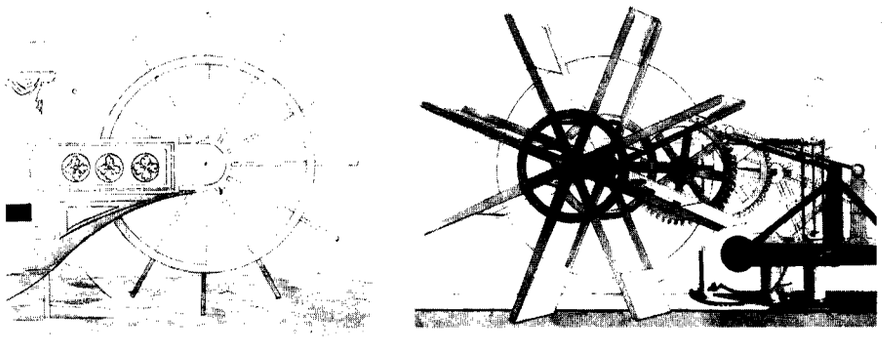

Paddle wheels patented by William Thornton (left) and Robert Fulton (right) in 1809. Fulton's "success on the Hudson established paddle wheels as the form his successors would use. Thornton [who was commissioner of the Patent Office], knowing well the characteristics of Fulton's 1807 boat, . . . granted himself a steamboat patent incorporating a stern paddle wheel. This stimulated Fulton to take out his patent based upon the side paddle wheel his boats were already using." [New York Historical Society and American Society of Mechanical Engineers, respectively; reproduced in *Emulation and Invention*]

language. Is there a professional ethnocentrism involved here that values only the cognitive modality of the scholar and scientist and relegates the visual thinking of those who work with their hands to a kind of limbo?

In the concluding chapter, "The contriving mind," Hindle makes some interesting observations on the way in which the American patent system and the American educational system have combined to obscure the realities of the process of invention. Patents and prizes are "terminal awards" that do not "have to confront directly the inventive process or the manner in which mechanical creativity functioned" (p. 130). They function, of course, as testimonials of priority, and are obviously relevant to emulation and achievement motivation. But for the historian of technology the question of priority is something of a red herring that distracts attention from the essentially collective nature of the innovative process. Likewise, the dogma that technology is merely an application of available scientific knowledge was increasingly enshrined in 19th-century scientific institutes and schools of "scientific" engineering and has fundamentally obscured the role of nonverbal, nondigital spatial thinking in the actual process of invention.

Hindle's *Emulation and Invention* will help to move the history of technology forward to a fuller recognition of the social and psychological context of the innovative process.

ANTHONY F. C. WALLACE
Department of Anthropology, University of Pennsylvania, Philadelphia 19104

A Third Look at Middletown

Middletown Families. Fifty Years of Change and Continuity. THEODORE CAPLOW, HOWARD M. BAHR, BRUCE A. CHADWICK, REUBEN HILL, and MARGARET HOLMES WILLIAMSON. University of Minnesota Press, Minneapolis, 1982. x, 438 pp. + plates. $16.95.

Problems of social change have long represented a compelling, if undeveloped, heartland of sociological inquiry. The early classics included monumental investigations of social change and the family, such as Thomas and Znaniecki's *The Polish Peasant in Europe and America* (1918–20) and E. Franklin Frazier's *The Negro Family in the United States* (1939). Both works brought refreshing vigor to the field with emphasis on the historical, ecological, and dynamic aspects of family patterns. Though soon dampened by postwar functionalism, concern with social change returned with even greater momentum during the 1960's through developments in family and demographic history. The empirical study of family change and history has never been more lively in the social sciences than at present. *Middletown Families* is part of this development and of a broader movement to assess, explain, and predict the course of social change.

The story of *Middletown Families* began in the mid-1920's when Robert and Helen Lynd arrived in Muncie, Indiana (Middletown is the pseudonym), with a research team to conduct a study of Protestantism for the Institute of Social and Religious Research. Robert Lynd had just received his B.D. from Union Theological Seminary and would soon return to New York City and Columbia University for a doctorate in sociology. With serious interests in history, social science, and philosophy, Helen Lynd was several years away from the start of a long career on the faculty of Sarah Lawrence College. The Lynds' initial plan soon evolved into an unparalleled community study with the ambition of shedding light on the process and effects of social change. Writing in *Middletown* (1929), they observed that "we today are probably living in one of the eras of greatest rapidity of change in the history of human institutions . . . it would be a serious defect to omit this developmental aspect from a study of contemporary life." To bring this dimension to their snapshot of Middletown, the Lynds assembled a wide range of documents and statistics on the community in 1890. Had funds and more time been available, they would have added data points between 1890 and the 1920's, the period of extraordinary institution-building and modernization. The limitations of a two-wave design still enabled a perception of the 1920's in Middletown as "the most recent point in a moving trend." Robert Lynd expanded this design by returning to the city midway in the Depression decade for a short period of fieldwork. Out of these data and some thoughtful comparisons with the earlier project came *Middletown in Transition* (1937), a study that centered on responses to the Great Depression.

If Middletown seemed to have become a laboratory for the study of change by the end of the 1930's, the concept soon lost favor in the postwar era. The arrival of a second-generation research team in 1976 brought Middletown back to life among sociological endeavors. Headed by Theodore Caplow, Commonwealth Professor of Sociology at the University of Virginia, and funded by the National Science Foundation, the third Middletown project encountered a city that had doubled in size (to about 80,000) and perhaps in social complexity as well. A small teachers' college in the 1920's was now a large state university. But the

"overpowering continuities" observed by Robert Lynd remained a dominant theme in the project's field observations and analyses. In Caplow's words, "A Middletown Rip van Winkle, awaking in the 1970's from a 50-year-long sleep, would have noticed innumerable changes but would not have had any trouble finding his way around town."

Middletown Families is the first of five projected volumes from the overall study; other themes will include religion, work and careers, and the public sector. These topics refer to the principal activity sectors (a concept borrowed from cultural anthropology) in the Lynds' two volumes, such as "getting a living," "making a home," "training the young," and "religious practices." Robert Lynd patterned his second study after the first in order to ensure adequate assessments of change and continuity, and Middletown III was designed to make the best of the Lynds' work as a baseline for studying change between the 1920's–'30's and the 1970's. Identical instruments for data collection were used wherever possible, but the survey scope of project III is much broader, reflecting the advantages of the computer age.

Between 1976 and 1978, the research team participated in and supervised a substantial range of data-gathering activities: the collection of documents, the coding of census schedules, field observations at community functions, and some 13 surveys. Nine of the surveys involved structured questionnaires and four relied upon interviews. Five of the surveys have special relevance to the family project: a kinship survey by questionnaire (N = 478); an intensive study of family dynamics using 27 lengthy interviews; a family-role survey on matters of power, division of labor; a housewife survey (N = 333); and a questionnaire study of high school students, approximately 1700 cases. The last two surveys were actual replications of the Lynds' surveys in the 1920's. Unfortunately, the family surveys have a completion rate that leaves one uncertain about their representativeness of the Muncie population. On average, no more than half of the eligible respondents provided usable data; and we are not given information about the nonrespondents and the potential source of bias they represent. The scope and pace of data-gathering undoubtedly played some role in this disappointing return.

Caplow and his research team followed the Lynds in relying upon a rich mixture of data sources (from observations to documents to surveys) and specific organizing concepts, such as social stratification and the contrast between the business and working class of Middletown. By designing Middletown III in terms established by the earlier work, the research team made obvious sacrifices in degrees of freedom for methodological and theoretical innovation. *Middletown Families* does not lay claim to a place among important studies of the family on the basis of methodology for studying change or of theory regarding family change and continuity. To appreciate the distinctive merit of Middletown III and the family volume, one must recognize its unique extension of the time frame in the Lynds' work across a historical minefield of misperceptions and erroneous diagnoses. Elsewhere, Caplow (1980) questions whether we have learned much since the Lynds' pathbreaking work: "It is disconcerting to discover how little we really know about social change in modern communities after all the attention that has been lavished on the topic."

This discovery is actually the centerpiece of *Middletown Families*, as expressed in its concluding chapter, "The myth of the declining family." The myth has familiar symptoms to successive generations of Americans: loss of parental authority and the widening generation gap, family isolation from kin and the weakening ties between family life and religion, the soaring rates of divorce and women's employment. According to the authors, "Nearly everyone in Middletown knows about the crisis of the modern family and deplores it." The four sections of the book use data, comparisons, and argument to challenge this view of the modern family and expose its varied sources—selective perception, the creation of pseudofacts by comparing the present with a nostalgic image of the past. Two chapters in part 1 place the study in historical context and describe general trends since the 1890's; part 2 includes five chapters on family roles and relationships, from household tasks and decision-making to employment, parenting, and marital interaction; part 3 focuses more broadly on social ties across kinship, religion, and the festival cycle; and part 4 broadens the territory beyond Middletown through Reuben Hill's thoughtful essay "American families during the twentieth century." Most

"The single most important fact about the nuclear family in contemporary Middletown is that it is *not* isolated." [From *Middletown Families*; by permission of Ted Thai]

of the chapters begin with relevant observations on Middletown life by the Lynds and then proceed to the cross-sectional picture in the 1970's and selected cross-time comparisons.

The authors clearly intended to produce a volume that would be accessible to the nonspecialist, and they have succeeded admirably in doing so. *Middletown Families* is a well-written book, uncomplicated by theory, method, or analysis, and one with an important story to tell. But has the challenge to one myth created another, such as the generalized image of an "ever harmonious, successful family life"? The authors pronounce the Middletown family to be in "exceptionally good condition" and note along the way that even the "demanding role of working wife and mother is performed with every appearance of ease and comfort by the majority of Middletown's married women." One wonders where all the stress has gone.

Principal lines of demarcation in the families of Middletown before the Great Depression appear less pronounced some 50 years later, and so does a generalized intolerance—both old and young are now more accepting of diversity in people, custom, and ideas. Business-class families in the 1970's more closely resemble working-class families in marriage, parenting, kin relations, and work roles; women's sphere has more in common with that of men; and the generations no longer view each other across the chasm noted by the Lynds at the end of the Depression decade. Whatever the adequacy of the data and analysis, the study leaves no doubt about one central conclusion, the profound change in women's lives as expressed across all domains of family life, a change that dates back at least to the very first observations on the Middletown community, 1890. Childbearing and parenting, marital relations, and employment and community affairs depict a trend among women toward greater control over their lives. The working woman of the 1920's was either single or working-class; by 1978 she could have been in the business class as well (over 40 percent versus 48 percent in the working class). But working wives and mothers still perform most of the household functions; the employment trend made no real dent in the traditional division of tasks by gender. Despite an enlarged set of activities, women's share of time with children and that of their husbands were actually greater than the figure for 1924. As in the 1920's, father was still the most problematic parent. The strength of family continuity remains a dominant impression across the recorded changes.

"Public celebrations and community festivals are 'family-oriented.'" [From *Middletown Families*; lower photograph by permission of Ted Thai]

As a community project with two widely separated data points, the study prompts questions regarding the similarity of Middletown to other places and the linking processes between the 1920's and 1970's. The research team carefully assembled statistics that generally document a resemblance between family trends in the city and in the country as a whole. At the same time, however, the authors characterize the choice to live in Middletown as a "vote for custom and against innovation." As they write, "It is not surprising that a population recruited in that way should be able to resist innovation with considerable success." This observation also raises questions about migration or population turnover, an unstudied feature of the changing face of Middletown. In any case, the kinship survey tells us that most residents live close to kin. Nearly half of the adult respondents with surviving parents had a parent in the city and approximately three out of four had a grown child in the community.

For a study of change, *Middletown Families* follows a strange path by tending to vault over the 40 or more years between the first two projects and the last. We see families and people in the 1920's or 1930's and then once again in the 1970's. The people are different, of course; but a good many of the retirees of the 1970's were teenagers in Robert Lynd's survey of high school students. The study makes no effort to link these

different times through the lives of people, families, and lineages—to follow their course through retrospective accounts from the 1930's to the Second World War, postwar affluence, and the economic stagnation of the 1970's. Analysis of the survey data produces a snapshot of Middletown families without the sense of historical depth and process that Hill conveys in his concluding overview of broader currents of family change.

Many contributions about family change and continuity emerge from the research of Middletown III, but perhaps the most important one involves the stream of questions it raises about the validity of popular views on family trends since the 1920's. The danger of false knowledge is self-evident, especially with respect to policy. Equally problematic is the very thin state of knowledge on the process of family change. In *Middletown Families*, two waves of data collection separated by half a century leave most everything about this process to the realm of imagination. Then-and-now comparisons pose a good many puzzles about how the Middletown families of 1975 evolved from the family patterns of the 1920's. Perhaps these puzzles will generate fresh thinking about the course of family change and stability in 20th-century America. No development could be more timely or valuable.

GLEN H. ELDER, JR.
Departments of Human Development and Sociology, Cornell University, Ithaca, New York 14853

Population Patterns: A Reconstruction

The Population History of England, 1541–1871. A Reconstruction. E. A. WRIGLEY and R. S. SCHOFIELD, with contributions by Ronald Lee and Jim Oeppen. Harvard University Press, Cambridge, Mass., 1981. xvi, 780 pp., illus. $60. Studies in Social and Demographic History.

In 1798 T. R. Malthus published his *Essay on the Principle of Population*, the first systematic analysis of the relationship between economic and demographic change. Emphasizing the fundamental disparity between the potential rates of expansion of population and the food supply, he argued that mortality (the positive check) usually intervened to curb overpopulation. Malthus also suggested that prudence in the form of delayed age at marriage (or the preventive check) might serve as an alternative to the otherwise inevitable increase in death rates. As he was writing England was in the initial phase of the industrial revolution, a development in productivity that eventually would transform the material basis of English society. Just three years later, in 1801, the population of England was enumerated for the first time, an administrative innovation that initiates a new era in terms of the sources of historical demography.

Now, nearly two centuries later, E. A. Wrigley and R. S. Schofield, two of the co-directors of the Cambridge Group for the History of Population and Social Structure, have addressed the issues of population dynamics before and after industrialization by reconstructing estimates of vital rates and the size of the English population back to 1541. They employ a novel methodology, that of back-projection of cohorts beginning with the age groups recorded in the 1871 census, and the major source for English demography in the pre-census era, the recordings of baptisms, marriages, and burials made by the incumbents of 404 of the 10,000 ancient parishes of England.

Because England was the first country to undergo industrialization, its population history has had unusual importance. During the second half of the 18th century, commentators disagreed about as basic a matter as whether the population had grown since the Glorious Revolution of 1688, a dispute that suggests the problematic nature of demography in an era without demographic sources. England's population experience informed economic and social theorizing from the time of Adam Smith to that of Karl Marx, and during the 20th century scholars have argued about the relative importance of changes in mortality and changes in fertility in the rapid population growth in the period of industrialization. Although national tabulations of the number of 18th-century vital events at ten-year intervals had existed since the early 19th century, the accuracy of the figures was so uncertain that a plausible case could be made for the preeminence of either factor. Rather than directly demonstrating the validity of a particular thesis, scholars more typically attempted to rule out alternative explanations by using indirect arguments.

In this volume, Wrigley and Schofield have achieved a major advance in the establishment of a reliable data base for English population history in the pre-census period. Although some disagreement about the record will continue, as was apparent at a March 1982 Asilomar, California, conference on the book, future revisions necessarily must contend with the Wrigley-Schofield estimates and match their rigorous and imaginative techniques. The task of reconstructing the population history of England between 1541 and 1871 was complex. The first five chapters and ten of the 16 appendixes of the volume explicate the approach and procedures used. Both in their use of best-practice demography and in their thorough explanation, these sections could serve as a textbook for a graduate course in the methodology of historical demography.

Variation in the original quality and in the survival of English parish registers made a random or systematic sample impossible. Volunteers interested in local history sent to Cambridge monthly tabulations of the numbers of baptisms, marriages, and burials; some 3.7 million of these monthly totals entered the sample. Since temporal gaps appear even in these documents of relatively high quality, missing events had to be inserted into the holes. Since larger parishes were over-represented among the 404 parishes reported on, the size distribution was weighted to conform to the distribution of a random sample of parishes in 1811. Also, the number of vital events occurring in London had to be incorporated separately into the sample. Additional corrections were required to account for the increasing interval between birth and baptism and for the leakages of events into the registers of nonconformist congregations. Multiplying by the ratio of the total population in 1811 to the population in the 404 parishes yielded estimates of the numbers of events occurring on a national basis.

The enumerations by age in the early 19th century censuses indicated that further correction was in order. Too many were in the younger age groups for the estimated number of children baptized in the corresponding birth cohorts. The correction for the undercounting of births had to be increased in this period. The combination of census and vital statistics records generally results in estimates more secure than those based on either source alone. Unfortunately, auxiliary sources of demographic information are much scarcer in the 16th through the 18th centuries. The most compelling evidence supporting Wrigley and Scho-