

The Impact of Growing Children on Their Parents' Travel Behavior: A Comparative Analysis

SANDRA ROSENBLOOM

The extent to which noneconomic variables, such as household and child-care responsibilities, explain travel behavior and are likely to do so in the future is examined. The focus is on how growing children and their travel needs affect their parents differentially. On the basis of data from 100 intact households in the United States and 200 households in the Netherlands, it is shown that working women have markedly different travel patterns than comparably situated men because they accept significant responsibility for most of the travel needs of their children. These responsibilities change as children grow older, being heaviest for the youngest (under 6) and the oldest (teenagers). It is concluded that if women continue to bear a disproportionate share of the direct or emergency responsibility for their children, travel differences between the sexes will not disappear, regardless of other economic and occupational changes.

Data from the U.S. census, the Nationwide Personal Transportation Study (NPTS), and a number of local studies show that salaried men and women often have empirically different travel patterns; women use transit more for their work trips, spend less time commuting, and work closer to home than men. Moreover, women are often not as well served as comparably situated men by the mass transit on which they seem to depend: they often have suburban-to-suburban commutes rather than the radial transportation patterns best served by traditional transit, and they have security and safety concerns about transit use that men do not.

These data raise both policy and methodological questions. Some analysts and advocates argue (1, 2), against strong opposition, that these data indicate that there is a "women's transportation" problem, that is, a set of undesirable situations faced by women alone. Not surprisingly, most of these making this argument call for government redress of part or all of these problems.

Methodologically, some analysts question how well transportation models, which rarely incorporate sex or individual characteristics, as opposed to household characteristics, can predict or analyze travel behavior. Most commonly used transportation models are based on the assumption that travel behavior is correlated with only a few household economic variables and that sex is not a predictive variable.

Researchers have asked whether such methods recognize or take into account the different transportation patterns of women

(3) or their differential response to transport system characteristics (4; 5, pp. 381-416). Several analysts have suggested that dramatic increases in female labor force participation, particularly by mothers of young children, call into question the underlying assumptions of many travel demand models (6-9; 10, pp. 151-158).

The important questions for both policy analysts and methodologists are, What causes sex differences in travel and will they continue? If they do continue, will they continue long enough to warrant policy concern or alterations in planning methodology?

The focus of this paper is the extent to which noneconomic or social variables explain travel behavior now and are likely to do so in the future. In particular, this paper focuses on how growing children, and their travel needs, affect their parents differentially. The analyses presented show that working women have markedly different travel patterns than comparably situated men because they accept significant responsibility for most of the travel needs of their children and for sick children. These responsibilities change as children grow older, being heaviest for the youngest (under 6) and the oldest (teenagers).

CAUSAL ANALYSIS OF TRAVEL DIFFERENCES

Are observed travel differences between men and women the result of social and cultural norms or economic factors? The dominant economic school of thought is that travel characteristics are linked to economic variables; women, who work in lower-skilled occupations and who are traditionally paid poorly, travel less and use transit more frequently because such behavior is economically rational.

If this is so, rising real wages (and concomitant increases in occupational status) will cause working women to behave more and more like comparably situated men. Therefore, a case can be made that there are only short-term differences in travel; as historical economic and occupational disadvantages disappear, travel differences will disappear.

Other researchers argue that women's travel characteristics are closely linked to the household and domestic roles or responsibilities that they accept. There is a growing body of empirical work that suggests that women of all socioeconomic groups have different travel patterns because they have accepted a variety of household and child-care responsibilities that comparably situated men do not.

Hanson and Hanson (11) found that Swedish working women had significantly different travel patterns than their

spouses, women making more shopping and other domestic-type trips and fewer social and recreational trips, and more often using public transit (although presumably both spouses had equal access to the car).

Rosenbloom (10, 12) found that women in three separate cultures—France, the United States, and the Netherlands—had very different travel patterns than comparably situated men; in all situations women were more likely to be motivated in their travel and employment choices by their household responsibilities.

Pickup (13) found that British women in Reading with the most child-care obligations made the shortest work trips, passing up better jobs with longer commute times. Pickup found little indication that traditional economic variables explained work travel distances; he concluded from both national British statistics and in-depth Reading studies that women are constrained from traveling farther from home by “gender role activities” and not by travel costs (13, p. 101). Although Pickup found a general tendency for longer work trips to be associated with higher pay for both men and women, a significant number of women were willing to commute a long distance for fairly low pay if they had no family restrictions.

Although it is beyond the scope of this paper, it is hard to ignore the disturbing body of information suggesting that even if travel differences were all explained by economic variables, the disparity in income between men and women is not narrowing appreciably. For policy analysts this economic reality may make debates over the causal explanations of travel differences meaningless, although it is possible that the same noneconomic variables that motivate women’s travel behavior explain some of their economic plight.

In order to address the causes of travel differences between the sexes, an analysis will be made of the travel patterns of comparably situated, salaried male and female parents in Austin, Texas, with children of different ages. The analyses will concentrate on four variables related to children’s needs or household activity: trips linked to work trips, trips made solely for children, children’s travel patterns, and parents’ response to sick children.

The analyses show that acceptance of these household roles and chauffeuring duties leads to both short-term and long-term differences in women’s travel behavior: in the short term these needs become incorporated directly into women’s travel behavior, making it different than that of comparably situated men. In the long run, women accepting these obligations may perpetuate their economic dilemma by accepting marginal employment and jobs closer to home in order to efficiently carry out domestic duties and to be available to children in need.

It is hard not to be struck by how some of women’s short-term and long-term transportation problems are in reality a result of their children’s transportation problems—of children’s inability to find safe, convenient, available transportation for their needs.

An examination of the travel patterns of Dutch children in similar households reveals that although Dutch working women carry an even more disproportionate share of household responsibilities than American women, they are far less likely to chauffeur their children or address the majority of their children’s travel needs. The availability of transportation alternatives for their children frees these women of some of their transportation burden.

In the following sections the study from which these data are drawn and the comparative analysis of the four major travel variables are described. In conclusion, the comparative Dutch travel data are examined.

SURVEY DATA AND METHODOLOGY

The analyses and data presented in this paper are part of a larger comparative study of the transportation implications of the increasing involvement of mothers in the paid labor force in the Netherlands, the United States, and France. Small-scale attitudinal surveys were undertaken between 1982 and 1985 in all three countries; respondents were married and single workers with children of various ages. One hundred intact families and 50 families headed by currently unmarried mothers were interviewed in Austin, Texas; 150 intact families and 50 single-parent families were interviewed in Rotterdam. The two communities are not alike and were chosen largely for convenience and internal policy considerations. A complete description of the overall study and the survey methodology has been given elsewhere (8, 9).

Because of the small sample size, many of the following observations are not statistically significant at high confidence levels. However, the small sample allowed the collection of detailed and complete responses to a variety of factual, attitudinal, and hypothetical questions.

Trip information is based on responses to particular questions and does not represent trip-diary data; this approach has both strengths and weaknesses. Memory is uncertain without written reinforcement; moreover, it is hard to tell how often a trip called “frequent” or “usual” is really made if the respondent is not required to keep daily records. But this approach may have significant advantages over travel diaries for one or two “average” days; there is growing evidence of the variability of travel behavior over a week. Those chauffeuring children and accepting household duties may well have the most varied weekly schedule.

TRAVEL BEHAVIOR

In the following analysis, the travel behavior of men and women working more than 35 hr a week is explored in terms of four variables: trips linked to and from work, trips made solely for children, children’s travel modes, and responsibilities for sick children.

The four variables are directly related to either travel behavior or household responsibilities, although not necessarily to both at the same time. From the overlap of these responses, a preliminary portrait of the travel patterns of working parents with children of different ages can be drawn.

Linking Work Trips

Figure 1 shows the significant differences between working men and women whose youngest child was either very young or a teenager; 65 percent of all salaried women with children under 6 linked trips to work, although only 42 percent of comparably situated men did so. Working men were less and less likely to link trips to work as their children got older.

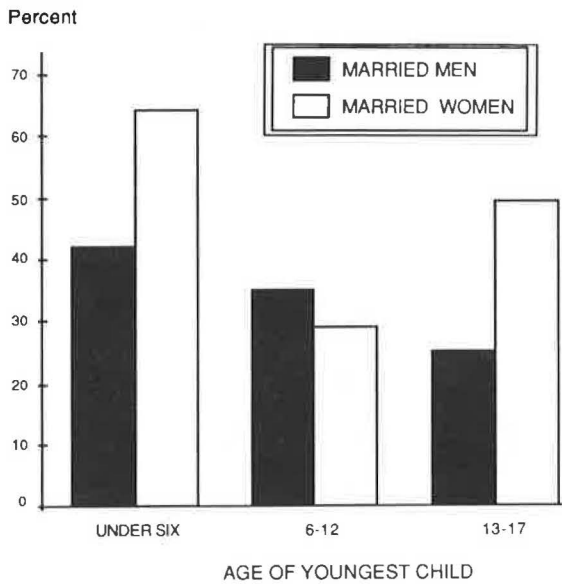


FIGURE 1 Percentage of parents who link trips to work.

Although the majority of working women linked trips when they had small children, less than a third did so when their youngest child was 6 to 12, and half did so when they had teenagers.

Figure 2 shows how parents linked trips from work; as is common nationally, far more adults of both sexes reported linking trips on their way home. Yet the linking behavior of men appeared unaffected by the age of their children; roughly three-fourths of all men linked trips regardless of their children's age.

The data for working mothers were similar to those for trips to work: more than 80 percent of mothers of young children linked trips from work, only half of all mothers with children 6

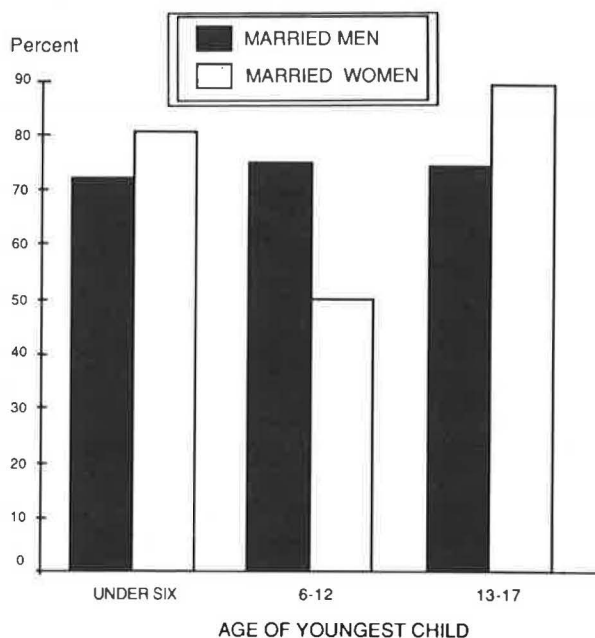


FIGURE 2 Percentage of parents who link trips from work.

to 12 linked work trips, but almost 90 percent of the mothers of teenagers did so.

It is not possible to say exactly what caused these differences, but a look at the trip purpose data in Tables 1 and 2 is revealing. In general, working mothers with very young children made a greater variety of trips and more of their trips were directly related to their household responsibilities (shopping) or their children (school).

TABLE 1 TRIP PURPOSE BY PERCENTAGE OF PARENTS WHO LINK TRIPS WITH WORK TRIPS: CHILDREN UNDER 6

	To Work		From Work	
	Men	Married Women	Men	Married Women
Recreation	7.7	4.5	14.3	10.3
Shopping	31.0	27.2	47.6	44.8
Personal Business	34.0	31.8	33.3	38.1
School	-	9.1	-	-
Volunteer Activities	7.3	13.6	4.8	3.4
Medical	-	13.8	-	-
Other	-	-	-	3.4

TABLE 2 TRIP PURPOSE BY PERCENTAGE OF PARENTS WHO LINK TRIPS WITH WORK TRIPS: CHILDREN 6 TO 12

	To Work		From Work	
	Men	Married Women	Men	Married Women
Recreation	-	-	5.3	7.4
Shopping	40.0	14.2	52.6	44.0
Personal Business	60.0	57.1	31.6	30.0
School	-	28.6	-	11.0
Volunteer Activities	-	-	5.3	-
Medical	-	-	5.2	7.4
Other	-	-	-	-

The parents of older children of both sexes appeared to link similar trips with their trips to and from work: shopping and personal business were the two major trip links. But fewer men made linked trips, and women were making far greater numbers of trip links reflecting domestic responsibilities whatever the age of their children.

Trips Solely for Children

All full-time working parents in all households were asked whether they ever made trips solely for their children and not because they themselves needed to be somewhere. Both men and women said yes, although Figure 3 shows that the percentages dropped sharply as children grew older.

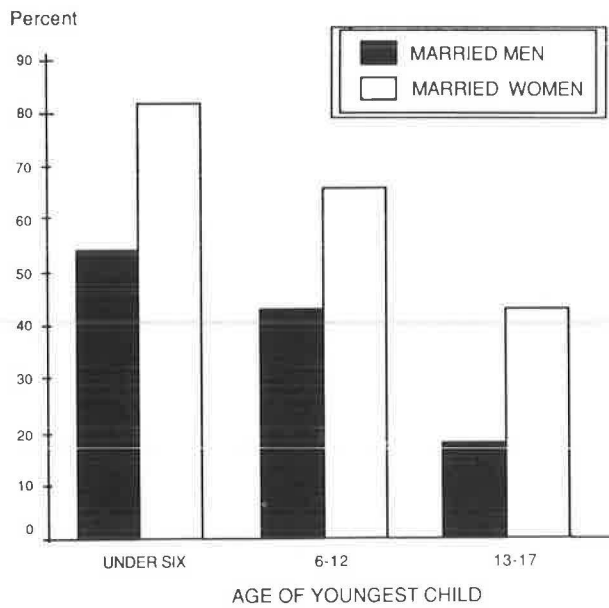


FIGURE 3 Percentage of parents who make trips solely for their children by age of youngest child.

Women were far more likely to make trips for their children; almost 82 percent of all married women with young children did so. Although the percentage of trips dropped sharply as their children aged, almost half of all married women continued to make trips to chauffeur their teenagers. Slightly more than half of all men made trips solely for their children when their youngest were under 6, but only 18 percent of men did so for their teenagers.

Figures 4–6 give data on the types of trips made for children by their parents as the children grew up. When children were young, mothers and fathers differed only slightly in the kinds of trips for which they chauffeured their children; recreation trips were the most common for both parents, but fathers were more

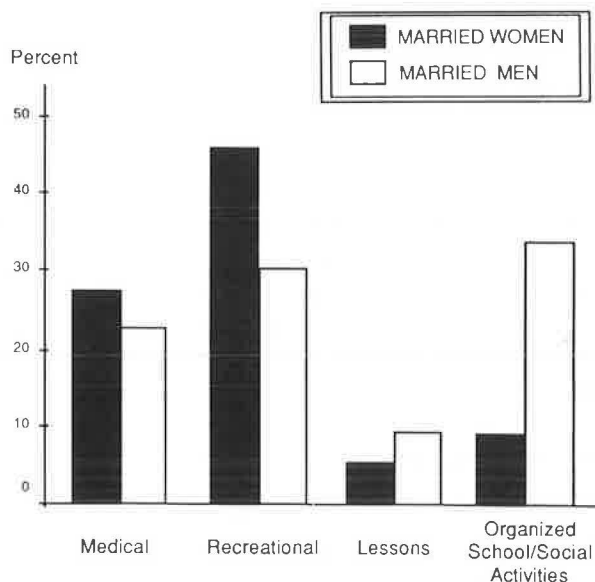


FIGURE 4 Percentage of all trips made by parents solely for children under 6 by type of trip.

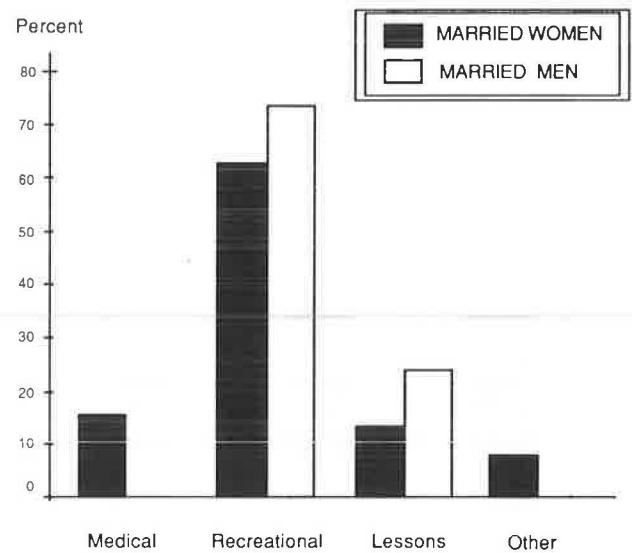


FIGURE 5 Percentage of all trips made by parents solely for children 6 to 12 by type of trip.

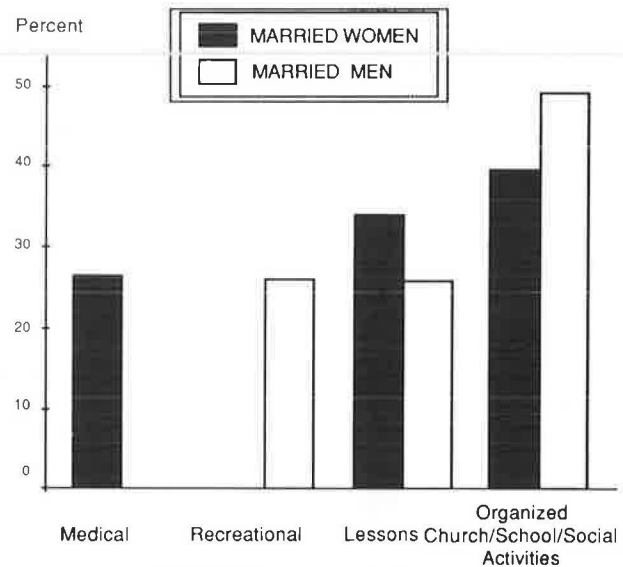


FIGURE 6 Percentage of all trips made by parents solely for children 13 to 17 by type of trip.

likely to take children to organized school or church activities as their second most frequent trip purpose.

As children grew up, fathers, who were making far fewer trips solely for their children, largely made recreational trips; three-fourths of all their trips for children 6 to 12 were for recreation. The small number of fathers (18 percent) who made trips for teenagers also made recreational and organized social trips.

As children grew up, mothers continued to provide a variety of trips, including medical and organized church or school activities. By the time their youngest children were teenagers, the 88 percent of all women chauffeuring their children were making no recreational trips but continued to make trips to doctors, organized activities, and lessons for their children.

Figures 7 and 8 show the reported frequency of trips made solely for children. The frequency data are very illuminating;

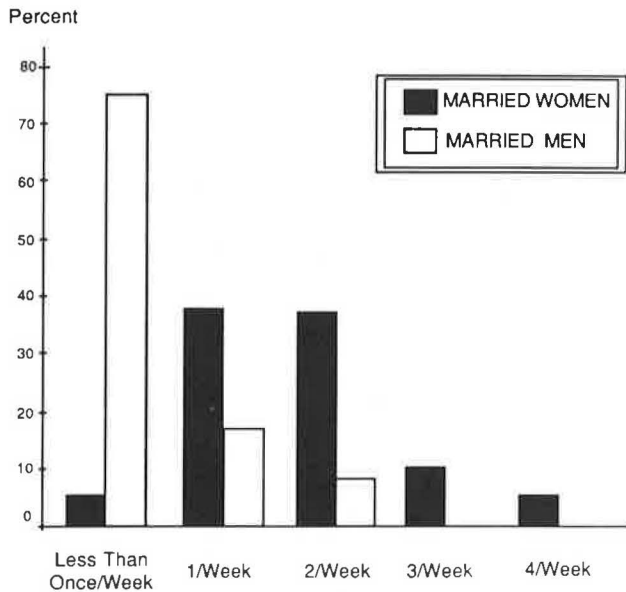


FIGURE 7 Percentage of trips made solely for children under 6 by frequency of trips.

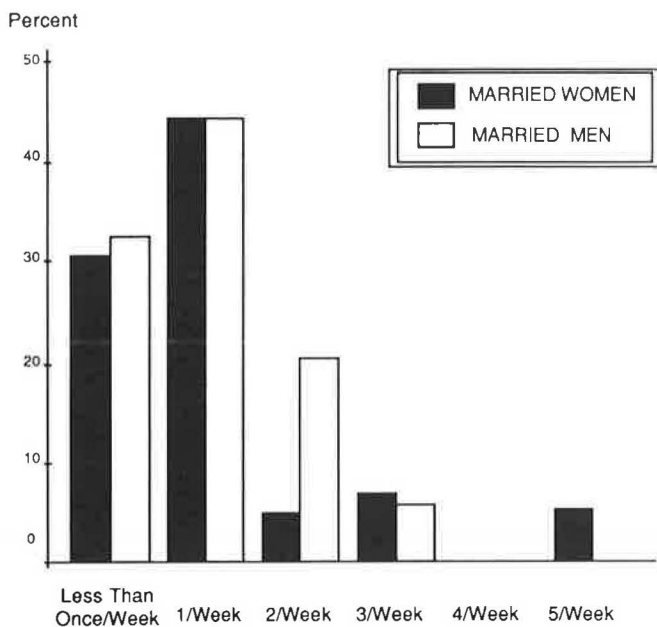


FIGURE 8 Percentage of trips made solely for children 6 to 12 by frequency of trips.

of the 54 percent of men who reported making such trips for their children under 6, the overwhelming number, 75 percent, did so less than once a week. Of the more than 90 percent of all women with young children who reported such chauffeuring duties, most did so once a week or more, 16 percent doing so more than three times per week.

Both parents were less likely to chauffeur slightly older children, although the drop was far larger for men; only 40 percent of fathers but 64 percent of married mothers answered in the affirmative. Of the smaller number of fathers who did so, the trips in question were made more frequently than those made by fathers of younger children. The majority of fathers reported making trips once or twice a week for these children;

it should be recalled that 75 percent of all these trips were for recreation.

Mothers' frequency patterns were similar to men's for children 6 to 12 although, as described earlier, trip purposes were different. Most mothers made one trip a week for their children, although approximately 15 percent were made more than once a week.

The patterns for mothers and fathers are very different for teenagers. The overwhelming number of trips by the 18 percent of fathers who made trips for teenagers were made less than once a week. Of the 46 percent of mothers who continued to make trips solely for their children, over a third were made once a week or more, with 15 percent being made three times a week.

Although it is difficult to see clearly from these data what is happening, some observations seem reasonable. Mothers of very small children are overwhelmingly the chauffeur for these children; the majority of trips being made by men are made very infrequently and appear to serve a back-up or emergency function.

Children from 6 to 12 probably make fewer trips not covered by their school or caretakers. So both mothers and fathers make fewer trips, although far more mothers still provide the trips needed. The frequency of the trips, however, declines so that the majority of both parents are making trips once or less than once a week.

Children from 13 to 17 are probably far more active than younger children but probably have more alternative travel modes than younger children. However, almost half of all mothers feel obliged to continue to chauffeur them to activities that appear to occur more frequently than those of children 6 to 12. However, few fathers appear to be willing or able to involve themselves in these teenage patterns; when they do so, it is very infrequently.

Children's Travel Modes

Working parents were individually asked to describe their children's most frequent travel mode; there was a very high degree of agreement among fathers and mothers. Figures 9 and 10 show the percentage of responses for children of different ages. Both parents agreed that the mother was the most frequent travel "mode" for children of all ages; roughly 60 percent of all respondents reported that the mother provided transportation most frequently.

Interestingly, more parents of both sexes reported that "other adults" were the primary travel provider than reported that the father was the primary provider. Roughly 5 percent of all women and 2 percent of all men reported that the father was the primary travel mode for children under 6; 7 percent of all men but no women reported that fathers were the primary provider of travel for children 6 to 12.

Equally shared chauffeuring was more likely to be reported for younger children; approximately 12 percent of both parents reported that the younger child's most frequent travel mode was "both parents equally." However no father or mother reported equally shared transportation provision for older children.

Other travel modes that did not require the presence of an adult, or more likely a car, were not frequently reported. Roughly 11 percent of all mothers reported that their slightly

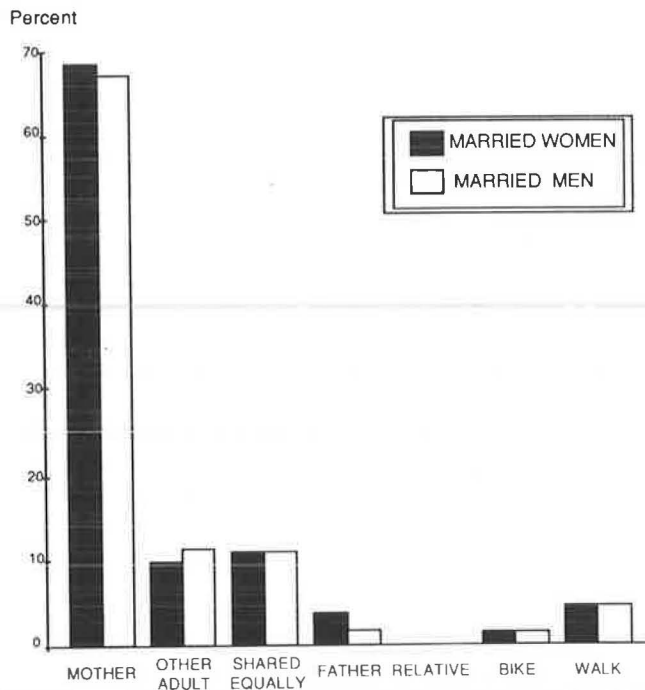


FIGURE 9 Children's most frequent travel mode as reported individually by parents for children under 6.

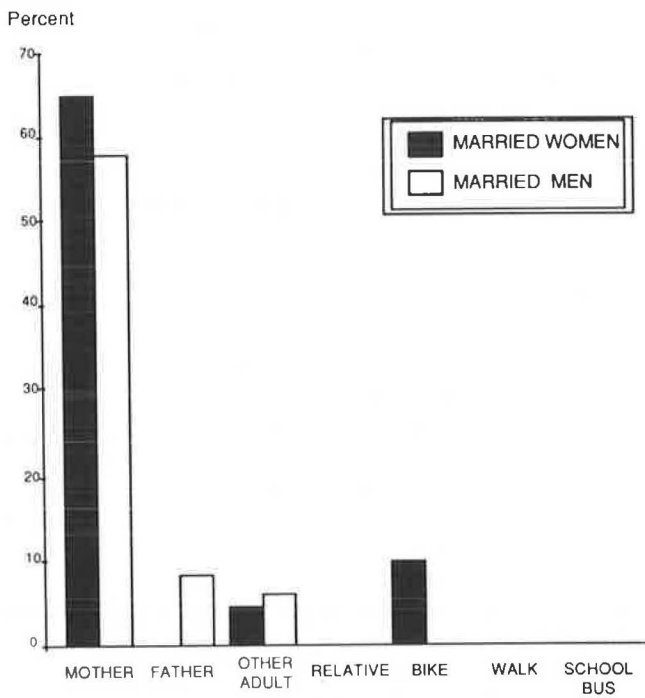


FIGURE 10 Children's most frequent travel mode as reported individually by parents for children 6 to 12.

older children relied more on bikes than on people. Although single mothers, not reported on in this paper, reported bus use by their children (12), no married respondent reported that this was the most frequent travel mode for their children of any age.

Responsibility for Sick Children

Working parents were asked who had responsibility for sick children of various ages if they could not remain in school or

childcare. This is, of course, not directly a transportation question; rather it addresses the larger issue of how the continued assumption of household or domestic roles may affect long-term employment decisions, which in turn create short-term transportation patterns.

Specifically, workers were asked what happened if a child became ill; Tables 3 and 4 give the data on answers reported by mothers. The mother was overwhelmingly the adult who changed activities to fit the needs of all children; 56 percent of mothers with sick children under 6 and 64 percent of mothers with children 6 to 12 stayed home or missed some work. Other adults, related and unrelated, were all more likely to care for sick children than the father. In fact, fathers were only slightly more likely (13 percent) to alter their schedules than the family was to use a paid sitter (7 percent).

TABLE 3 CARE OF SICK CHILDREN: MOST COMMON OPTION

OPTION	Child Under Six	Child Six to Twelve
Mother misses work	56	64
Father misses work	13	14
Care by:		
Relative	12	15
Unrelated Adult	6	0
Paid Sitter	7	0
Child Left Alone	6	7

TABLE 4 CARE OF SICK CHILDREN: SECOND OR BACK-UP OPTION

OPTION	Child Under Six	Child Six to Twelve
Have None	44	36
Mother misses work	25	14
Father misses work	0	0
Care by:		
Relative	0	8
Unrelated Adult	25	21
Paid Sitter	6	8
Child Left Alone	0	13

Table 4 also gives back-up or second alternatives for sick children. Not one mother reported that the father would be the back-up; that is, if the father was not available as the primary option, he was totally unavailable as a back-up. Other unrelated adults were reported as the most likely back-up option for sick children of all ages. The 25 to 35 percent of respondents in Table 3 who specified an adult other than the mother as the primary sick-child caretaker simply reported the mother as the secondary caretaker.

There are some sobering data in Tables 3 and 4. First, a small number of parents report leaving sick children home alone, even children under 6. But it is not particularly fanciful to assume that some number of the roughly 40 percent of respondents who simply could not think of any back-up option would in fact leave those children home alone.

COMPARATIVE ANALYSES

These findings show that the transportation patterns of working women are influenced heavily by their children's travel needs. It seems likely that such influences have long-term implications as well. It might be interesting, therefore, to briefly examine some comparable data about Dutch working women and see how differences in the resources available to Dutch children affect the travel needs of their parents.

Dutch working parents were asked if they ever made trips solely for their children; the data in Figure 11 show that there are many similarities to U.S. data, although there are important differences as well. Roughly 75 percent of fathers of very small children reported that they made trips solely for their children—comparable to similar U.S. fathers—but no fathers of older children reported that they did so.

Dutch women were as likely as U.S. women to make trips solely for very young children, but even more likely to make trips for children 6 to 12. Overall, more than 70 percent of Dutch working mothers of children of all ages reported that they made trips to take their children somewhere. However, because Dutch women may have absorbed those trips not made by Dutch fathers that are made by American fathers, Dutch parents as a couple probably are as likely as Americans with small children to ever make parent-chauffeured trips.

As with U.S. data, frequencies are illuminating. Figures 12 and 13 show the frequency of trips made for Dutch children of various ages. Dutch women make far less frequent chauffeuring trips than comparably situated U.S. women; over 60 percent of all trips for children under 6 are made once a week or less and the number rises to close to 80 percent for children 6 to 12.

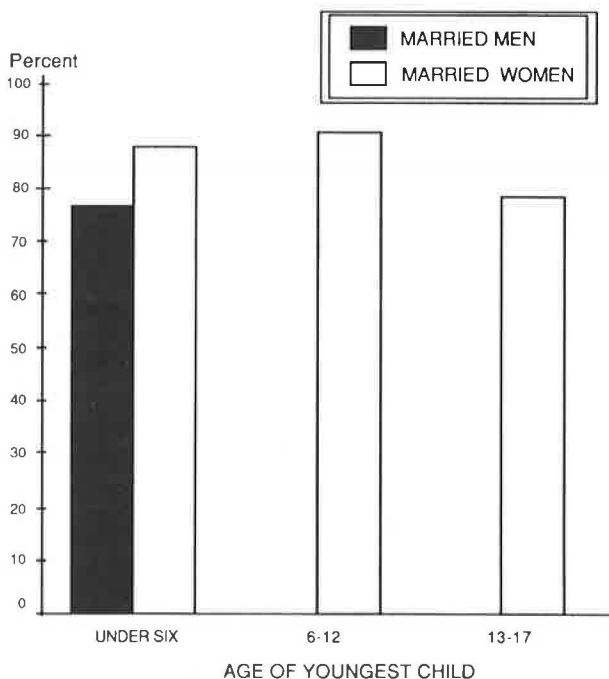


FIGURE 11 Percentage of trips made by Dutch parents solely for their children by age of youngest child.

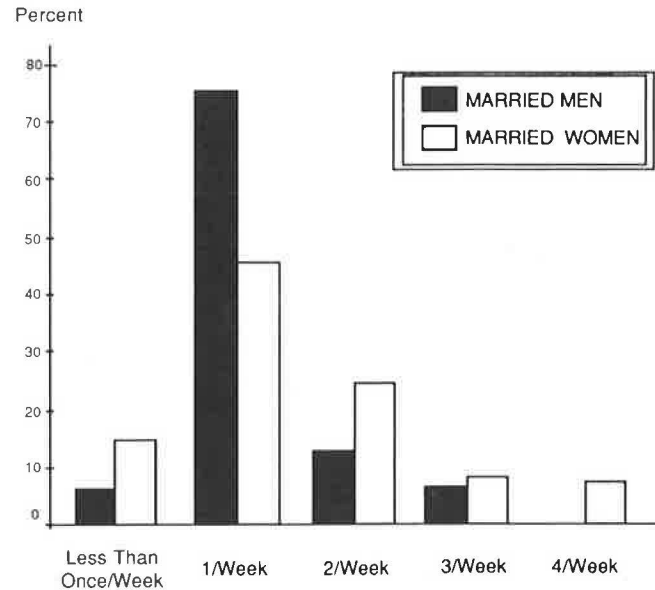


FIGURE 12 Percentage of trips made by Dutch parents solely for their children under 6 by frequency of trips.

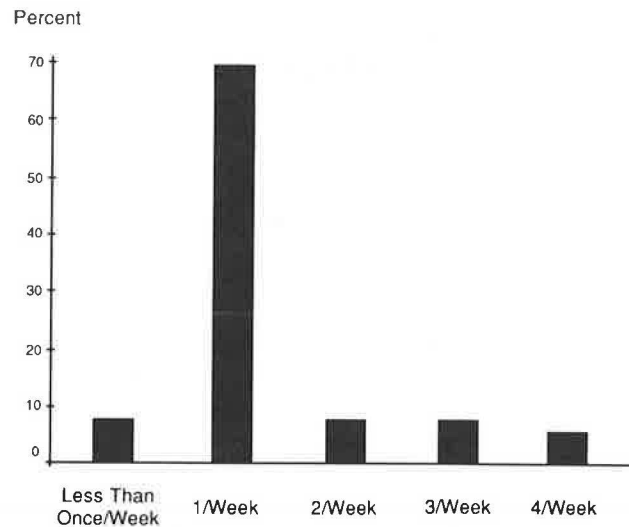


FIGURE 13 Frequency of trips made solely for Dutch children by their mothers; children 6 to 12.

In other words, although Dutch working women are more likely to make serve-passenger trips than American mothers, the trips they make are made far less frequently. Because Dutch men are making more frequent trips for their young children than comparable U.S. men, it is possible that children under 6 receive roughly comparable numbers of parent-chauffeured trips. But another explanation is necessary for older children.

Rotterdam and Austin are very different cities in very different cultural contexts, and it is dangerous to ascribe too much to simple answers. But certainly one possibility is that the greater transportation alternatives offered to children free parents from the need to see to all their children's trips. Table 5 provides data on one aspect of this situation.

Dutch working women were asked if their children routinely or frequently traveled alone; only 21 percent of

TABLE 5 PERCENTAGE OF DUTCH CHILDREN TRAVELING ALONE AND MOST FREQUENT TRAVEL MODE

	Under 6	6-12	13-17
	21	92	100

Mode of Travel for Those Travelling Alone
(PERCENTAGES)

	Under 6	6-12	13-17
Mass Transit and Train	58	58	43
Bike	8	42	43
Walk	34	-	9
Motorcycle	-	-	5

mothers reported that their children under 6 travel alone, but the number rose to 92 percent for children 6 and over, and was 100 percent for teenagers. Table 3 also gives data on the mode that these children use; it is clear that they rely heavily on bikes and mass transit. Bicycles are, of course, a major feature of Dutch culture; they are heavily used by adults and account for 25 percent of the Rotterdam home-to-work commute.

It is not reasonable to assume that Americans will ever heavily depend on this mode of travel, although it is interesting that a mode that was once synonymous with children's travel no longer plays a major role in U.S. children's life. Still the existence of workable transportation options that are considered safe and secure enough for fairly young children probably explains why Dutch women make fewer chauffeured trips than their American counterparts.

Mass transit and bikes are hardly a panacea for Dutch women; in spite of extremely good transit facilities and strong support for cycling, mothers still make many chauffeuring trips, and their travel patterns are still strongly affected by their children's needs (8, 9). In fact, the availability of alternatives—whether used or not—seems to have given their spouses less reason to meet their children's needs.

IMPLICATIONS

The data and analyses presented show that U.S. women have significantly different travel patterns than comparably situated men because they accept primary and sometimes almost exclusive responsibility for their children. Some of these analyses directly addressed current travel behavior, for example, making trips solely for children; others only indirectly addressed travel by suggesting that women with primary child-care responsibilities will always make interconnected travel-employment-child-care decisions differently than comparably situated men.

Although these analyses do not address longer-term questions of employment and travel choices, they suggest that women are indeed under strong pressure to make major economic as well as transportation decisions based on the explicit

or implicit acceptance of either certain domestic roles or certain family responsibilities. The larger economic trade-offs may not be clear to any working parent, but it is unlikely that women with primary child-care or other obligations could accept longer work commutes or more demanding—if higher-paid—jobs.

The discussion also suggests that there is a women's transportation problem that can be differentiated from the problems that men and those who are not parents face, and that embedded in the women's transportation problem are the transportation problems (including safety and security issues) facing their children.

What the foregoing analysis did not directly address is whether this problem will continue. It seems reasonable to assume that if women continue to bear a disproportionate share of direct or emergency responsibility for their children, the travel differences generated by these responsibilities cannot disappear without remarkable changes in other societal systems. Even if women did not make longer-term decisions based on these responsibilities, and society changed so that women were able to increase their occupational and income levels, it is still clear that they would have different travel patterns than comparably situated men.

ACKNOWLEDGMENT

The overall study on which this paper is based is currently or has been funded by the German Marshall Fund, the National Science Foundation, the Centre National du Recherche Scientifique, the Rockefeller Foundation, and the Dutch Ministry of Transport.

REFERENCES

1. H. Z. Lopata. The Chicago Woman: A Study of Patterns of Mobility and Transportation. *Signs*, Vol. 5, No. 3 Supplement, 1980, pp. S161-169.
2. M. B. Fox. Working Women and Travel; The Access of Women to Work and Community Facilities. *Journal of the American Planning Association*, Spring 1983, pp. 156-167.
3. R. A. Paaswell and R. Paaswell. The Transportation Planning Process. In *Women's Travel Issues* (S. Rosenbloom, ed.), Government Printing Office, Washington, D.C., 1980.
4. L. Richards et al. Perceived Safety and Security in Transportation Systems as Determined by the Gender of the Traveler. In *Women's Travel Issues* (S. Rosenbloom, ed.), Government Printing Office, Washington, D.C., 1980.
5. W. Recker and H. J. Shuler. Sex Differences in Travel Preferences and Decision-Making. In *Women's Travel Issues: Research Needs and Priorities* (S. Rosenbloom, ed.), Government Printing Office, Washington, D.C., 1980.
6. M. Wachs. Social Trends and Their Implications for Transportation Planning Methods. In *Special Report 196: Urban Transportation Planning in the 1980's*, TRB, National Research Council, Washington, D.C., 1982.
7. M. D. Meyer and E. J. Miller. *Urban Transportation Planning: A Decision-Oriented Approach*, McGraw-Hill, New York, 1984.
8. S. Rosenbloom. The Growth of Non-Traditional Families: A Challenge to Traditional Planning Approaches. In *Transportation and Mobility in an Era of Transition* (G. Jansen et al., eds.), Elsevier, Amsterdam, 1985.

9. S. Rosenbloom. *Mothers in the Work Force: The Transportation Implications of the Activity Patterns of Non-Traditional Households in France, The Netherlands and the United States*. Final Report. German Marshall Fund of the United States, Austin, Tex., 1985.
10. S. Rosenbloom, A. Ruhl, and J. Kremer. The Influence of the Combination of Employment and Childcare on Transport Needs. In *Proc., PTRC Summer Meetings*, University of Sussex, England, July 1983.
11. S. Hanson and P. Hanson. The Impact of Women's Employment on Household Travel Patterns: A Swedish Example. In *Women's Travel Issues* (S. Rosenbloom, ed.), Government Printing Office, Washington, D.C. 1980.
12. S. Rosenbloom. *The Transportation Problems of Single Mothers in France and the United States*. Final Report to the National Science Foundation and the Centre National de la Recherche Scientifique, Austin, Tex., 1987.