Working Mothers: Assessing the Effects

Maternal Employment and Children's Development. Longitudinal Research. ADELE ESKELES GOTTFRIED and ALLEN W. GOTTFRIED, Eds. Plenum, New York, 1988. xxiv, 291 pp. $34.50. Plenum Studies in Work and Industry.

Continual increases in women's labor force participation since World War II, and especially the recent rapid rises in employment among mothers of infants and preschoolers, have prompted many social scientists to examine the effects of maternal employment on children. Early studies concluded that the impacts were mainly detrimental, but these had serious methodological flaws. Subsequent research indicated no across-the-board outcomes. Current investigators generally agree that maternal employment does significantly influence child development, but emphasize that the effects are complex and conditional on social class, gender, age of the child, and other circumstances (see L. W. Hoffman in *Parent-Child Interaction*, M. Perlmutter, Ed., Erlbaum, 1984). However, much of what is known on this subject is based on comparisons of children whose mothers are employed with those whose mothers are not. Such comparative studies offer little insight into causal processes. They do not permit observation of change in maternal employment or child psychological and behavioral attributes; they do not allow assessment of shifts in the relationships between maternal employment and outcomes across periods of child development; and they do little to promote understanding of the dynamics through which maternal employment may influence those characteristics of the child with which it is found to be associated. Each of these deficiencies may be remedied by longitudinal study designs which also allow assessment of whether consequences are lagged across phases of development ("sleeper effects") or contemporaneous. Therefore, the seven carefully crafted studies included in this volume, six of which are longitudinal, hold much promise.

A central premise underlying much of what is presented is that maternal employment influences child development through its impact on mothers' attitudes and the family environment. At least four major categories of variables are taken into account: the mother's employment, the mother's attitudes, the family environment, and the child's psychological and behavioral characteristics. The research examines the intensity of the mother's employment (full-time, part-time, not employed) and the mother's occupational level. Several maternal attitudes are considered: job satisfaction, reasons for employment, preference for work, maternal confidence, perceptions of the influence of her employment on her child's development, feelings of stress, irritability, and separation anxiety, investment in parenthood, and perceptions of mutual interference and the ability to coordinate family and work.

Some features of the family environment are viewed as partially determined by maternal employment; others are seen as defining conditions under which maternal employment is beneficial or detrimental to the child. The authors assess the father's and mother's involvement with the child, the father's attitudes toward the mother's role, the degree of stimulation provided in the home, the number and ages of children, and other variables. Finally, the child psychological and behavioral outcome variables (studied in children ranging in age from 3 months to 22 years across the six longitudinal studies, but with most emphasis on infancy and the preschool and early school years) include indicators of infant-mother attachment, ego resiliency, temperament, cognitive functioning, school attitudes, academic achievement, social competence, sex role attitudes, and behavioral adjustment. Measures are obtained from children, mothers, fathers, and teachers.

Among the many combinations of employment characteristics and outcomes under scrutiny relatively few significant relationships are reported. In the final chapter, the editors summarize the findings:

> It is apparent that maternal employment status, whether measured during the child's infancy, toddlerhood, preschool, or school-age years bears no consistent significant relationship to subsequent development across the varied developmental domains studied. Almost all analyses yielded nonsignificant results.

Though the pattern indicated here contradicts that found in some other studies (see Hoffman's 1984 review), this result is not surprising given the composition of the study panels. The entire set of investigations is focused on middle- or upper-middle-class, mostly college-educated parents and intact families. This homogeneity reduces the variability of key independent and dependent variables, likely attenuating the magnitude of relationships between them. Moreover, in these strata women have the most discretion about whether to work outside the home. Lerner and Galambos, drawing on data from the New York Longitudinal Study of 133 highly educated (60% of fathers had postgraduate degrees) families, report that mothers who worked more hours outside the home had "temperamentally easier" children at age 3, 4, and 5. But in this stratum it is most discretionary for mothers to go to work: those whose children are seen as requiring more attention are able to stay at home with them.

None of the studies features working-class families or focuses on those groups that would likely have the most difficulty in coping with the multiple and often conflicting demands of work and parenthood: sin-

Prices of Books

Average per-volume prices of books reviewed in *Science* 1983–1988. The average prices per page for the technical books in the natural sciences for the years covered were 11.1¢, 12.0¢, 12.7¢, 12.2¢, 12.5¢, and 16.1¢. (Data are for hard-cover books except where books were available only in paperback.) The sharp increase over 1987 in average prices and prices per page appears mainly to reflect the inclusion of a larger number (about 7% of the total) of books at the upper extreme. A separate calculation eliminating volumes priced over $100 yields an average price of $46.44 overall and $58.75 for the technical books, and the average per-page price of the technical books over $100—23.6¢—was substantially higher than the average overall. The proportion of books at the lower end of the price spectrum (under $40) did not change substantially. For earlier data from *Science* and other relevant information see *Science* **211**, 933 (1981); **235**, 95 (1986); and **239**, 81 (1987).

Category	Price (dollars)					
	1983	1984	1985	1986	1987	1988
All books	41.93	45.38	47.02	47.02	47.37	54.05
Technical books in natural sciences	51.18	55.29	49.66	53.57	59.06	71.70

gle-parent or teenage mothers, or mothers who have poverty- or near poverty-level incomes despite the fact that they (and sometimes their spouses) are working. These groups have the least ability to purchase goods and services to compensate for their absence from the home. It should also be noted that in lower-income families maternal employment, through its provision of socioeconomic benefits and stability, could have a highly salutary influence on some aspects of child development.

It is likewise probable that particular combinations of family background and work characteristics have substantial importance, even when few gross effects of maternal employment can be observed. Maternal employment may be more or less consequential depending on race, social class, and features of maternal occupational experiences (such as occupational challenges, opportunities, stressors, and rewards). Given what is known about the effects of numerous conditions of employment on attitudes and psychological functioning (M. L. Kohn and C. Schooler, *Work and Personality*, Ablex, 1983) and the possibility that varying occupational experiences have quite different implications for mothers' attitudes and behavior, the authors in general rely too heavily on hours of work and prestige in assessing the consequences of maternal work.

Given these caveats, it must be acknowledged that this volume thoroughly investigates the effects of maternal employment status on the child in middle-class families. The consistent absence of significant effects across studies provides strong evidence that in middle- and upper-middle-class groups maternal employment per se does not generally have detrimental consequences. Some patterns, however, indicate deleterious and beneficial child outcomes under varying conditions. Goldberg and Easterbrooks find that toddlers whose mothers had resumed employment before they were 6 months old were less likely to have secure attachments to both parents than were those whose mothers returned to work later in the first year of life. Owen and Cox report that mothers working more than 40 hours when their infants were 3 months old were significantly more anxious than mothers working 40 hours or less. And when mothers of 3-month-old infants were more anxious, the infants were more insecurely attached and more resistant at 12 months. Goldberg and Easterbrooks find that as the mother's weekly hours of employment increased kindergarten-age sons expressed more negative emotions (as reported by fathers). Men whose wives were employed felt more aggravated about their toddlers than those whose wives were not employed. Goldberg and Easterbrooks also found that kindergarten-age children's ego resiliency was higher if mothers had not changed their labor force activity over the previous four years.

Gottfried, Gottfried, and Bathurst report finding that maternal employment was positively related to the mother's educational aspirations for her children and both the father's and the mother's involvement with the child. They also find more favorable child outcomes when mothers had higher occupational status and experienced less stress. Similarly, Lerner and Galambos report that maternal role dissatisfaction is related to child rejection at age 3, and the latter, in turn, increases child temperamental difficulty at age 4.

Other findings concern maternal attitudes and their correlates and their dynamic changes over time. In a study of white-collar employees at a large pharmaceutical company, Hughes and Galinsky report that both mother's and father's stress was predicted by supervisor sensitivity to work-family conflicts. Hock, DeMeis, and McBride report that mothers who preferred to remain at home were more concerned about the consequences of separation from their infants and became even more negative about the effects of separation as the child's first year progressed. Mothers who preferred to work were initially less concerned and became still less so over time. These persons had differential levels of investment in the role of mother, suggesting two divergent definitions of motherhood. Furthermore, employed mothers with high anxiety about the effects of separation on the child were less likely to use day-care centers. Non-employed mothers with concerns about leaving the baby to return to work were less likely to use preschools. An important implication of this study is that child "outcomes" associated with different types of alternative care may really be functions of differences in maternal attitudes.

Relatively few gender differences emerged from this collection of studies. However, Gottfried, *et al.* report that mothers of boys (at 30 to 42 months) were less likely to be employed than mothers of girls. Owen and Cox find that mothers of boys had greater investment in parenting. Role satisfaction was greater among employed mothers of 3-

month-old girls and non-employed mothers of boys.

In conclusion, the full promise of longitudinal research on this very important topic is not realized by this collection of studies. Since significant associations between maternal employment and child developmental indicators were found to be so rare in the particular socioeconomic stratum studied, more finely tuned assessments of the conditions, timing, and dynamics of influence become, for the most part, irrelevant. Longitudinal studies of more representative samples are needed to provide more definitive assessment of the role of maternal employment in child development.

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Weapons and Hopes

War Stars. The Superweapon and the American Imagination. H. BRUCE FRANKLIN. Oxford University Press, New York, 1988. x, 256 pp. + plates. $22.95.

Over the years Americans have shared an intense faith in technology as the efficient solution to our messiest social problems. No matter that a serious problem may be essentially political—ineffective schools, industrial pollution, labor difficulties, declining productivity, infant mortality—we have looked to American "know-how" for the primary answers. Nowhere are the alarming consequences of this delusion, if it is one, more obvious than in our quest for the ultimate "techno-fix," the weapon to end all war. Bruce Franklin's cultural history of "the superweapon and the American imagination" offers the disturbing suggestion that in placing such confidence in our technology to meet this most intractable political challenge we have entrusted our future to our machines instead of ourselves.

Believing that popular perceptions somehow inform, as well as reflect, public policies, Franklin searches over a century and a half of our cultural landscape for clues to the social meaning of the American superweapon. What he has found may well surprise those readers who assume that the frightening implications of the superweapon only exploded into public consciousness at Hiroshima.

A century ago, Americans devoured a kind of pulp fiction Franklin calls war fantasies, visions of future apocalyptic conflicts pitting a virtuous America against powerful and evil adversaries. What these forgettable novels shared, beyond their improbable plots and xenophobic strain, was the conviction that only American ingenuity—death rays, anti-gravity ships, bacteriological bombs—could tip the scales toward truth, justice, and (most important) the American way. Always these were weapons fashioned not by bloodthirsty militarists but by peace-loving capitalists whose real goal was as much ending war as winning it. Appropriately, perhaps, one of the great heroes of the genre was a fictionalized Thomas Edison who, in *Edison's Conquest of Mars*, a bizarre take-off of H. G. Wells's cautionary tale of the wages of imperialism, *The War of the Worlds*, turns the tables on the Martian invaders with a sinister death ray. "The quick technological fix fantasized by this fiction has turned out to be what is now called the fallacy of the last move, the will-o'-the-wisp that the United States has pursued in plunging the planet into the colossal arms race of our age," argues Franklin. "Faster and faster we chase this mechanical rabbit, always believing that American technological ingenuity is capable of creating an ultimate weapon that can grant perpetual world peace through either universal disarmament or American global hegemony" (p. 26).

Like their fictional counterparts, American engineers sincerely believed that better weapons would make the world, if not the entire solar system, safe for democracy. Franklin traces this conceit to Robert Fulton, who, when he wasn't working on steamboats, was inventing and selling wondrous (and usually unworkable) naval weapons to both sides fighting in the Napoleonic wars. Fulton, with the engineer's typical self-assurance that his inventions could transcend the flaws of human institutions, called his submarine "a curious machine for mending the system of politics" and predicted that, by neutralizing the foremost strategic technology of the day—the British ship of the line—it would launch a new era of free trade, peace, and international prosperity. And though his private experimenting added little more to the arts of war than Fulton's, Thomas Edison's public pronouncements about miraculous electric weapons and mobilizing American ingenuity almost certainly helped shape American public opinion (and policy) on military preparedness. "The way to make war impossible," he argued, "is for the nations to go on experimenting, and to keep up to date with their inventions, so that war will be unthinkable, and therefore impossible" (p. 54).

Franklin follows America's infatuation with the superweapon down to the present through literature, science fiction novels, and films and suggests that sometimes the line between fantasy and fact is none too clear. Though a few writers and film-makers, say Joseph Heller in *Catch-22* or Stanley Kubrick in *Dr. Strangelove, or How I Learned To Stop Worrying and Love the Bomb*, have challenged our simple-minded equation of superweapons and social harmony, most have simply reinforced it. Even more troubling, perhaps, is the extent to which those with the most to gain from superweapons development have attempted to influence public opinion through fiction. Franklin recounts, for example, the massive and long-standing public relations campaign behind the rise of American air power. From Clark Gable and Spencer Tracy's *Test Pilot* (1938) to Jimmy Stewart's *Strategic Air Command* (1955) to the recent Tom Cruise hit *Top Gun*, the armed services and their industrial contractors not only supplied the indispensable hardware for these Hollywood epics—like assigning the entire fleet of B-17 prototypes for *Test Pilot*—they virtually wrote the scripts.

Franklin's strident tone and overbearing prose ("only one kind of appetite could gobble up the productive excesses of post-war American heavy industry: the ever-growing, insatiable bulimia induced by war or the threat of war," pp. 112–13), as well as some of his more outrageous accusations (that the Strategic Defense Initiative was designed to undermine an increasingly active and aggressive nuclear freeze movement) may put off some readers. Others may question whether Americans are any guiltier of the panacea mentality than the rest of the world. H. G. Wells and Jules Verne, for instance, held many of the same hopes for a world peace established and enforced by miraculous weapons, though perhaps it is significant that Verne's "Master of the World" was an American. Curiously, Franklin ignores this side of the literature. Somehow, he also missed Joseph Corn and Brian Horrigan's delightful, and revealing, chapter on future wars and weapons in *Yesterday's Tomorrows*, which more persuasively places both the American obsession with superweapons and the conquest of space in the broader continuum of the frontier ethic and the winning of the West. And curiously, given the title, Franklin says virtually nothing about the Star Wars saga and what, if anything, it suggests about the persistence of American cultural values in shaping defense policy.

Nevertheless, whatever you may think of Franklin's answers, he deserves some credit for asking original and important questions about the cultural constraints of defense policy. Who could listen to the latest rhetoric promoting the Strategic Defense Initiative—much of it, as Franklin points out, served up by science fiction writers like Robert Heinlein or former copy writers for