

## Keynote Address: The Ridesharing Challenge

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What I am going to try to do is to lay out a set of concepts, propositions about reality, and questions about ridesharing as a generic strategy. My aim is to provide a coherent framework within which to debate ridesharing issues and to clarify what I believe are the central challenges that promoters of ridesharing face.

Let's begin with a couple of very basic concepts. First, it is important to emphasize that there are many types of ridesharing. Nearly all the ridesharing that is out there is spontaneous. But in asking what we can do with policy, the questions are, To what extent can ridesharing be promoted by positive promotions and incentives and to what extent must we turn to negative incentives if we want to achieve substantial increases in ridesharing?

The second concept is rooted in ecology; in any national ecology the fact that a life form occupies a significant place does not mean that you can expand that place. In 1970, nearly three times as many or two-and-a-half times as many Americans commuted as passengers, not just as carpoolers, by mass transit. We know that by 1980 the mass transit figure was down somewhere between 5 and 6 percent of all commuters and there is no particular reason to believe that there has been a significant decline or change at all in the ridesharing figures.

I decided to start this analysis by asking in a very general way what works and what does not. It seems clear that what we have learned since 1970 is that public education of youth and patriotism do not have any significant impact on ridesharing behavior. Regionwide matching programs even with lots of advertising do not have any significant impact.

There is some question, I suppose, as to whether multiemployer, work site, third-party provider programs can work. The method that we know has a high diversion success rate, of course, is very vigorous employer campaigns in which an employer in a variety of ways communicates a policy to make ridesharing work. However, it is very important to note that even in relatively successful cases involving the creation of 50 or so vanpools in four metropolitan areas in demonstration projects, most of the diversion has turned out to be from transit and carpool rather than diversion of single-occupant commuting to vanpools.

In four demonstration cases only three provide adequate data to say what the diversion rate was. For example, in the first demonstration in the Golden Gate/San Francisco area 65 percent were first-year van and carpoolers; in Minneapolis, 73 percent; and in Knoxville, 64 percent.

Theoretically, a variety of modeling studies have suggested that you cannot do much about ridesharing just by putting, say, a 50-cent tax on gasoline. But if you put a several-dollars-a-day tax on park-

ing, you probably could have a quite significant impact because after all, the average person uses only about a gallon a day to commute to work round trip. So, even a 40- or 50-cent tax on gasoline would only add about 50 cents/day to the commuting cost, which is not enough to make a big difference. But if you levy a \$3 parking fee, which is equivalent to a \$3 increase in the gasoline tax, that would have a very considerable impact on vying for this portion of the energy market.

One of the central problems of any carpool or vanpool program is lack of data. May I just mention a few key facts here? First of all, there is the fact that the survey data are not very good in terms of the extent of current carpooling behavior. Typically, people are asked in surveys either whether they are carpoolers or whether they carpooled yesterday. But people are very rarely, if ever, asked whether they carpooled every day. Certainly, if we are to count the rate of energy savings, we need to know whether people carpool one day a week, three days a week, or five days a week.

A very high proportion of carpooling is with other family members at the present time. I discovered a very strange thing when I was writing my book on the urban transportation system and reviewing the 1970 computer tapes from the Nationwide Personal Transportation Survey. The survey had asked drivers in carpools how many people were in their carpool and then asked other people how they traveled, a certain number of whom said that they commuted as passengers.

Well, the number of commuting passengers was only two-thirds the number required to fill out the carpools as reported by the drivers. We assume that the drivers were telling the truth and that only one-third of the people they counted as being in their carpools were people who were not commuting. We calculate that probably a lot of them were children being dropped off at school and other family members making non-work-related trips. If you drop these tripmakers, the carpool's average occupancy falls down in 1970 from about 2.6 to somewhere between 2.0 and 2.1 and, moreover, a lot of carpools presumably disappeared and were not part of this survey because the passengers were not commuters.

It has been suggested that somewhere in the range of 40 percent of carpoolers are family members. My guess is that that excludes children being dropped off at school and so on.

When one thinks of family members who are not commuting and 40 percent of the remaining passengers, perhaps, as being family members, it suggests that spontaneous carpooling among people who are not tied by family is a much less broad phenomenon than we intend to think.

Second, within car pools there is a tremendous amount of turnover. Although I have not seen the latest report on the Minneapolis project, the 1979 report, which examines the first years of the project, noted the following. First is the instability factor. After nine months it was found that the number of carpools and vanpools had increased, but the total number of people pooling or riding transit had not changed. In other words, there had been some movement around--presumably, considerable movement out of transit, out of one kind of carpool into a vanpool, and so on. But, when you look at the total figures of how people are getting to work, proportions at both of the work sites on which there were data showed no change whatever in the proportion of people driving alone. Moreover, the monthly rate of removal exceeded that of new applicants. Thus, if there was to be any success, there was a need for a vast revamping of promotion programs at that point.

Finally, turnover among members of vanpools was producing approximately a 100 percent turnover rate per year. Now, a 100 percent turnover rate per year is not necessarily fatal in the case of vanpools because, when somebody drops out in a given month, you still have a driver and eight or nine passengers with a lot of incentive to find a replacement.

In a carpool with two or three people, of course, turnover is likely to be fatal. This is one of the reasons why it is so difficult to effect increases that last over any significant period of time unless you can maintain a very high level of promotional effort.

I decided it might also be useful to review some of the arguments as to why there should or should not be ridesharing. It is obviously important to distinguish between normal times like now and crisis periods.

You know the arguments that are given as well as I do, but basically we are talking about money in all cases and about some other things only as they apply to selected groups of potential ridesharers. Exhaustion, too, is an issue that affects commuters. The average one-way commute in the United States is somewhere between 9 and 10 miles.

The average vanpool respondent in the case-study cities I referred to earlier was about 60 miles. Well, the number of people in a 30-mile, one-way trip to work in the United States is a very small proportion of the total work force. They use more fuel, it is true, but they tend to be oriented toward carpooling in any event. Obviously, a certain proportion of them can be reached by additional pooling, but it is not so clear that they involve a vast market.

As we turn to employers, there tends to be a lot of promotional rhetoric about why employers get into ridesharing, but, in fact, the famous cases all involve one or more of these incentives and they are not very common. Reasons that prompt employers to look at ridesharing include severely constrained parking; a move from one location to another; expansion without the capacity of getting additional land and so on; employee access problems that might involve either a new site with severely constrained highway capacity or severe congestion around a site; a greatly-expanded single site without concurrent expansion of nearby road capacity; or strong public relations programs, which have been very important in getting a number of oil companies into the ridesharing business.

Also, as we think about a fuel emergency from the standpoint of employees, the key issue clearly will no longer be saving money or the overall saving of fuel, it will be that of conserving fuel for other purposes. In a fuel emergency, the amount of fuel

available is going to be set by indigenous forces. It will be set by rationing, it will be set by constraints of gasoline lines or closings of gasoline stations, and so on. People will use all the gasoline they can get. The only question is, Will they use it for commutation or will they use it for other purposes?

So, there will be some incentives for employees that do not relate to energy conservation but relate to some other bounds. And, doubtless, there will be appeals to patriotism that will have more impact during a really serious emergency.

As far as employers are concerned, obviously, they will have the additional incentives of being concerned to make sure that their employees can get to work--that they do not spend 3 h on the gasoline line on their way to work in the morning.

Ridesharing has both a positive and a negative side. Let us turn to some of these negative factors. Most reports focus on time losses. When Jim Womack and I were doing some analyses of this a couple of years ago, we concluded that rigidity was a more serious factor than time loss; that the great advantage of mass transit, even though it tends to be slower than ridesharing, is its frequent departures and arrivals.

There are only a limited number of people in the labor force who can accommodate having to go to work and come back at a preselected time every time, and there are very many people who could do it but severely resist doing it. There are incentives in a great many workplaces that make it somehow bad citizenship to be quite such a clockwatcher.

The time required to make schedules is not trivial in carpools or vanpools. With a 100 percent turnover rate, one has to be dealing with that fairly frequently as well as with people who are only willing to pool with those whom they may know or those with whom they have some fairly close personal friendship. This can be an extremely serious problem and it may go far toward explaining why there is so relatively little carpooling among people who are not family members.

Finally, of course, there is great variation as to whether people consider carpooling beneficial in social terms or burdensome. But even those who might find casual conversation beneficial tend to be very concerned in many cases about such issues as allocating costs and reconciling attitudes toward how safely one drives, how punctual one is, and so on.

For employers we know relatively little about how much schedule ambiguity can entail costs for those employers who have not gotten into carpooling. We know, but we do not know a great deal, about the extent to which there is concern about leaning on employees for ridesharing purposes or the extent to which there is fear of generating backlash or using up some of the chips that management feels it has available.

We know that there is very considerable reluctance to allocate management time and energy to something that has no potential of being a profit setter and, indeed, is likely to even be a loss setter, since there are always some overhead subsidies and costs in ridesharing programs.

That gets us to the issue of why governments should care what employers feel about this. In normal times the argument is, of course, that energy conservation is key, but I want to say a few words in a moment about how powerful that argument may be. It may be that in some selected situations there is an opportunity for a reduction of infrastructure requirements that would otherwise be required of commuters.

There is obviously a potential in some situations

for cutting costs to meet the base ratio in transit, thereby saving considerable resources for transit agencies, except that, in general, transit agencies do not like ridesharing to compete with transit. So, even many of the most vigorous ridesharing programs have had to stay out of the corridors where this function might be performed. Whether it is going to be expedient to let ridesharing perform its function, I suppose, depends on how severe the transit crisis is going to be.

During a fuel emergency the key issue from the government's standpoint is not going to be energy conservation. Again, a fuel emergency will determine how much fuel is used. Rather, the real key will be when we think that it is important to help employees, for example, save some fuel during the week so they can take vacation trips; otherwise, the tourist industry is going to be devastated by the fuel emergency.

As far as the personal disruption issue is concerned, that is a matter of government, perhaps, making it easier for people to get through the fuel emergency with less displeasure than they would otherwise experience. However, this is an intangible benefit on which it is hard to place a quantitative value.

There is the argument that government is not prepared. We know that the government is not likely to use very powerful sticks and it could be argued that without the sticks you cannot have more than a very negligible effect. So the question is why should government get engaged in an activity in which it is not prepared to implement with enough vigor to really make a difference. If one thinks about the use of sticks, let us suppose that a national will developed to use various kinds of taxes or other schemes to bring about fuel conservation in the United States. There is a very serious question as to whether government should lean very hard on the citizenry to save fuel by carpooling or vanpooling to work as opposed to foregoing a certain amount of discretionary travel.

We know that the citizenry will give the highest priority to getting to work and they have to consider giving up other kinds of travel. When I was Secretary of Transportation in Massachusetts in 1973-1974, I learned that it was possible to get figures from the Massachusetts Turnpike Authority on the extent to which traveling was down at various state toll points. I discovered at the peak of the energy crisis that toll revenues were down by 30 percent in the most lightly settled, rural portions of the state, western Massachusetts, the Berkshires, and so on, but down only 3 percent in central Boston exchanges. Clearly, people were making local trips and doing most of their saving by taking other kinds of discretionary trips.

Is there anything wrong with that? Is there any reason why government should try to influence people's behavior in that respect? An argument that is quite powerful in public sectors today is that government should leave people alone except when there is a very powerful social argument for intervention. This posture certainly applies in this case. The costs of ridesharing, when you take into account the rigidity, the time losses, the patrons, as well as the dollar costs, and you offset those against the dollar savings, the savings are quite high. The question as to whether this is the least expensive or one of the least-expensive means of energy conservation when you take into account the personal losses cannot be considered an open-and-shut case.

We do not know what the costs in terms of work scheduling and so on would be for the employers who have chosen not to engage in ridesharing promotion

and, until we know a lot more about that, it can be argued that we should not be too vigorous in going beyond just persuasion.

In specific corridors, ridesharing is highly competitive even when steps have been taken to avoid transit competition.

Energy conservation benefits are, perhaps, considerably less certain. During a fuel emergency, nobody can make any serious arguments against a general encouragement of ridesharing, but many would argue against intangible incentives, such as a tax on commuter parking, given that you are not going to save any fuel in a fuel emergency and, second, that employers and consumers should be left free to cope as they will.

In reviewing the entire ridesharing picture, it seems to me that we really do not know a tremendous amount about why the successful employer programs work. We know that some employers have made it work. We are not sure which of the incentives they have used have made it work and, indeed, I suspect that the most important of these incentives is the creation of a cultural atmosphere in which ridesharing plays an important role. It may involve work reorganization in some situations so as to make it more feasible for people to predict their schedules or to get by without their cars during the working day if they have jobs that sometimes require that they use their cars during working hours.

Two questions arise about employer promotions. First, are there any significant numbers who would respond to what I would call weak incentives? These incentives are weak because they do not involve penalties of any magnitude if you do not go along with them and they do not significantly alleviate the cost and inconvenience that an employee will experience if they respond.

The second question relates to elasticity of demand or elasticity of response to various kinds of incentives. However, we know almost nothing about how powerful the incentives would have to be to bring about really substantial increases in ridesharing. And it seems to me that we cannot say a great deal about the benefits of government intervention until we have some idea of the answers to these questions; that is, how many employers would respond and under what kinds of conditions.

It may seem strange to say that one of the major unknowns is how great are the energy savings. It seems to me, in fact, that they could turn out to be very trivial under certain kinds of assumptions. We do not know a great deal about the uses of cars left at home by people who enter carpools and vanpools, but there are some fragmentary studies that suggest at least 40 or 50 percent of the mileage saved tends to get used by other family members when the car is available at home.

There are an increasing number of economic modeling studies that suggest, going back and looking at the last 30 years, that households have gone to enormous lengths to hold their total transportation, personal mobility expenditures constant. They have responded to the fuel price increases of the 1970s, the changes in the cost of vehicles, and so on in ways designed to hold the total share of their personal budgets for personal mobility relatively constant.

If that is the case, it may well be that savings in one area will tend to be reflected, at least to a limited degree, in expenditures in another area. To the extent that people save money carpooling, they may be more inclined to spend a little more driving for recreational purposes on weekends, evenings, and so on. We know virtually nothing about this at the present time.

As automobile fuel economy improves, the benefits of ridesharing are reduced as well. The obstacles to massive increases in the ridesharing modal split mean for the most part that we are talking about rather small numbers. As I have noted here, some calculations that Jim Womack and I made a couple of years ago suggested that, as of 1980, if you could get 10 percent of all the drivers--forget about the passengers, the transit riders, and so on who might be part of the potential clientele for ridesharing programs--whether they were in carpools or driving alone to shift the passenger status somehow, the saving would have been about 1.6 percent of total automobile fuel consumption (about 50 000 bbl/day). And a 10 percent diversion of all drivers is a phenomenal diversion. If one assumes that, at most, one-third of those attracted to a vanpool program would be former drivers and that over a total ridesharing program maybe half would be former drivers, we are talking about attracting a new 20 percent of the work population into a ridesharing program. In order to achieve the kind of savings that this would involve, something far beyond anything that anybody has really dreamed about today would have to occur.

I have already talked about the very high diversions. The estimates that we make in the 1980s may be unrealistic. For one thing we did not assume very high diversions in transit and carpool. We assumed in making that projection of a 1.6 percent saving that there would be no diversion from transit and that there would be only modest diversions from other pooling modes. Clearly, we overestimated the potential saving even given automobile fuel economies as of 1980.

Also, some pools we know involve central pick-up points and, to the extent that people have to drive to a central pick-up point, engage in cold-start driving, which involves a few miles but very poor fuel economy. We would have to subtract that use as well. So, again, there are savings, but whether those savings are a third or a tenth of the fuel that people would otherwise consume is an unknown fact at the present time.

It seems to me that one cannot extrapolate simply from those who currently rideshare. Those that do not currently rideshare presumably have work situations and preferences that get gradually less favorable to ridesharing. So the more people pull in, the more sense of grievance and the more sense of inconvenience and possibly even economic loss they are going to experience.

The same thing may be true of employers. Now, it may be that there are lots of employers who are simply traditional and, if you can get them to change, would discover it would be to their benefit. But it is hard to be sure of that without a lot more research than has been done to date.

Finally, how great is the potential in a fuel emergency? The unknowns here are, first, how great would a fuel shortage have to be so that large numbers of employers might begin to respond to jawboning appeals and move into ridesharing programs. Frankly, we have not seen a tremendous amount in this scale of crisis that has been witnessed to date. So, maybe 8 or 10 percent fuel shortfalls will not do it; maybe not even with 20 or 30 percent

fuel shortfalls. Nevertheless, the situation may be just that kind of crisis to bring about a dramatic change in employer attitudes.

Could ridesharing under any circumstances significantly relieve gasoline lines or the need for rationing? Nobody, I think, can say at the present time.

And then, how would households use the fuel saved? Again, they would use it. One does not doubt that they would use the fuel that was saved. The question is, Would there be very positive effects on the economy if people did not have to use it all getting to work?

Then there is the question of whether, if the crisis potential is great, there is much point in our doing much before a crisis to prepare for it. Given that a revolution in Saudi Arabia, for example, would take a couple of months to visit its effects significantly in the United States, the Middle Eastern war of 1973 began in early October and the gasoline lines did not get under way until January 1974. The question of how much planning in advance or readiness preparation is needed is, again, a very uncertain question.

In conclusion, I am left with a few questions, maybe challenges, that I can pass on to this conference. First, is there much of a case to be made at present for more than a very low-key, low-cost government program of encouraging employers and employees to think about the benefits of ridesharing and providing some technical assistance to those who show an interest and who might be prevented from going forward by simple lack of capacity?

Second, is it not the time when we ought to take the opportunity to reflect a bit, to learn, and to give considerable priority to research on some of the major unknowns about ridesharing?

Finally, is there much value in contingency planning, given that ridesharing would obviously be a part of any fuel emergency strategy? In particular, would there be much value in having what I have called "fire drills," or periodic efforts, for a week every year or two for employers to actually implement their readiness plans--maybe to work with volunteer employers who could be induced on a patriotism-public relations basis to participate in ridesharing in the hope that, as they implemented these plans, some would find that ridesharing really was not so bad and would choose to engage in such programs during the rest of year as well.

These are the kinds of questions that people who are concerned with ridesharing might well address during this conference and in the months and years ahead.

[Editor's Note: Altshuler's address was condensed for publication in this report. His presentation also included viewgraphs and comments about them. Further information may be obtained directly from Altshuler.]