal, which was on community and contraceptive choice in Northeast Thailand--Ron said, "Well, gee, I hope the review section--the study section--doesn't figure out that this is a one-paper proposal."

John Weeks: Whoops!

Barbara Entwisle: Decades later, we were still working on it and so I just always smile when I think about that.

John Weeks: So that was the one thing in his life that Ron was wrong about...

Barbara Entwisle: Yes, that's exactly right. The one thing.

John Weeks: Now, I'm thinking about your pedigree here. At Michigan, you were working with past PAA president Al Hermalin, you go to Chapel Hill and were working with now-past PAA president Ron Rindfuss. That's not shabby!

Barbara Entwisle: I have really benefited from opportunities to work with just top-notch people who were giants in their field. And I learned. I learned a ton. So, I mean another person who influenced me here was Dick Udry, another PAA president. I didn't work directly with Dick, but Dick loved to needle me and he would always put, you know, articles that were opposing my points of view into my mailbox when I wasn't looking. Well, so it was a very intellectually stimulating environment, I guess you could say.

John Weeks: Okay. And so, now tell us about the Nang Rong experience, because over your lifetime you've published a lot with a lot of people about what's going on there.

Barbara Entwisle: Yes. So, it started out as a fairly focused project still concerned about contraceptive choice and about the ways that communities affected those choices. In my whole career, I've been interested in context as both opportunity and constraint, and so this was a chance to look at it at a micro kind of level. One of the strengths of the particular data that we started with was that there was some panel aspect to it, which was a little bit rare at the time. I was working with Ron, and also David Guilkey, who is an economist--just a terrific guy--and with colleagues Aphichat Chamrathirong and Peerasit Kamnuansilpa at Khon Kaen University in Thailand. And so this started out as a fairly focused--as Ron said, one paper sort of proposal--but as we got into the analysis we all saw the possibilities.

So, the puzzle was that Nang Rong is a fairly small place, the size of a US eastern county--13,000 square kilometers--but it's small and we were working in roughly 50 villages there.

INTERNET INTERRUPTION

Barbara Entwisle: Okay, so the puzzle was that even in this fairly constrained place, each village had a different contraceptive method that was popular, and you wouldn't really notice this if you were looking over all the data. But when you're looking village by village now there would be a pill village, an IUD village, a vasectomy village, a female sterilization village.

Now, how do you get that in such a constrained place. So, one idea was, oh, maybe it's cultural and this is a place where there are different dialects spoken and, you know, sort of an

obvious thing to look at. That's not it. You know, maybe there's something else about it. Maybe some of these are rich villages and some are poor villages. And, no, it wasn't anything that laid out that way.

In the process of doing the qualitative work what we learned was that the choice made by the first woman in the village was really influential and it was about social networks. Within villages people talked about contraceptive methods. It wasn't embarrassing. Women did, you know, especially among each other. And so whichever the method was that was popular was also the method that the most was known about, so it felt the least risky for the others when it was their turn to try and decide about a method. And so we didn't even find instances where everybody shifted. No, even under those circumstances that method was still the one that people knew the most about. So, for instance, there was a village where the IUD was very popular and there was a little child there whose name was LoopLoop. You know, sort of signifying that the child was an IUD failure. So, it wasn't, it wasn't that. It was just that what people knew about.

And so that was a very important paper for me¹ and it was collaborative with others--with Ron, Sara Curran who, you know, was a student of mine and now doing quite well on our own, and others. So, what it did was sort of focus us very much on what social networks were looking like within villages. This is at the same time when Susan Watkins was interested in sort of chatting among women in Africa, so there was there was, you know, some popping up here and there. But for us, it came up in a particular way, and then became the inspiration for a whole series of follow-on studies. So, the follow-on studies were, for one thing, collecting complete social network data within villages. It's really one of the only data sets like it anywhere. And we did that at two points in time, so we have dynamic social networks.

Also, at that time we started to move into the very beginning of the study of migration. This area we were studying was a source area of migration for Bangkok. But part of what was interesting was that, because we had a census of each village, we were following everybody. We had the opportunity to follow migrants and we did. And we were interested also in, you know, family and contraception and those sorts of things, but expanding our view.

And then we increasingly were expanding the view on the context side, beginning to look at livelihoods, beginning to look at various kinds of land use. We brought in Steve Walsh, who's a physical geographer, and when Steve first started working with us, he studied avalanches. He wasn't a social geographer. He was a GIS specialist, remote sensor kind of guy. And it was just fascinating. It was funded by different sources--by NIH, by NSF, by NASA, and by foundations. And so lots of students were trained as part of that that project. And I mentioned Sara Curran already, but there are many others.

John Weeks: Well, good. You mentioned Sara and others, and one of the things that we would like to know is--we talked about your becoming a demographer. How have you worked to make other people become demographers? What's been your approach?

Barbara Entwisle: Well, I find people who are passionate and interesting and smart and I recruit them into my projects. When Sara came to grad school, she wanted to do field work in Brazil. And I said, well, I don't have anything in Brazil, but I've got this fantastic project in rural Thailand. How about it? And so, that was the beginning of Sara's work in Thailand. I think that was a lot of it. I mean, later on, Susan Short, who's now the director at Brown, came to me and she wanted to do gender and health in

¹ Entwisle, Barbara, Ronald R. Rindfuss, David K. Guilkey, Aphichat Chamrathirong, Sara R. Curran* & Yothin Sawangdee.* 1993. "Social Networks and Contraceptive Choice in Thailand: Lessons Learned from a Focus Group Study in Nang Rong District." In Bencha Yoddumnern-Attig and Associates (eds.), *Qualitative Methods for Population and Health Research*. Salaya, Thailand: Institute for Population and Social Research.

Lesotho, in Africa. I said don't have anything in Lesotho, but I sure have this fantastic project for you in China. How about it?

And so, you sort of recruit people in, often aligned in some ways, and maybe not others. I care a lot about mentoring and so spend a lot of time on it, and I'm very proud of the students I've trained over time. I just heard about a week or so ago that Ashton Verdery, who is at Penn State (one of my last PhDs--now I'm back and we'll get to that, but I'm back as faculty again), but before I became vice chancellor, he was the last student I trained and he just was promoted and given tenure. And I heard from Yuying Tong, another student of mine, who's at the Chinese University of Hong Kong, that she was just promoted to full professor. And another student of mine, Aree Jampaklay, is now the director of the Institute for Population and Social Research at Mahidol University, Thailand.

So, I feel really proud. Leah Van Wey, you might have heard of her. She's one of the deans at Brown now, but she actually ended up working in Brazil, you know! But she trained and did her dissertation work on the Thai projects. So, you know, lots of people over time. I really feel that mentoring is customized. Otherwise, if it were a standard product, that will get boring. But every student is different--what they need, and when they need it. I've had students who wanted me to check in on them every day and other students who, if I asked them once a month how they were doing, they were like, "what's it to ya?" You know, so yeah. Most of them are in between. But, they have strengths and they have weaknesses, and so it's interesting to think about how to, you know, really invest in the strengths, how to address the weaknesses, how to put them in a position to really succeed. And the students who I've worked with have, I think, succeeded wonderfully well.

John Weeks: Now, your Carolina Population Center has, over the years, been active in recruiting students from outside the United States, right? Was that your initiative or were others doing it?

Barbara Entwisle: I did some of it, but that predated me. You know, there was a time when foundations were interested in supporting the training of students from overseas and those were wonderful days that pre-existed me at CPC at UNC, but I certainly jumped right in. So, I have trained some students from other countries, and they've gone back. But you may know that, in recent years, that money has dried up and it's been a lot harder. We do have international students and I've worked hard to recruit and retain them, but it's tough right now. You know, NSF and NIH are major supporters of grad students and they will not fund international students.

John Weeks: Right, so you've kind of stepped into one of the questions, as you know, that we want to talk about, which is the way in which funding--particularly of the population center--affects the direction of research as well as the training of students. What's your view on that?

Barbara Entwisle: Well, I think that's right. Um, let's see, just to make it clear to everybody, I became director of the pop center in 2002 and I did that 'til 2010, at which point I became Vice Chancellor for Research for six years. But in that eight-year period that I was the CPC director, I put together two R24 proposals to NIH to support the center, but when I got there they were restoring the old P30 and I think the decision that NICHD made to open that up was very consequential. You know, prior to them, there was a group of favored centers--UNC was one of them. And, you know, you had to work hard to stay in that favorite group, but it was very much a closed group. And, you know, once it opened up, the R24 just really opened it up to new universities to compete and many did successfully.

But also putting a big emphasis on bringing new disciplines in and I mean, you can probably already tell, I'm a dyed-in-the-wool interdisciplinarian, and that was so critical. It was an incentive for centers to really do that in a very deliberate way. I think it was really very much in NICHD's interest, in other words, to sort of leverage all of this activity that was going on. But

certainly that decision that got made, I think, was very consequential for research and the organization of pop centers. And so that's one that that I witnessed. Let's see. Anything else? I mean, I would say in more recent years, it seems like the feeling at NICHD is wanting to circumscribe more narrowly again what would be considered population research and what wouldn't. So, I guess I've seen this go full circle, but I'm still convinced personally of the value of this broad interdisciplinary perspective.

John Weeks: But do you feel as though, say, a graduate student coming into your program or any of the population center programs is essentially forced, if you will, to go into a particular line of research, because this is where the funding exists?

Barbara Entwisle: I'm going to waffle on that a little bit. So let me say a little bit about the CPC because then you'll understand why I'm waffling. Okay, so I'm the Training Director now at CPC and the PI of their P32 training grant. I did that back in the day, when I was director. I went through two P32s and then I have been doing it again recently. I enjoy it. It's a lot of work, but I've done it, and I know what I'm doing. You know, so I'm content for now. But the thing about the CPC program is that it's large. It has anywhere between 36 and 43 predocs and another 15 postdocs, only some of whom are supported on the P32, and lots are supported in other ways. They come from 10 different disciplinary departments, these predocs-five in Arts and Sciences and five in the School of Public Health. So, I think more than any other center anywhere, we are balanced across social science and public health science. And on the social science side. I think the students have a fair bit of flexibility about what they do. If they don't get picked up on the P32, they work as TAs, or RAs. They have choices so that if there's something they want to do that doesn't fall right along a funded research topic right this very minute they can do it, and many do. On the public health side, it's very different. And so I think those students are more constrained by, you know, needing to work on people's grants and do what's being done right now.

John Weeks: Well, so thinking about the research funding--how did you make the decision to become the vice chancellor research there? What was that about?

Barbara Entwisle: Well, okay, so I'm here at UNC where the CPC directly reports to the Vice Chancellor. So, this was, you know, sort of becoming your boss. I was going to step down from the CPC director in 2012, anyway. I think two terms is enough really for any administrative position. I think it's good for centers and departments and whatever to have new people come in from time to time. So, I had already made that decision, but I hadn't decided quite what I was doing next when the vice chancellor, who was there at the time, took another job as a provost at the University of Central Florida and then opened that position up. And I was offered the opportunity to be the interim, and I jumped at it because I thought, "Oh, how great! I can see if I even like this, see what it's about, you know, see if they like me, if this is something I would want to do." And I certainly knew the world of the centers very well.

So, it was a huge job. There were 1600 people who reported up to me. Woo. Okay. Huge. And you know the university research program at that time was almost a billion dollars. It is a billion dollars now. And in terms of the budget that I was overseeing at the time, it was about 120 million, not including all the funded research. Anyway, all of the compliance, the IRBs, the Conflict of Interest, sponsored research, the contracts and grants piece. You know, all of that administrative support side for research, plus 16 interdisciplinary centers and institutes, of which CPC was one. Big job. Very challenging and, yeah, I found out that it was pretty interesting and it was a chance to make a difference in research.

You know, so one of the things I wanted to do is move UNC up the rankings. And I sure did that in terms of federal research expenditures. Now, I think we're number five. That was my goal at the time. I think we got to six or seven when I was still Vice Chancellor, you know, four years ago. But I also wanted to do a lot to stimulate interdisciplinary research and you know there's some things that are below the surface that kind of make a difference. Just as for an instance, trying to make it possible for people in health affairs to collaborate with people in academic affairs, when one group has 12-month appointments and the other group has 9-month appointments. I mean, I knew all about this from being CPC director and I made decisions in the Vice Chancellor's office that make that a lot easier. And so there were things that people could see that I did in terms of investments in particular research directions and areas and projects and other things that they never saw but certainly appreciated.

So, you know, when I became Vice Chancellor, I had this most fantastic Chancellor--Holden Thorp, he was just awesome. And I remember when he hired me, he said, "Well, you know, you should tell me what you want to do next. If you want to be a provost or something. I could help you." And a lot of the people I knew when I was Vice Chancellor, the other vice chancellors all over the country, that's what they're doing now. But, by the time I stepped down and was thinking about it, I did not want that at all. What I wanted was... I mean, I'm very good at administration, I could do that job. I did it really well. I dealt with federal shutdowns. I dealt with state budget crises. I dealt with, you know, all kinds of other crises, as well as strategic decisions. All of that. All the people, etc. But that's not my first love.

I love research and I love mentoring and teaching and working with faculty and so, you know, that was my decision--to step back into the faculty. And I had opportunities--people knocking on doors. And, you know, I would listen and I would think, oh, you know, that could be cool. I could do that. And then I would hang up the phone and go, are you nuts? You don't want to do that. So, I'm very happy to be back in the faculty. It's been a transition, um, you know, because it was a little bit like being an assistant professor. Again, I had to start over with students. I hadn't taught undergrads in 13 years. You know, recruiting new grad students, working with postdocs, beginning projects, getting grants, getting publications in great places. But I've managed that and at this point I'm very happy with where I am.

And, you know, with the Covid-19, I was watching today a webinar and I know my counterpart Vice Chancellor for Research. That's all he's been doing, is dealing with this, and planning for this, and I could have done it, but I'm quite happy that he's doing it.

John Weeks: But unless I misread your CV, even while you were Vice Chancellor, you were publishing papers. Right?

Barbara Entwisle: I was. I was writing those in the middle of the night, practically. The Vice Chancellor job is... I don't know, in the end, that you spend any more hours than you do as faculty. The faculty are working all the time, too. But you don't have any control about when you work. And, so yeah, I did have a little bit of discretionary time and odd times and I did try very hard to keep the research going. But, then, you know, there's been a little bit of a hiatus. I'm proud to tell you, John, I have a piece coming out this month (May) in the *American Journal of Sociology*, looking at climate change and migration. collaborating with two colleagues--one was a former postdoc, and a former predoc, and I'm just so incredibly proud of that work.² So, when that got accepted, I thought "I am back!"

² Barbara Entwisle, Ashton Verdery, Nathalie Williams, "Climate Change and Migration: New Insights from a Dynamic Model of Out-Migration and Return Migration," *American Journal of Sociology*, 125:6, May 2020.

John Weeks: Okay. Terrific. Well done. Let's talk a little bit about the PAA, more specifically. You were president in 2007. Now, my recollection was that was a relatively quiet year. Were there any big issues when you were either president-elect or president or past-president? You were on the board there for three years, and had been on the board at other times. And you were also editor of Demography. So, you've been involved in a lot of things related to PAA. Are there issues that you remember around the organization that come to mind?

Barbara Entwisle: I think the big project at that time was the beginning of the Development Committee that Charlie Hirschman was leading and there was a fundraising effort. I don't know if you recall, but there were proposals that went to four different foundations and the idea was that these foundations were going to give money and that the PAA membership would match this money in contributions of various kinds. So that, I think, in total, it would be something like a million dollars. A PAA president--yours truly--had to write three of those proposals and I'm very good at NIH proposals and very good at NSF proposals, but have almost no experience with foundation proposals, so I found that to be challenging. They're very different. And so that was certainly one thing that was going on. I think there were the other usual sorts of political issues about trying to get congressional support for, you know, for the various activities of demographers and PAA and those kinds of things. It was in that, you know, happy period just before the Great Recession. I guess I was lucky from that standpoint.

John Weeks: True! Well, actually, thinking about foundations and development, Win Brown on our committee here is at the Gates Foundation. He's on the PAA Development Committee, as well. And one of the things that was just introduced was an idea proposed, and I want to get your reaction to it before the Development Committee meets again. So, Win, feel free to step in with any questions you might have. But, the idea has come up that, you know, the PAA session that we had invited you and other past presidents to be on, we had thought we had just postponed that to St. Louis, but the idea has come up that we could do that as a Zoom session, maybe in December, and try to get that to be a fundraising event because, obviously, the PAA counts on registration fees for the annual meeting as a major source of income on an annual basis and trying to make up some of that loss could be a way of trying to generate excitement among people to open up their checkbooks a little bit. But what do you think about that as a past president? Does that seem like a good idea?

Barbara Entwisle: So, I mean, I guess, first, as somebody that was asked to be on the panel, I'm happy to help in any way there. I'm so grateful to the PAA. You know, I've only missed three. I went to my first one in 1976 as a first-year grad student and I've missed three: a sudden death in the family, the birth of my daughter literally that weekend, and this one. And so, yeah, whatever I can do to help. As far as how the membership will receive it, you know, honestly, I have no idea, but I'm continually impressed with the generosity of my colleagues in demography. So, what's to lose?

John Weeks: Well, that was actually my thought. What's to lose? So, all right. In terms of the role of the PAA, obviously, you know, there are very few departments of demography anywhere in the world, and there are very important programs like yours. But, the PAA, it seems to me, has played a more important role than many professional associations in keeping the field together. What's your feeling about that and what would you think the PAA does for its membership that's different from what other professional associations do?

Barbara Entwisle: So, I told you I'm the Training Director here and one of the requirements to be part of our training program is that you go to PAA every year. And I think part of it is just to get

people in the mix. I think so much of what PAA does is the people and it's the unbelievably high quality sessions and discussion. And it's so open. You can meet anybody. Just walk up, and you know you can be a first-year or second-year grad student and walk up and, you know, introduce yourself and people are so willing to talk, you know, compared to my other professional meetings, where you don't have the big names in the field sitting right next to you in the sessions.

And so, I think it serves to integrate all of the different demographers, sort of intergenerational work-wise. And it also helps to set agendas, start conversations, research, all of that. I think it's certainly very welcoming to people from other disciplines, but it's still largely social science and increasingly some public health. But I think it's the people who are the ones who are interested to come every year that create this identity, and it's still working that way. I mean, I told you I missed only one meeting when my kids were small. Ken and I traded off on meetings and I claimed PAA, he got the ASA. So, I missed the American Sociological Association for about 20 years, but luckily for me, I got the better end of that bargain, because I got to continue to come to the PAA. I hope I answered your question.

John Weeks: Well, you know, I wasn't always looking for any specific answer. I just wanted to know how you felt about it, but during the time that you've been a member, of course, the association has gone from several hundred to more than 3000 members. Do you see a difference in how the meetings and the association works as a consequence of that demographic change?

Barbara Entwisle: You know, inevitably, and I worry that we're going to split into more than one hotel. I think it's so important to have everybody in the same place. I so appreciate that we still try to do that. You know, I want to run into people in the elevator. I want to see them in various places. I think the biggest difference is that there are so many concurrent sessions. There's no possible way to go to all of the ones that you might want to because there are often several at once that you want to go to. And I think that's too bad. The sense of intimacy, you know, there was when I first went, I think, is not quite there. But that said, you know, I still feel like I know an awful lot of people who are there and I think others do, too, when you go back year after year. So, I'm okay with the growth. I think it's good. But I do worry about that point, and this was a debate, you know, this has been a debate for a while--two hotels or one, but I'm a one-hotel sort of person.

John Weeks: Now your colleague, Bob Hummer, is coming in as president-elect. Have you talked to him about the association--about what might be expected of him, or what you expect of him?

Barbara Entwisle: Not specifically. We've talked about so many things. And of course, we've been distracted recently. When I became PAA president, here's what happened. The summer of 2006 I was down at the beach, and Ron Rindfuss happened to be at same beach, same time, and he invited me over for dinner. And it just so happened that Charlie Hirschman was visiting. And it just so happened that Phil Morgan joined us for dinner. So, there were three former PAA presidents grilling me in July about what I was going to be talking about the following, you know, April. I don't think anything like that has happened to Bob.

John Weeks: Well, probably true. But who knows? You haven't sat down to press him with some issues?

Barbara Entwisle: No. I mean, I think in an ordinary year, I would have. You know, he's become the new director of Add Health [The National Longitudinal Study of Adolescent to Adult Health], and so they just put in two proposals last week, and between that and Covid, no, I have not. But I will.

John Weeks: And are there things that you might reveal to us that you would suggest it to him, or not?

Barbara Entwisle: What would I say? So, I remember when Doug at Massey gave his presidential address [in 1996]. He asked Karen Mason [who was President-elect] to introduce him. I don't know if you remember this. And Karen stood there up on the stage and looked around. I mean, the thing about PAA is: everybody comes to that address. Looking around at 1,000 people or more in the room, and she says, "Doug. I'm really glad it's not me giving an address today!" There's nothing like it. I've never done anything like it before or since. You know, so it's a different kind of talk, and done in a different way. I usually am much more spontaneous in the way that I give a presentation. And it was this big thing. I didn't talk from a transcript and this had everybody very upset. But it was pretty tightly choreographed anyway, but I just thought, I know this about myself--if I read something, then only part of my brain's engaged, and the rest of my brain wanders off and starts to plan dinner, figure out the next paper I want to write, or something--but I'm not really there. And it comes through in the way that I give the talk. So, I didn't want to read--I really did not want to read. I had great help with the graphics. I'm just as proud of the graphics as of my presentation and that was really good. You know, there's so much that Bob can talk about. You're looking for a theme that will be sort of interesting to people no matter what their background, that will engage people no matter what their level, that will move the field forward. But what you don't want is to do a research paper. So, you're looking for that that intermediate ground. And so, you know, those are the sorts of things that I would talk to Bob about. Certainly, you know, if he wants to run ideas by me, I'd be more than happy to do that.

John Weeks: I was there for your talk, obviously, in the packed ballroom in New York, but I've read--several times--the publication in Demography that came out of that. And that's what's in my mind--what's the difference between what you talked about compared to what was published? Is there a difference?

Barbara Entwisle: Not much. You know, there are references, the sentences are complete, and there are probably better transitions. You know, when I talk, you can just say "I just finished this, and I'm going to do that." So, it's a little smoother. I didn't change it much, John. It's pretty much what I gave, but without the pretty graphics.

John Weeks: Are the graphics available somewhere, if somebody wants to go back to them? Are they on YouTube?

Barbara Entwisle: Good question. I probably should try and find them. They have a little animation in the part where I was trying to show how social networks and migration were interlinked, and how networks changed as a result of people moving. That was all animated. And, you know, the idea that contexts are consequences as well as causes of demographic behavior and events--those sorts of notions--I was communicating with graphics, as well as with words.

John Weeks: And could you say that, essentially, that would be true for somebody's career vis-à-vis social networking at PAA meetings?

Barbara Entwisle: Yes, I think you could. I'll give you a different example of that. So, every year I have a dinner for my former students, the ones who are there. And it's really fun. We all love it. We look forward to it. And, of course, it's a great pleasure for me. But one of the pleasures of it is to see

the different cohorts of students that I've worked with over the years get to know each other in the context of these dinners, and their new collaborations that come out of that. And I think that's, in a microcosm, what goes on across the whole meeting, where people are meeting each other. Connected, you know, sometimes just randomly, but sometimes through other people that they know and new collaborations start with new ideas developing. And so, yeah, I'm glad you asked that question, John, because, you know, I was trying to emphasize before in talking about the PAA that it's so much about the people, and the people who are part of it, and the identity that that creates--but all of the opportunity to connect with ideas through people.

John Weeks: Right, so I mean the PAA forever has had sort of a party night where the idea is to, you know, have a drink and socialize. But, I agree with you that so many people and organizations do have special dinners and so forth, and that does kind of ramp up, if you will, the social networking aspect of the meetings, which I think everybody agrees is what is key. I mean, yes, you learn the research that people are doing, but do you agree that the networking is probably the most important door or not?

Barbara Entwisle: I think that's really important. The other thing I really value about PAA are the discussions. I can read papers faster than people can deliver them, so sitting there listening, it's the discussion at the end that never gets published, you know, but that's so generative and so interesting and so that's part content, part people. But, I wouldn't want to underplay that. And then the panels from time to time. When there's a panel where people are engaged in debate about various kinds of ideas--those are valuable. The things that don't get into print, I guess, is what I so value about the meetings.

John Weeks: Okay. Well, of course, that's what our goal is with our panel of the Past PAA Presidents. You know, you guys all talk about things that are important and we want to have that discussion. Now I'm hoping that that other members of the committee will think of something that I should have asked, but haven't. Are you guys there? Anybody want to step up?

Dennis Hodgson: I have one question. And if I think about your career, at least my perception of it is that you really have done wonders at getting us down to a granular level where we know place and we know neighborhood and we can see context in which real change happens in particular locales. It's almost like anthropology. It's really neat to see how that works. And then I sit back and I take a look at what's actually happened globally during the exact same time period you've been doing this multi-level analysis sophisticated methodology. And then we've had global fertility change of a rather remarkable kind--just a tremendous decline in fertility and similar changes in mortality. And as someone who's an expert at multi-level analysis and particularly looking at the significance of networks and neighborhood, how do we connect the two? How do we get particular insight about understanding these global changes and demographic trends that have been happening from that kind of more local place-oriented focus? Is there a way of somehow seeing the whole story? So, I re-read your PAA presidential address. It's like, you don't want to just say, look at the locale to see, well, these are the consequences of these macro changes. This is how these neighborhoods and been impacted. You want to give more agency to the individual and argue that causality can go the other way. Have we been able to do that? Have we been able to sort of get a full story of all these monumental demographic changes that have taken place over the last 40 years? And how do we work the micro and macro together?

Barbara Entwisle: Wow, that's a really interesting and great question. So, Right. So these changes are happening over multiple levels and, you know, I used to object to what I call the trickle-down theory of

social change, which is everything's happening up here and then it just trickles down on to people. It's pretty clear that if that were the case, we wouldn't have seen the kind of change that you were just describing. And so people do have agency and the two forms of that that I've been most interested in are, you know, agency around social networks and agency around migration. And so places change as people come and go from them, and people change as a result of the places that they live in and the people they're connected with so there. It's all interconnected. I guess what I would say, though, is that I don't think we still fully understand all the ways that those interconnect. Recently, I've begun thinking again about how do we connect up the different components of population change. We specialize in dependent variables. Really, that's how the field is organized, right? You do mortality, or you do fertility, or you do migration. But really, all of these are interconnected. And I've been interested in my current work in trying to think about how to reconnect them, but I think in thinking about your question, that would be a piece of the work that would need to be done and it still needs to be done, and I hope as a field we get it done.

John Weeks: Okay, Dennis, do you have a follow up?

Dennis Hodgson: Well, I was thinking in terms of your newest piece coming out. In AJS, I mean. You've got, I think, the 21st century's big, huge, issue of climate change and its impact, particularly on the environment and how people live. And that seems like such a macro-type issue. And then, if I think in terms of wanting to get down to the more granular level, you really have to do that to understand how this is having tremendous differential impacts on people. And you've got global changes happening, but it really, you know, is just happening a little bit in New York City, and is quite different than what's going to happen in sub-Saharan Africa, in terms of climate change. It's just like we might not be impacted all that negatively, so it would be wonderful if we had the ability to somehow tell a single story that uses inputs from all the levels.

Barbara Entwisle: That's right.

Dennis Hodgson: And I don't know if anybody's succeeded at doing that.

Barbara Entwisle: I'm trying to connect them all at one level right now. So, I'm doing that in two different ways. But that climate change piece--there's a tendency to have a very simplistic view of, in this case, climate change and migration. There's a tendency to think about climate change as a push factor, and then everybody who moves becomes a refugee. And so, there are a couple of points that get lost there. One is that migration is a process. A second is that some of the people would have moved anyway. And so, you can't just, you know--you see a climate event, you can't just say everybody who moves was a climate refugee. Some of them might have moved anyway, so, you know, what's our benchmark? What's our counterfactual? The particular article in this case is an agent-based modeling effort, not trying to reproduce anything about reality, but to use reality to inspire a study in this case and to see what we could learn.

And the thing about migration is that it's a process. It's part of a system. In Northeast Thailand and in many places in the world people leave and they return and they leave, and they return. And what we found with the agent-based model in this case is that when we would perturb the system with droughts or floods--not enough to make it impossible, I mean, we're not talking about floods so bad that nobody can live somewhere anymore, but something out of recent range, but within the realm of possibility--we don't see actually much effect on migration, out-migration. And why is that? It's because people are leaving anyway. This is all part of growing up in Northeast Thailand. They leave as part of, you know, the young adult process. Where we were seeing an

effect is on return migration. What was happening is people were not going back. So, places were being depopulated but not for the reason that people were thinking. And so, the value of that was not to try and say what's going on in northeast Thailand? It's a model. It's only a model. But, it points to something that no one has been looking at, and that is, you know, it's that these movements go in two ways, and we need to be thinking more professionally as we think about this. But the model itself included fertility and mortality and all the household decisions and so forth. And that was an attempt to add a more comprehensive approach, but it wasn't, you know, a global climate change piece. It was still somewhat local.

Dennis Hodgson: We're going to want to read this.

Karen Hardee: Same here. Same here. John, can I ask a question?

John Weeks: Yes, please.

Karen Hardee: Yeah. So, Barbara, thank you so much. This is really, really interesting. I wanted to get back to PAA, because part of what we do in these interviews is also to try to be forward looking with the past presidents and ask what changes or directional shifts do you think PAA needs to make, if any, as an organization.

Barbara Entwisle: I'm not sure that a shift is needed, but there's certain things that are crucially important. Bringing in the new generation of grad students and postdocs, you know, bringing them in and keeping them, I think is certainly a piece of it. The high quality of the meeting and the value of that interaction. We've had tremendous support. I'm a big fan of Mary Jo Hoeksema and the work that she's done on behalf of GPAC [Government and Public Affairs Committee] and the organization and I think that that role has also been important. I mean, in terms of threats to demographers. You know. I don't know all of what's going on at NICHD. I'm not as well connected as I used to be, but I am kind of concerned about the long term there, and what that funding picture looks like. They've been so important to us for so long, and we have great people there. They're working their hardest. This is not a comment about them, but about the larger context of NIH, and the need to have someone, you know, who's out there sort of trying to represent the organization and our, you know, collective interests. So, I see those things.

John Weeks: Emily, did you have anything that you want to ask?

Emily Merchant: Yeah, I have a couple of questions. Thank you so much, Barbara. It's been great to hear all of this. So, in a lot of ways, it seems like your career trajectory has really tracked along with the broader history of demography and you started out kind of in fertility, moved into migration, and population and environment. And so I'm wondering if you could talk a little bit more about how you got started working on these population-environment interactions and also how you see that fitting more broadly into this interaction between demography as a discipline and the natural environment over the last several decades? And the kind of context for this question is that in, I think it was 1998, Anne Pebley's presidential address was all about how demographers have not engaged with the natural environment. Even a couple of years ago, when we interviewed Amy Tsui, she said that that was still kind of an area that demographers hadn't fully gotten into yet. So, I'm curious to hear your thoughts, as someone who is working in that area.

Barbara Entwisle: Yeah, sure. I have a couple of different answers in terms of my own career. I've

been interested in context and people in context, whether these be country context, village context, neighborhood context, my whole career. That's what I've done. And so, you know, I started out looking at context from the standpoint of policy, you know, family planning programs and things of that nature. I became interested in context in terms of, you know, other kinds of administrative data, accessibility, where people are, you know, where places are in space, largely in a more general sense, social structure in terms of social networks and how they're organized, and then increasingly the spatial and natural environments. So, for me, it's a natural extension of thinking about context in a multi-dimensional way. And that's how I do see them. In some ways, it's kind of a throwback to the old human ecology of Amos Hawley sort of notion of these sorts of multi-dimensional contexts.

That's my answer for me. Now, in terms of the field, it's interesting. I want to say a little bit differently, and I'm sort of on record in another context in saying this. In 1994, Jeff Evans [who served as PAA Treasurer from 1993-1996³], who was then at NICHD in the Center for Population Research--he was a program officer there and was leading a program to invest in population and environment. There was a big RFA that year. I can send you the link:

[\[https://grants.nih.gov/grants/guide/rfa-files/RFA-HD-95-002.html\]](https://grants.nih.gov/grants/guide/rfa-files/RFA-HD-95-002.html)

And I'll send you my reflections on it because I've just written up some comments for a handbook on population and the environment.

And so, there was a competition for funds under this. And the idea was to attract people who were working on projects that were kind of similar and sort of help them build this in. So, there were projects they got pulled in--Nang Rong, Thailand project, you know. I think I was the PI of that application in response to his RFA. Chip Mondale in Nepal got pulled in. Jack Liu got pulled in. There was some domestic stuff, too. Lori Hunter actually at that point was doing domestic work with Michael White. So, there were some of us who got funded. Andrew Foster, doing work in India at that point. So, there was a small group of us who got funded. And if you look at Anne's PAA address⁴, you'll see that there are a lot of personal communications about this, that and the other. A lot of that was the early results from the investment of NICHD in me. And, so, I was really very grateful to Anne for sort of bringing this and sort of raising it up, because the main publications out of these projects weren't really coming until 1998-99--you know, into the early 2000s. It wasn't quite ripe enough, and of course it takes forever to get published.

So, she raised it up and then, of course, made a lot of her own points about what she saw and what she thought should be done. But, I see them very much linked, and maybe just because I was so aware and I was involved in that 1994 thing. But, it's interesting what the RFA said, and I've been back recently and looked at it. It was making the point that it goes both ways, and they were interested in both, but what they were really interested in--they did not want to do macro cross-national kinds of research. That's not what they wanted to invest in. What they thought was important is looking in detail at individual sites and investing that way. And they did. And, you know, when I look now at where the field is, it's impressive compared to where it started. A couple of people--Clark Gray, Sara [Curran]--I think it's Sara, and Jacques Theron are putting together an International Handbook of Population and Environment. And there's plenty to fill it, and I want to say, that's pretty different than it was 25 years ago, when that that RFA was issued.

So, now, to move on. Shouldn't there be more? Yes, I agree, if the idea is that it still is a little bit of a fringe topic within the PAA. Not as much as it used to be, but it's not as mainstream as some topics. But, it's kind of getting there. I just think, you know, people are coming up. You know, it started from a small group. I mean, what you need to do to really do this convincingly, is you must bridge disciplines. I mean, I think, John Weeks, now I want to give him a shout-out here for, you know, his early work, sort of bridging geography and sociology and all of these kinds of

³ http://www.populationassociation.org/wp-content/uploads/PAA_Sec-Treasurers_1953-1996.pdf: (pages 256-272)

⁴ Pebley, Anne R. "Demography and the Environment." *Demography* 35, no. 4 (1998): 377-89.

fields. It's not a topic that you can do as only something. Right? You must bridge, and I think there's a lot more potential for us to bridge with earth scientists and we're doing some work here right now in eastern North Carolina where we're trying to do that. But, it's hard, and so we still have a little ways to go. I'm happy to send you my little reflections piece on this.

Emily Merchant: Thanks, Barbara. I would love to see that piece and the RFA, if you don't mind.

Karen Hardee: I would love to see those, also. Thanks!

John Weeks: Are there any other questions that committee members have for Barbara, or Barbara, that you have of us? Are there things that you want to make sure go into the record here?

Barbara Entwisle: I'm just thinking. I guess I haven't said very much about postdocs, and I guess I'd like to just jump in and try and rectify that. I've been talking about grad students so much, but the postdocs are really key, and I've had the privilege of working with some really great ones over the years. I see them as so important in the whole training program and the future of what we do. And so, I just want to have a little bit of a shout-out to postdocs. The other thing I haven't talked much about is diversity in our training and in our research and, you know, I would also want to say: no, this is an ongoing project for all of us and something I have also worked very hard on. So, I just want to say that.

John Weeks: Okay, well, thank you very, very much for everything you've done all of your professional life. We really appreciate that. Thank you for taking the time to sit down with us.

Barbara Entwisle: I want to say it's been such a privilege to be interviewed. I also hope that it's clear that, you know, I worked with and benefited from so many people over the years.

Dennis Hodgson: Thanks so much, Barbara. This was great.

John Weeks: Thank you very, very much. We appreciate it.

PUTTING PEOPLE INTO PLACE*

BARBARA ENTWISLE

Over the past two decades, there has been an explosion of empirical research on neighborhoods and health. However, although the data and approaches owe much to the early contributions of demographers and population scientists, this debt is largely unrecognized. Likewise, challenges posed in the early literature remain largely unanswered. I argue that just as demographers and population scientists were pioneers in the study of neighborhoods and health, they are uniquely poised to lead the field again. Putting people into place means explaining behavior and outcomes in relation to a potentially changing local context. A more dynamic conceptualization is needed that fully incorporates human agency, integrates multiple dimensions of local social and spatial context, develops the necessary longitudinal data, and implements appropriate tools. Diverse approaches with complementary strengths will help surmount the many analytic challenges to studying the dynamics of neighborhoods and health, including agent-based microsimulation models.

Places—local social and spatial contexts—influence nearly all aspects of people’s lives, not least of which is their health. Obviously, a family’s economic disadvantage affects the health of its members, but does living in a poor neighborhood place residents at a disadvantage above and beyond family factors? If so, how? Attempts at answering this and related questions have inspired a vast literature on neighborhoods and health in urban areas in the United States and other developed countries. Scholars of developing countries have addressed a parallel set of questions, such as whether living in a more modernized village with better access to health care leads to innovative health behaviors. Hundreds of studies have been devoted to questions of health and context in a wide range of settings, and as I will document, demographers and population researchers initially were at the forefront in setting a research agenda that persists to this day. Indeed, I argue that the conceptual frameworks, data sources, and statistical machinery prominent today were mostly in place two decades ago. Future progress requires a new perspective on the interconnection of people and places, especially on the dynamics of this interconnection, and new approaches to studying it. The conclusion argues that just as demographers and population scientists were pioneers initially, we are ideally positioned to lead research in new directions.

A VIEW OF HISTORY

The contemporary research literature on neighborhoods and health originated in the 1960s. At that time, population growth was a major concern and focus of research activity. Population growth rates globally were estimated at 2% per year (Coale 1974). Growth was a particular concern in the third world. It was clear that most future growth would be concentrated there and, further, that fertility trends would be key. There were major debates about the roles of family planning programs and social and economic change generally in bringing about fertility decline (Berelson 1969; Davis 1967; Demeny 1979; Tsui and

*Barbara Entwisle, Department of Sociology, University of North Carolina at Chapel Hill, CB #3210, Hamilton Hall 070A, Chapel Hill, NC 27599-3210; E-mail: entwisle@unc.edu. This is a written version of the Presidential Address given at the annual meeting of the Population Association of America, March 29–31, 2007, New York City. The thoughts expressed in it are my own, but I have been influenced in many ways by conversations I have had over the years with my mentors, my colleagues, the students and postdocs with whom I have had the privilege to work, and most of all, my husband, Kenneth A. Bollen. I would also like to acknowledge the support of the National Institute of Child Health and Human Development (R24 HD050924; R03 HD050217; R21 HD051776) and of the Carolina Population Center, especially the help of Bridget Riordan, Lori Delaney, Laurie Leadbetter, and Tom Swasey.

Bogue 1978). However, no one disputed that massive changes were underway or that individuals would be influenced by those changes.

Demographers at that time began to think about how the attributes of social setting might affect specific behaviors. Ronald Freedman led the development of a research program devoted to this.¹ He conceptualized individuals as living in and influenced by local community contexts and was interested in using data from multiple levels of observation to study this (e.g., Freedman 1975). Innovation in the design and collection of social surveys fielded in many parts of the world starting in the mid-1960s made it possible to investigate these ideas empirically. These surveys, collectively labeled KAP (Knowledge, Attitude, Practice) surveys, documented patterns of fertility and contraceptive use and collected information about possible determinants (with an eye to interventions). What was novel was the addition of a community component to collect data on the characteristics of local communities, typically villages. KAP surveys with a community component were administered in India, Iran, Korea, Nigeria, Pakistan, Tanzania, Thailand, and Turkey (Freedman 1974).

Freedman and his associates built on this experience to design an optional community survey for the World Fertility Survey (WFS), which was used in 17 countries in the 1970s and early 1980s (Casterline 1985:885). The WFS Community Surveys collected information on a variety of characteristics: transportation, communication, government and other institutions, health and related facilities, family planning services, schools, agriculture, and aspects of development (Casterline 1985:888–89; Freedman 1974). These were measurable features of local communities relevant to prevailing theories of fertility decline. The WFS Community Survey was designed primarily for use in rural areas, where villages constituted the primary sampling units of the survey, a research approach that still characterizes much research on developing countries. Typically, the information was collected in a group interview of village leaders.

There was tremendous excitement about the potential for the WFS community data to shed light on the determinants of fertility and family planning. In the words of Halvor Gille, the WFS Project Director, “Few would query the proposition that demographic decisions are heavily influenced, one way or another, by the community or social setting in which those concerned find themselves, to the extent that failure to take account of such factors renders attempts to paint the picture of the demographic scene seriously incomplete” (Casterline 1985:v).

A seminar was held in 1983 to review the methodology and results obtained to that point with the WFS Community Survey. In the volume based on the seminar (Casterline 1985), the sense of disappointment is palpable. Research results fell short of expectations. In his review of fertility research, John Casterline wrote, “Totaling up the statistically significant findings leaves one almost empty-handed” (1985:73). Amy Tsui, who reviewed the research on contraceptive use, also noted the generally weak community effects. In his summary observations, Freedman commented, “Overall . . . the findings are disappointing. I expected more, despite the crudeness of the measures” (1985:269). We know now that the effects of social contexts, whether they are rural villages in developing countries or urban neighborhoods in the United States, are generally modest. This was not known at the time.

There was a lot of soul-searching following from this disappointment. Some attributed the weak effects to weak methodology, including possible data quality issues, overly crude measures, lack of cultural sensitivity, absence of clear time references, and a questionable match between the sampling units in a national survey and a community of collective action

1. Freedman (1975:11) is the first to acknowledge his intellectual predecessors: the American Soldier project, which found unit as well as individual soldier effects; and a tradition of research in education that looks at school and classroom as well as individual student effects. However, whereas military units and schools are self-contained contexts with well-defined authority structures and clear rules of membership, villages, neighborhoods, and communities are not. Interest in these local contexts was a clear departure.

and common normative structure (Freedman 1985:269–71). All agreed on the need to develop clearer theory about the nature of communities and their consequences for behavior.

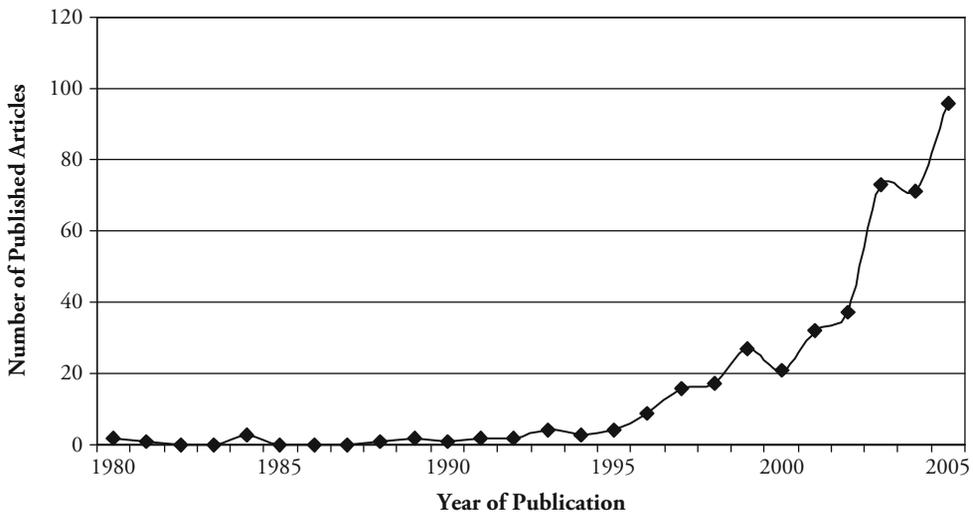
At roughly the same time, a parallel research stream emerged that considered neighborhood effects in the United States. In fact, the earliest look at neighborhood effects that fully integrated macro and micro perspectives was published in 1964 by Otis Dudley Duncan. In a reanalysis of the 1941 Indianapolis Study of Social and Psychological Factors Affecting Fertility, Duncan (1964) showed that both median rent for a tract and household rent were associated with smaller numbers of children ever born to couples in which the wife was 40–44 years old. This study linked information on census tracts with survey data on individuals, an approach that characterizes the literature on developed countries to this day.

Although the first study was published in 1964, the domestic literature was quiescent until the 1980s (e.g., Billy 1983; Hogan and Kitagawa 1985) and by the end of the decade coalesced around the study of poverty in urban neighborhoods (Mayer and Jencks 1989; Tienda 1991; Wilson 1987). Several critical reviews of this literature were published in the late 1980s and early 1990s. Susan Mayer and Christopher Jencks (1989) noted that findings about the effects of neighborhood socioeconomic status and racial mix were disparate, lacked cohesion, and varied across the outcomes they considered. They offered several explanations, including measurement inconsistencies, potentially nonlinear and interactive effects, differences in model specification, and problems associated with cross-sectional designs. Marta Tienda (1991) elaborated on the need for a more dynamic conceptualization of neighborhoods, especially for attention to sorting processes and their consequences for neighborhood differentiation. Tienda also commented on the need for an appropriate conceptual as well as operational definition of neighborhood and for more attention to the measurement and specification of transmission mechanisms.

By the end of the 1980s, a set of challenging critiques had replaced the optimism and high hopes of the earlier literature. An effective response required theory and data that did not yet exist. With respect to theory, there was a need to identify a full range of potentially relevant neighborhood characteristics and the mechanisms according to which their effects would be transmitted, and a need to embed these characteristics and mechanisms in a dynamic conceptualization of neighborhoods, points made by Sampson and his colleagues in their 2002 review (Sampson, Morenoff, and Gannon-Rowley 2002). To capture dynamics, longitudinal data on both individuals and neighborhoods were needed, along with better measures of neighborhood characteristics. Expectations about the magnitude of neighborhood effects also required adjustment.

If researchers had worked together to address these challenges, progress might have been made. Instead, the field fragmented. Since the late 1980s, there has been almost no cross fertilization between international and domestic research,² even though those literatures were initially interconnected. For instance, a special American Sociological Association session in 1989 featuring micro-macro linkages in demographic research included work in developing countries, in historical Europe, and in the contemporary United States (Huber 1991). After this, however, there was a split in the trajectories of the domestic and international literatures, with the former more focused on neighborhood pathology and negative outcomes and the latter focused on innovative behavior in the context of social change. Further fragmentation occurred within each of these literatures according to health behavior/outcome of interest and disciplinary perspective. The fragmentation of the field and the lack of communication among the fragments may help explain why the pioneering work of population scientists is largely unacknowledged in the current literature.

2. For example, an influential review of research on neighborhoods and health mentioned only one study conducted in a developing country (Sampson et al. 2002).

Figure 1. Empirical Research on Local Contexts and Health: Published Articles

THE STATE OF THE FIELD

The critiques notwithstanding, since the late 1980s, there has been a tremendous flowering of research on neighborhoods and health. A broad search of bibliographic databases for empirical research on local contexts and health turned up 503 articles.³ Figure 1 graphs the time trend. The trend is fairly flat until the mid-1990s, when publications take off.⁴

Growth has been exponential over the past decade. There are now literally hundreds of studies addressing diverse outcomes: of neighborhood processes bearing on mortality among the elderly during the 1995 Chicago heat wave (Browning et al. 2006), ambient neighborhood stress as a factor in mental health in early adulthood (Wheaton and Clarke 2003), collective efficacy and obesity among adolescents in Los Angeles (Cohen et al.

3. The search featured empirical research on neighborhoods and health outcomes in which local contexts were external to families and individuals, with measurement on both. It covered English-language articles in peer-reviewed journals published before October 2006. Local contexts included neighborhoods, census tracts, block groups, zip code areas, villages, communities, contexts, and areas. Studies of interest included measurements on these contexts—everything from poverty to family planning availability, norms to opportunity structures, and social capital to social cohesion. Studies that simply coded whether individuals live in urban or rural areas, or in cities of varying sizes, were not included. Health outcomes included self-reported health, cancer mortality, heart disease mortality, age- and sex-adjusted death rates, health care access, drug use, adolescent sexual activity, adolescent childbearing, marital timing, low birth weight, and infant mortality. Measurement of these outcomes was in terms of individuals. Not included were studies primarily interested in the effects of individual variables (e.g., socioeconomic status), with neighborhood measures serving as proxies because the appropriate individual-level variables were not available. Also not included were studies interested in ecological correlations. Given the broad parameters of the search and the multiple databases searched, a large number of potentially relevant studies were identified. Abstracts were reviewed for relevance, yielding a set of 503 articles. Because of coverage limitations of the databases (e.g., a lag between publication and inclusion), this number is an underestimate.

4. The trend shown in Figure 1 differs from the trend reported by Sampson et al. (2002) mainly because of the different criteria used to select relevant studies. Sampson et al. searched for studies having “neighborhood” or “social capital” in the title, whereas the studies here, selected based on the content of their abstracts, relate local social and spatial contexts (however labeled) to health outcomes for individuals.

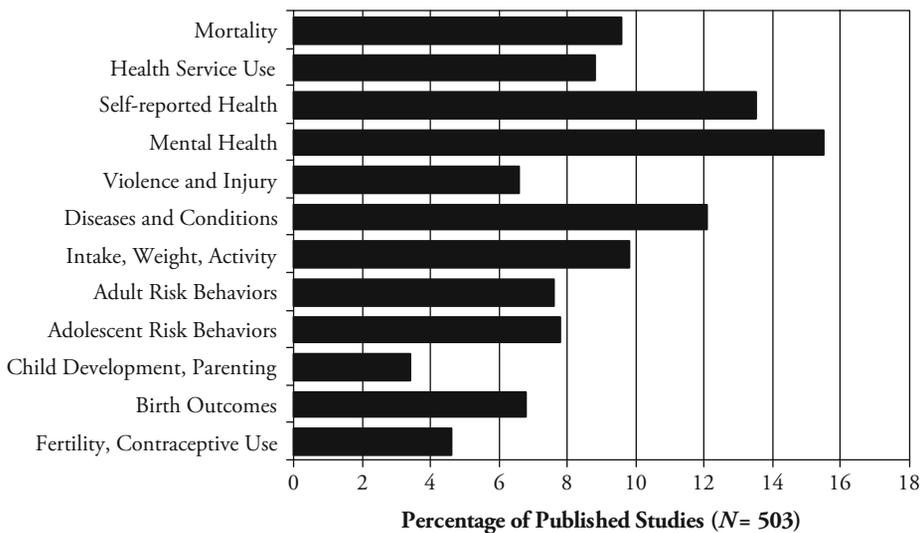
2006), neighborhood disadvantage and teen pregnancy (Crowder and Teachman 2004) and adult drug use (Boardman et al. 2001), the contextual effect of the local food environment on dietary intake (Morland, Diez Roux, and Wing 2002), neighborhood crime as a factor in preterm birth (Messer et al. 2006), neighborhood stability and psychological well-being (Ross, Reynolds, and Geis 2000), neighborhood context as a factor in violence victimization (Kaufman 2005), and inequality in the built environment as a contributor to disparities in physical activity and obesity (Gordon-Larsen et al. 2006), to name just a few.

To develop a description of this diversity, I coded abstracts for the 503 studies identified in the search of the bibliographic databases into 12 broad categories: (1) fertility and contraceptive use; (2) birth outcomes such as preterm birth, low birth weight, and infant mortality; (3) child development, well-being, parenting, and maltreatment; (4) adolescent risk behaviors; (5) adult risk behaviors; (6) overweight, obesity, dietary intake, and physical activity; (7) specific diseases and chronic conditions; (8) violence and injury; (9) mental health; (10) self-reported health; (11) health service use; and (12) all-cause and cause-specific mortality. It was possible for a study to fall into more than one of these categories, depending on its scope. Figure 2 shows the representation of health outcomes and related behaviors in the literature.

Topics central to the core areas of demography and the population sciences are included, but in contrast to the early years, they do not dominate. Whereas the earliest studies of local context and health focused on fertility and contraceptive use (see above), only a small fraction of the literature overall focuses on these outcomes. Mental health and general health are the most frequently studied outcomes, but what is striking about the histogram is the spread across topics. No single focus dominates. The wide variety of health outcomes and related behaviors that have been studied is striking.

However, the explosion of interest in neighborhoods and health has not produced equivalent improvements in the conceptualization and measurement of neighborhoods and their effects. Many of the criticisms of and challenges to the early literature still stand. I

Figure 2. Empirical Research on Local Contexts and Health, by Health Focus



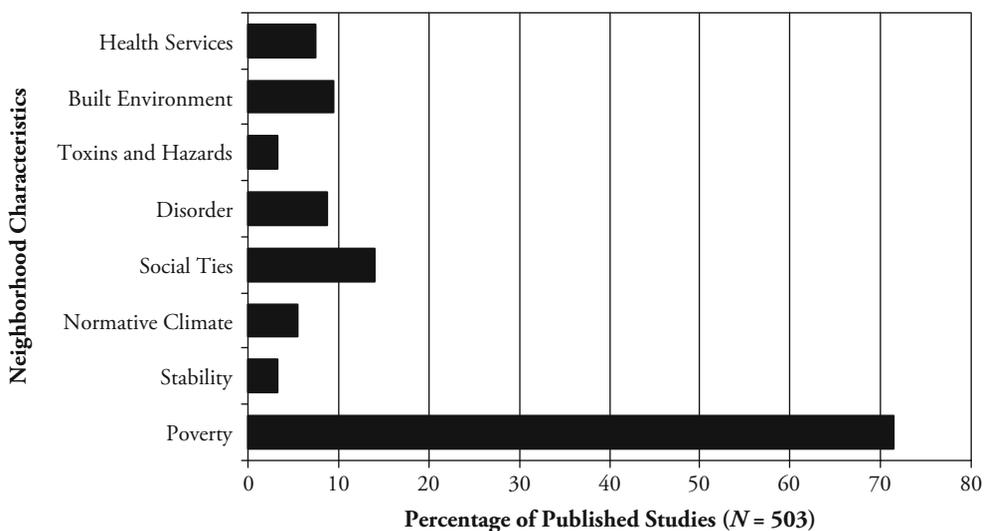
want to give particular attention to three: theory remains underdeveloped; measurement is narrow; and almost all research relies on a cross section of neighborhoods.

First, theory about context and its consequences is pretty much where it was two decades ago: exposure to varying circumstances is key. By living in a particular place, a person might be exposed to a low or high standard of living, particular normative constraints, a set of role models, a likelihood of crime, traffic noise, and so forth. The theory has it that neighborhoods are exogenous and predetermined, and individuals are the passive recipients of their effects. This “trickle-down theory of neighborhood effects” is pervasive. An influential version was recently published by Glass and McAtee (2006). Theirs is a laudable attempt to integrate diverse influences on health outcomes, from neurons to neighborhoods, from cells to society. Time is the *x*-axis. A nested hierarchy of biological and social systems forms the *y*-axis. With respect to causal influence, however, the arrow points downward, from the global to the macro to the meso to the micro to human action and behavior. There is little sense of human agency in this conceptualization and indeed, little sense of agency in any of the research that has been conducted to date.

Second, research on neighborhood effects is too narrowly focused. Figure 3 shows that the most commonly studied aspect is poverty, a category that groups together measures of structural disadvantage, inequality, and concentrated affluence. More than two-thirds of the studies identified in the literature search included measures of one of these interrelated characteristics. Certainly, the topic is important. The fact that measures are so readily available is probably also a factor. Other characteristics appear in only a minority of the studies reviewed.

Many if not all of these concepts in Figure 3 are relevant to health behaviors and outcomes. It would be difficult to make inferences about the effects of one without taking into account the effects of the others as confounders, mediators, or moderators. However, only a quarter of the studies consider two or more from the list. For instance, exposure to hazardous waste; environmental toxins related to manufacturing, mining, or agricultural

Figure 3. Empirical Research on Local Contexts and Health, by Neighborhood Focus



activities; air pollution; water pollution; and ambient noise (Evans and Kantrowitz 2002; summarized as “toxins and hazards” in the figure) is the least examined neighborhood attribute. Given that toxins and hazards tend to be concentrated in poorer neighborhoods (Pastor, Sadd, and Hipp 2001; Saha and Mohai 2005; but see Anderton et al. 1994; Oakes, Anderton, and Anderson 1996), they may be quite important to consider in a study of poverty and health outcomes. What appear to be the consequences of poverty may in reality be the consequences of air pollution or some other hazard.

Third, almost all research on neighborhoods and health involves only a single cross section of neighborhoods. Some research examines change at the individual level, but change at the neighborhood level is rarely incorporated. Only a very small minority of studies—2.4% of the 503 identified in the search—do so.

At a moment in time, it is perhaps reasonable to think of individuals as operating within and constrained by the social, spatial, and biophysical environments in which they live. Over time, it is not. We might expect a lagged effect, possibly even a cumulating effect. The few researchers who have examined this possibility have found, in fact, stronger lagged effects than contemporaneous effects (e.g., Wheaton and Clarke 2003). More is needed. As a related point, there may be especially critical times. Some evidence suggests that neighborhoods may be particularly important during childhood and adolescence (e.g., Angeles, Guilkey, and Mroz 2005; Monden, Van Lenthe, and Mackenbach 2006). Again, more research needs to be done on this.

Even more fraught is the assumption that a cross section of neighborhoods mimics what change in a single neighborhood would look like over time. This is commonly assumed in multilevel models of neighborhood effects. However, there is no single trajectory of neighborhood experience—it depends on and changes with shifts in the larger regional and national context.

Indeed, most research on neighborhood and community effects uses data collected for another purpose. Researchers often capitalize on the sample design of social surveys, operationalizing the primary or secondary sampling units as local contexts for studies of community and neighborhood effects. For instance, villages are typically the primary sampling units in surveys fielded in the rural areas of developing countries. Units of census geography typically serve as sampling units in surveys fielded in developed settings. This is efficient, but it is not clear that primary or secondary sampling units function as communities and neighborhoods in any meaningful sense, or that individuals residing there relate to them in this way.

In research based in developed countries, there is reliance on administrative and census data to characterize context—data also not designed for this purpose. These data are readily available but do not cover many of the domains of potential interest to an understanding of neighborhoods and health. This explains the limited scope of the effects considered and the prominence of easy-to-measure aggregate characteristics, such as economic advantage and disadvantage, in the domestic literature. Researchers typically draw on the most recent census data available, which in the United States, are data from the most recent year ending in a zero, at least until now. In some studies, measurement of neighborhood conditions is contemporaneous with measurement of individual behaviors and outcomes. In other studies, there may be a lag of almost a decade. Variability in lags may account for some of the differences between studies in the strength of the effects found (cf. Wheaton and Clarke 2003). With census data, examining change at the level of the neighborhood would require data covering more than a decade. Few studies follow individuals over such a long time (although see Boyle, Norman, and Rees 2004). It is easy to understand why research in developed countries has been cross sectional at the contextual level.

Research based in developing countries is much more likely to rely on special surveys as sources of data about community conditions, with particular attention to health care accessibility. These community surveys are fielded contemporaneously with the household

surveys with which they are paired, sometimes even a little later. Techniques have been developed to collect retrospective data in neighborhood surveys (Axinn, Barber, and Ghimire 1997), but they are seldom used. Multiple waves of community data may be collected as part of a longitudinal household survey, but this is not the norm. Most research uses data for a single cross section of villages or neighborhoods.

The ready availability of standard software packages for estimating multilevel models serves to reinforce a top-down approach to studying neighborhoods and health. Hierarchical modeling is consistent with the trickle-down imagery. People are nested in contexts; individual outcomes are logically the consequence of those contexts and their characteristics. Although not widely recognized, many of the multilevel models in use today are elaborations of ones proposed by demographers more than two decades ago (Mason, Wong, and Entwisle 1983).

INTO THE FUTURE: INTEGRATING MACRO AND MICRO

Given the size of the literature, it is surprising that as a field, we have not made more progress. Research appears to be guided more by the availability of data and statistical packages than a clearly articulated theory about macro and micro processes and their integration. Moving forward requires new thinking about the ways that people interconnect with places.

Most research conceptualizes people as affected and constrained by features of local environments: the “trickle down.” With respect to neighborhood effects, residents are passive rather than active agents, corresponding to the cross-sectional character of much of the data that are analyzed and with the hierarchical statistical approaches that are often taken. At a moment in time, people *are* affected and constrained by their environments. Over time, however, they may change them in a variety of ways by moving between neighborhoods and/or doing something to change the neighborhood in which they live. A theory of neighborhoods and health thus needs to incorporate agency on the part of individuals.

Agency may take different forms, four of which seem particularly relevant to an understanding of health and context. First, people make choices about the neighborhoods in which they live. Second, as a consequence of residential mobility, neighborhoods of origin and destination may be changed in both composition and structure. Third, people may operate directly to change neighborhood conditions. Fourth, people may be selective in relating to a local sociospatial context.

Residential Choice

Where people live is a matter of choice, at least to some extent. Normative climate, socioeconomic and ethnic composition, safety, accessibility, and quality of the natural and built environment may influence where people choose to live. These, of course, are all characteristics with the potential to influence health outcomes. Indeed, to the extent that there is a choice, when choosing a neighborhood, people may anticipate the consequences of living there. That school districting affects the neighborhoods in which parents choose to live is accepted as fact among real estate agents. The consequences appear in residential segregation at many levels. People may also choose neighborhoods based on their potential to enhance health and to avoid negative outcomes. Choices can be severely constrained, however. Some people become “stuck” in crime-ridden places.

There are two ways to think about the consequences of residential choice. According to one approach, residential choice is a source of bias in modeling the effects of local contexts on health outcomes (Moffitt 2001; Tienda 1991). The characteristics of neighborhoods are endogenous. The problem is particularly serious if people choose neighborhoods based on health needs. For example, with sufficient means, those with chronic illness may choose to live in communities that are well-known for excellent and accessible health care. Health is a factor in deciding where to live, the reverse of what is commonly assumed. If this potential

reverse effect is not recognized and incorporated into analysis, the estimated effects of health care services on health outcomes will be biased. In fact, it may appear that health care service availability is somehow deleterious to health!⁵ Less obvious versions of this same problem occur when some unobserved factor related to health is also related to neighborhood choice. Endogeneity bias is a problem that may be solved using various instrumental variable techniques or, less typically, experimental and quasi-experimental designs.

Alternatively, residential choice can be incorporated explicitly. As in the first approach, neighborhood characteristics are endogenous. The difference is that now residential choice is of substantive interest and is modeled, rather than handled as a methodological nuisance. Modeling the endogeneity directly leads us to think more generally about migration as a potential influence on health outcomes. For example, we need to consider possible selectivity associated with the move itself. Researchers interested in the “healthy mover” effect have concentrated on international movements (e.g., Palloni and Arias 2004). There is some suggestion in the literature that this selectivity may also operate at a more local level (e.g., Roos et al. 2004). The relevance of residential choice to neighborhood effects is obvious. It is surprising that it is so seldom mentioned in the research literature.

Consequences for Neighborhoods

Not only do people change the neighborhoods in which they live by moving, but as a consequence of these moves, neighborhoods themselves are changed. Consider an extreme example. Suppose there are two neighborhoods, one consisting mainly of persons in ethnic group A and the other consisting mainly of persons in ethnic group B. Suppose further that a minority person of ethnic group B living in the first neighborhood prefers to live in the second neighborhood, where he or she would be in the majority. All else being equal, if that person moves from the first to the second neighborhood, residential segregation would be increased in both. What is more, changes in ethnic composition may induce mobility on the part of others in the neighborhood, and so forth, in a reinforcing cycle. This example shows how individual behavior can affect a neighborhood characteristic.

Thomas Schelling (1971, 1972) developed a simple agent-based model to investigate how this process might work. Agent-based models are a type of microsimulation (Macy and Willer 2002). Agents are decision-making entities (e.g., individuals, households, firms) with unique characteristics that behave according to a set of (potentially probabilistic) rules. The idea is to project agents individually but in relation to and interacting with one another and their environment, allowing for feedbacks over time. Schelling was interested in racial segregation, household residential mobility, and neighborhood tipping points (i.e., the point at which further shifts in racial composition lead quickly and inevitably to segregated neighborhoods). His model suggested that given some simple rules and heterogeneous preferences for the composition of neighborhoods, residential segregation would be high even if the average preference was for an integrated neighborhood. Recent work by Bruch and Mare (2006) calls these findings into question (although see Macy and van de Rijt 2006). Either way, however, this line of work shows that when households move, not only do they change their own neighborhood through a kind of swap, they can actually change the characteristics of these contexts, potentially in nonlinear ways.

Movements in and out of neighborhoods can change their compositional characteristics. They can also change the social structure of neighborhoods. To show how this might work, I draw on a recently published article that explores the structure of social ties within villages in Nang Rong District, in Northeast Thailand (Entwisle et al. 2007). The surveys fielded in Nang Rong are unusual in collecting complete social network data on multiple social relations for each of the 51 villages in the sample (Rindfuss et al. 2004). With these

5. This can also happen if services are placed in areas of greatest need, in which case the endogeneity is at the community level (Angeles, Guilkey, and Mroz 1998).

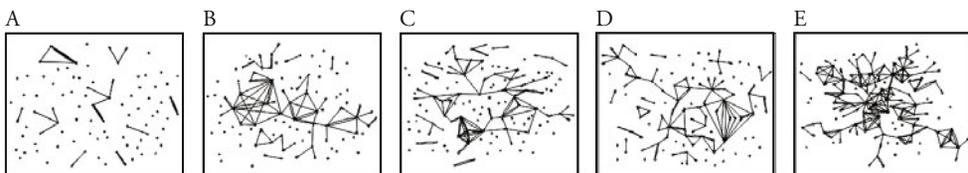
data, it was possible to describe not only the structure of social networks in a single village but also variability in this structure among villages.

Figure 4 reproduces one of the graphics from the article. In the figure, each box represents a village. The dots are households, and the lines between them denote a social relation. The upper set of boxes shows sibling relations between households; the lower set shows households that helped each other with the most recent rice harvest. The villages are identified with letters, A to E. They are the same in each set but are ordered differently. For each relation, the village at the far left has the sparsest network; the one at the far right has the densest one. Data for 5 of the 51 villages suffice to show that there is tremendous variability in the structure of these social networks. This variation was not expected in a small sample of villages coming from a fairly circumscribed area in North-eastern Thailand. What little theory exists suggested homogeneity, not heterogeneity (Entwisle et al. 2007).

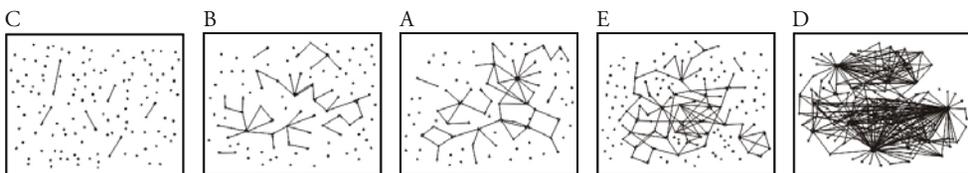
What accounts for the variability? The research needed to answer this question has not been done, but migration and residential mobility are arguably implicated. An empirical connection between migration and social networks has been demonstrated in many settings. Mostly, analysts have focused on migration and choices about where to live as outcomes and social ties as determinants. However, social networks are dynamic (Moody 2006). Social ties that are spatially based and organized will change as individuals and households move into and out of neighborhoods. That social ties are endogenous has been recognized for a long time in the literature on friendship and its consequences. It is less well recognized at the neighborhood or community level (although see Erbring and Young 1979; Manski 1993). Just as residential mobility may affect the compositional characteristics of neighborhoods, it may also affect their social relational structure. Because of their implications for access to social resources, diffusion of information, and patterns of social influence and support, the structure of social ties is potentially important for a wide variety of health and health-related outcomes.

Figure 4. Ties Between Households in Five Villages in Nang Rong, Thailand

Sibling Ties



Help With the Rice Harvest



Interventions

Through their behavior, people can change the characteristics of neighborhood contexts. They may do this indirectly, as just discussed, and also directly by intervening to change neighborhood conditions. Direct effects may involve political activity, attempts to organize residents to make improvements of some sort (e.g., traffic calming), and the like. The intervention that has attracted the attention of demographers, however, is the potential endogeneity of program placement (e.g., Angeles, Guilkey, and Mroz 1998). Health clinics and family planning outlets, for example, are often placed in areas of need, not distributed randomly as is assumed in a standard analysis. This complicates the study of their impact. In the cross section, it is even possible to find a “counterintuitive” relationship between service availability and the behavior or outcome those services were intended to address. The forces leading to a particular distribution of services need to be taken explicitly into account. The endogeneity of neighborhood characteristics occurs in many ways and at many levels.

Engagement

Just because people live in the same area does not mean that with respect to place they live in the same neighborhood (Burton, Price-Spratlen, and Spencer 1994). Within particular local social and spatial contexts, residents seek out particular opportunities and avoid particular constraints (Sharkey 2006). People make choices about where to go and with whom to associate. They may carve out their own “activity spaces” (e.g., Sherman et al. 2005), which may or may not map onto units of census geography. It is in this sense, too, that people choose their neighborhoods.

PUTTING PEOPLE INTO PLACE

The state of the literature now was largely anticipated by what was in place at the end of the 1980s. The conceptual frameworks, data sources, and statistical machinery prominent today were mostly in place 20 years ago. As well, the early critiques still apply. Moving forward requires new thinking about the ways that people interconnect with places. It also requires new data, better measures, and diverse methods with which to study these interconnections.

Neighborhoods have been variously conceptualized in the literature as local ecologies consisting of natural and built environments, catchment areas for various social and health services, markets of various sorts, and social contexts consisting of people with varying attributes, behaving in a variety of ways, and connected to one another (or not) in varying ways. As a related point, we need to recognize that local ecologies are themselves embedded in larger contexts (e.g., Morenoff 2003). It is time to integrate and develop a multidimensional conceptualization of local context. Aspects to be considered include location with respect to various opportunities (e.g., jobs, health services, gangs); visibility and social as well as spatial proximity to role models; norms and expectations about behavior in their local context; social relations grounded in space; and the distribution of social and biophysical hazards. These all involve social and spatial dimensions. Together, they describe a place.

Longitudinal data on neighborhoods are needed to address neighborhood change, both at the neighborhood level (e.g., gentrification, decay) and at the level of individuals and families as they move from one neighborhood to the next. Panel data sets following individuals can be augmented in a variety of ways. Historical census data can be linked to long-standing longitudinal data sets. Work along these lines is already underway with the Panel Study of Income Dynamics. This study started in 1968 and has been following individuals ever since. Using address information obtained in various waves, it is possible to follow individuals as they move from one place to the next. So far, the data have been linked

to census tract information (e.g., Crowder and South 2005; Massey, Gross, and Shibuya 1994; South, Crowder, and Chavez 2005).⁶ This is an important first step, but to adequately capture the multifaceted nature of local contexts, it will be important to expand beyond census-based measures. Other historical sources can be used to develop a fuller picture of change at the contextual level (e.g., historical aerial photos and satellite images). Another way to enrich a longitudinal perspective is retrospectively in the context of a community survey, with the neighborhood history calendar. The neighborhood history calendar uses directed recall techniques common in life-history calendars to collect data on key events in the history of local areas (Axinn et al. 1997). Although developed for use in developing countries, the approach might be adapted to other settings.

New data sets can and should be developed. The Project on Human Development in Chicago Neighborhoods (PHDCN) and the Los Angeles Family and Neighborhood Survey (L.A.FANS) were designed specifically for the study of health (broadly defined) in relation to neighborhoods. Both PHDCN and L.A.FANS have been innovative in their approach to the collection of contextual information. For instance, PHDCN data include a community survey, systematic social observation, and links to administrative data of various sorts in addition to census data. Both have the detailed locational information needed to link to a wide variety of other data sources and to take full advantage of spatial analysis possibilities in a GIS. For example, L.A.FANS has collected detailed information not only about where individuals live but about their (and their children's) place of regular activities such as work, school, and shopping that can be used to situate them within an activity space (Sastry et al. 2006; Sastry, Pebley, and Zonta 2002). Both studies have collected or will collect at least two waves of data at the neighborhood level. L.A.FANS will collect information about people moving into as well as out of neighborhoods. Similar data collection efforts are underway in other countries. For example, the Nang Rong (Thailand) surveys collected information about people moving into, and returning to, villages as well as about people moving out, linking this information to complete social networks, community surveys, spatial coverages, and a time series of remote imagery (Entwisle et al. 2007; Korinek, Entwisle, and Jampaklay 2005; Rindfuss et al. 2003; Walsh et al. 2005). The field would benefit from the cross fertilization of approaches in developing- and developed-country settings.

Advances in measurement will also be needed. Raudenbush and Sampson (1999; also see Sampson, Morenoff, and Earls 1999) have proposed an approach called "ecometrics," which focuses on the measurement of ecological variables. They used this approach to develop and assess measures of social and physical disorder from systematic social observation of 23,816 face-blocks in a sample of 80 Chicago neighborhoods (Raudenbush and Sampson 1999). They also used it to develop and assess measures of collective efficacy (defined as shared expectations and mutual engagements by adults in the active support and social control of children) from survey responses collected from a sample of 8,782 residents of 343 Chicago neighborhoods (Sampson et al. 1999; Sampson et al. 1997). It is important to establish the measurement characteristics of the full range of variables relevant to the study of neighborhoods and health, including measures of poverty. Publications documenting the reliability and validity of these measures encourage the use of the measures by other investigators, facilitating comparison of results across study and setting. It is also important to develop measures that are appropriate for use in a full range of settings.⁷

Finally, diverse approaches with complementary strengths will help to surmount the many analytic challenges to studying the dynamics of neighborhoods and health. Making

6. Census data have been linked to other longitudinal data sets as well, including the National Survey of Family and Households (Clarke and Wheaton 2005) and the National Survey of Children (Wheaton and Clarke 2003).

7. Systematic social observational techniques developed for use in urban areas of the United States and other developed countries could be usefully adapted for use in rural areas. Community survey approaches developed for use in the rural areas of developing countries could be adapted for use in urban areas.

causal inferences based on observational data is problematic (Moffitt 2005; Oakes 2004), even when the data are longitudinal. Given a dynamic social world, it is not clear that there is a statistical solution. The opportunity to conduct experiments is rare, and when they are done, as in the case of the Move to Opportunity Programs (e.g., Katz, Kling, and Liebman 2001; Kling, Liebman, and Katz 2007), they are limited in their generality. Microsimulation approaches such as agent-based models provide an additional approach. They can capture the multifaceted aspects of neighborhood contexts, ground them socially and spatially, and model change from the bottom up as well as top down. Micro and macro processes are endogenous in these models. As an approach and methodology, agent-based models are at the forefront in many fields. In sociology, for example, agent-based models have been used to study mobility, residential segregation, and tipping points (e.g., Bruch and Mare 2006; Macy and van de Rijt 2006; also see Schelling 1971, 1972), although they are not yet spatially explicit (Macy and Willer 2002). In geography, spatially explicit agent-based models have been developed to describe land use change in a variety of settings (e.g., Brown et al. 2005; Evans and Kelley 2004), although they do not elaborate key demographic components such as feedbacks involving migration. In economics, spatially explicit agent-based models have been constructed that include endogenous demographic components, although their focus is on subsistence economies and population growth and collapse over centuries (e.g., Axtell et al. 2002), not on shorter-term effects. Building on and integrating across these efforts has the potential to break new ground in the study of people and place, especially if dynamic social networks can be incorporated.

TAKING THE LEAD (AGAIN)

Putting people into place means explaining individual behavior and outcomes in relation to a potentially changing local social and spatial context. Over the past two decades, there has been an explosion of empirical research on neighborhoods and health. Hundreds of studies have been published on a wide range of health behaviors and outcomes. For the most part, however, the conceptual frameworks, data sources, and statistical machinery in use now were mostly in place 20 years ago. A critical need is to incorporate agency into theories of neighborhoods and health. This is a tall order, but clearly an important piece is to embed a theory of migration and residential mobility into theory of health and context. People change neighborhoods, directly by moving from one neighborhood to another and indirectly as neighborhood characteristics and structures are altered by movements of residents in and out. Progress also depends on better data—specifically georeferenced longitudinal data with multiple measures of contexts at multiple points in time. With the advent of GIS, and the ability to locate respondents with some precision, we no longer need to depend on the census to define contexts, their boundaries, and their characteristics. With diverse data, moving beyond a unidimensional concept of local context and blending social and spatial dimensions is analytically straightforward.⁸ Finally, a multifaceted conceptualization of local contexts is needed that incorporates both social and spatial dimensions. We need to draw on and integrate multiple perspectives on place: the ecologist's understanding of the "natural" environment, the geographer's interest in spatial location, urban studies' focus on the built environment, the criminologist's understanding of spatial distributions and hot spots, the sociologist's perspective on social relational contexts and normative constraints, the anthropologist's approach to the construction of social space, the economist's understanding of markets, and attention to the placement and distribution of services that would be of interest in evaluation research.

8. Such data, however, require careful handling. The locational information needed to put people into place threatens the confidentiality of their response (VanWey et al. 2005), a problem that is compounded when data from multiple sources are integrated.

Demographers and population scientists are uniquely qualified to develop theory about migration and residential choice and embed it in a theory about neighborhoods and health. We have been major innovators in the collection of longitudinal data sets and the integration of diverse data (including spatial data) into those data sets. We have substantial experience working across disciplines and can facilitate in this effort. Demographers and population scientists were pioneers in the study of neighborhoods and health. It is time to take the lead again.

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