

roughly five years ago, General Motors offered consumers exactly that tradeoff: to spend some extra money and buy an air bag for extra safety. This option was available on the big, luxurious GM cars; and it was very cheap compared to the kind of price differences we have been discussing. Approximately a million cars could have been purchased with that option over the years GM offered it; but, in fact, only ten thousand air bags were sold. That is, only 1 percent of the buyers were willing to spend a little bit more up front in order to purchase extra safety. So I'd conclude that there's no reason, whatsoever, to believe that safety considerations are going to rescue US manufacturers when price and efficiency considerations are not on their side.

Okay, let me sum up and quit. Looking at sensitivity to overall car size, looking at sensitivity to operating costs, looking at sensitivity to purchase costs, looking at demographics, and looking at safety, there's no reason to believe that a mini-car like the Honda City could not substantially enlarge and dominate the small car market. Using the most likely combination of characteristics for the car, I would project a total market share of 60 percent for subcompacts and minis, with minis taking about 40 percent all by themselves. Thus the U.S. industry has plenty to worry about. In terms of the original metaphor, the Honda may not get all the blanket, but it's sure going to leave the rest of us feeling pretty cold.

DISCUSSION

UNIDENTIFIED: I'm wondering if you're using the correct model. From the things I have been reading, the Japanese seem to be more interested in the Third World Market.

DR. CHARLES LAVE: That may or may not be true, but I certainly wouldn't want to be an American manufacturer with that particular car hanging over my head. It is true, as Dan Roos pointed out, that under current import limitations where Japan is limited by number of cars, then there's no reason to export that car--they would rather use up their quota on expensive cars. But we don't know whether that quota will persist. Also, the subject this morning is the possible future of mini-cars; so you can either regard my calculations as being the extent of a particular threat, or as being the potential for a small car in our market.

JIM PLINE: I would assume, Charles, that your prediction is comparable to what happened with the Volkswagen Beetle. It came in and fairly well took over the market.

DR. CHARLES LAVE: Yes, that's exactly the way I see it. The car is sporty, youth-oriented, cheap, and efficient. As far as I can see, it appeals to exactly the class of people who produced the import boom in the first place.

UNIDENTIFIED: You may be correct on the initial sales appeal of that car, but remember that the BMC Mini and the Lada once looked that way in Canada; but then their sales plateaued out at some point, and they did not go on to take over everything.

DR. CHARLES LAVE: My guess about the Canadian experience is that the reputation of those cars eventually caught up with their sales, just as happened with the Renault Dauphine in the U.S. twenty years ago. But my assumption, here, is that

the Honda City is a high quality car, unlike the Mini and the Lada; and remember its comfort, performance, capacity, and features do not mark it out as inferior either.

UNIDENTIFIED: You're right about the quality issue. Also, those cars simply did not hold up to Canadian winters, and they tended to rust out very quickly because of road salt.

DR. CHARLES LAVE: I remember, when I was a kid, we were told that the way to catch a pigeon was to put salt on its tail. Apparently, the Canadians discovered that solution for catching up to these foreign pigeons.

UNIDENTIFIED: The numbers you quoted and the prices, is this before or after the car has been put through the Federal mill here to meet our safety and emission standards?

DR. CHARLES LAVE: Well, what I was told was that the \$3,500 would be the price for a "Federalized" car. Remember, the Japanese have pretty strict smog standards, too.

POTENTIAL USAGE

Kenneth Orski, President, Corporation
for Urban Mobility

PAT WALLER: You make it sound depressingly good. All right, our next speaker is C. Kenneth Orski, who's president of the Corporation for Urban Mobility. It's a public purpose venture to promote public/private cooperation in urban transportation. He's formerly associate administrator of the Urban Mass Transportation Administration, and spent the last four years with the Marshall Fund, where he participated with Dan Roos in the development of the MIT Future of the Automobile program. And he's going to talk to us about the potential use for this small vehicle that we're discussing.

KENNETH ORSKI: As Pat said, my assignment is to talk about the future potential use for minis, and I confess that I run immediately into some problems of definition, because frankly, I'm not sure I know what a mini or a micro is. Certainly the kind of car that Chuck Lave described, the Honda City Car, doesn't sound like a micro car or a mini car. It sounds pretty much like a conventional car, perhaps somewhat smaller in size and certainly cheaper to operate. I don't think that any of us really reached a consensus on what a mini exactly is. Thus, rather than talk about what the potential uses for the minis are, I would like to rephrase the question and ask what are the acceptable minimum performance and design standards for cars that would make them significantly different from the cars that we know today. I have another reason for rephrasing the question. It seems to me it brings up the old philosophical question that we all had to address in our high school essays, and that is, should we let technology dictate our needs, or should we, on the contrary, make our needs influence the technology? In other words, are we to accept the technology of the mini as a given and try to adapt our requirements to it, or should we, on the contrary, define our minimum requirements and then tell the engineers to design a car that we need. Well, from the rhetoric that I've just given to you, I think it is clear that I'm in favor of the latter approach: to ask ourselves what is it

indeed that we are looking for in a so-called mini car. I'm not sure whether we are ready to reach a consensus on a set of minimum acceptable performance standards for a mini car. I think our answers would depend on the context in which we live. Do we live in the city, or in the country, or in a suburb? Do we do a lot of city driving or freeway driving? Do we live in hilly or flat country, and so on and so forth? If I were pressed to provide my own set of acceptable minimum standards, and I think that all of us could go through that kind of exercise, I would provide you with the following. Don't forget that I live in Washington, D.C. in a rather dense urban area, and therefore my travel behavior and my travel needs may be very different from your travel needs. My minimum requirements would be as follows: I'd like my car to have minimum cruising speed of, say, 50 miles an hour. Now the speed limit in the District of Columbia is 25 miles an hour, but obviously I want more than just the minimum legal speed limit as my minimum speed requirement. I don't care much for high acceleration, I think I would go along with, say, 0 to 40 miles in 10 or 12 seconds, because the kind of driving I do does not require much acceleration performance. I am interested in good fuel economy. I still hope that I will someday own a car that does 50 or 60 miles to a gallon. I want to accommodate two passengers in comfort, but I wouldn't mind if my car accommodated more than two people. I want some space for luggage, but again, I'm willing to compromise on trunk space, as well as on cruising range. I probably wouldn't need more than, say, 100 miles cruising range so that I could fill up, let's say, once a week and pay no more than \$10 for a fillup. And finally, I want a low sticker price. I am a romantic who harks back to the days when a car could be bought for three or four thousand dollars fully equipped, heater, radio, and so on. My requirements, in other words, are essentially for a city car, a low cost, low performance vehicle intended for short distance, non-freeway commuting and for local urban and suburban travel on weekends. It would serve, basically, my day-to-day transportation needs that I calculate represent roughly 80 percent of my automobile travel. Now those happen to be my requirements, but even there I have to ask myself, what about the remaining 20 percent of my travel needs? After all, I don't use my car simply for commuting. I do go out of town occasionally, my mother-in-law does visit us occasionally, which means that we have an additional passenger or two. I do have to haul bags of peat moss every spring, so I do have some trunk requirements, and so forth. How do I handle the other 20 or 30 percent of trip requirements? Now, here I must let my imagination roam, for given the way the auto system functions today, I see no solution for people such as myself, let alone for people who do a lot of freeway driving or who have large families and need larger cars. I would have to imagine, in order to make the mini, the real mini car, possible, a vastly different automobile system, a system that would include a vastly expanded and greatly more accessible system of renting and leasing vehicles. No matter how city-oriented you may be, sooner or later you will need that larger car. Can we envision a society which, in addition to having automobiles owned by individuals, also provides an extensive system of leasing and renting automobiles? The conventional wisdom and our instinct would say no, because from the very beginning of the automobile age, we have regarded the car as an article of personal possession. In some cases, such as farmers cooperatives, owning agri-

cultural implements in common, the notion of sharing vehicles has been accepted. When it comes to sharing passenger cars, however, I think we are in virgin territory. However, there are some tentative signs that attitudes may be changing. The practice of time sharing various types of equipment, from sailboats to lawnmowers and power tools is spreading. Informal cooperatives are being formed to spread the cost of high-cost equipment and, in theory, this principle could be extended to automobiles. We have looked at some examples overseas, where the practice of sharing cars is beginning to take hold, especially in Sweden. Of course, Sweden is a very special country, with a long tradition of cooperatives -- food, housing and other kinds of cooperatives. So Sweden may not be our typical model, but still, if you look at Sweden, if you take Sweden as a harbinger of things to come, automobile sharing, the common possession of automobiles is a possibility. There are some examples of Swedish communities where neighbors banded together to own special purpose vehicles such as RV's or station wagons, as community property. Likewise, in the Netherlands and in France, there have been some tentative attempts to look into joint use of cars. We don't have to adopt that kind of an advanced notion, although that notion ... I see Bob Whitford here in the audience ... the notion of automobile cooperatives will be tested in the United States, as well. Bob Whitford and Tom Sparrow from Purdue University are now working on a demonstration project which would test the feasibility of an automobile cooperative in a residential neighborhood. But I'm more drawn toward the concept of using the conventional private rental firms, and have them expand their vision to include the widespread rental of automobiles on a decentralized neighborhood basis. So far, the automobile leasing and rental agencies have looked primarily to the business market. It is no accident that they are usually located at airports and in downtown locations. They are after the business market. However, there's no reason why, if the firms saw a market for short term automobile rental among residents of urban neighborhoods, why these agencies could not expand, and perhaps even make a killing, by renting automobiles in residential areas. Here again, there are some vague signs that this is beginning to happen. Right here in Washington, D. C., Budget Car has launched a few neighborhood-based auto rental agencies, and I'm told that they are booming. If that kind of a system could be universalized, if it could be widely adopted, then I think it might begin to make sense to think about specialized mini cars that would satisfy the city travel needs, but still give you the freedom and flexibility that comes from owning a standard automobile. Unless and until we are able to divorce the notion of automobile ownership from automobile possession, I will remain skeptical about the widespread feasibility or acceptance of a micro car. On the other hand, if we did revise our notions rather drastically, there might be a very promising market for them.

DISCUSSION:

BOB WHITFORD: I'd like to add a footnote to your statement. We are in the process of forming an agreement with Avis now in terms of jointly looking at some experiments with the Rent-A-Car. Our experimental effort as reported in the papers will be presented in Session 249 for this Transportation Research Board Meeting.

CARL CLARK: NHTSA. I noticed that you do not include safety at all in any of your minimal requirements. If you think about this at all, the small car seems to be less safe at the present time or could be more safe. Why didn't you include any aspect of safety, or do you think that's totally outside consideration?

KENNETH ORSKI: Well, I confess that my personal ... in my personal calculus I put safety rather low, much to the displeasure of my wife. I don't "buckle up." I am probably not your typical consumer or automobile owner. I think most people would probably rank safety much higher and elevate the minimum standards much higher than I would. I've driven a Fiat 500, for years but never felt any less safe than I do now, driving a larger Toyota. But it's a matter of perceptions, and I readily admit that opinions of people will differ on where to place safety in your rank of priorities. I personally would trade off safety for sticker cost, because I don't see how I or a large number of other people can afford \$10,000 cars in the future. If there were a way of producing a \$3,500 car enabling both my wife and I to each have a car, I would be willing to sacrifice quite a bit of built-in safety. Now that may sound radical to my NHTSA friends, but so be it.

UNIDENTIFIED: How close would a car like the Honda City come to meeting all of your requirements?

KENNETH ORSKI: Oh, I think it would meet them and exceed them. I would be willing to compromise much more in terms of interior space, for example. As I understand it, the Honda City Car is a four seater. Now, personally, I don't need a four seater 80 percent of the time, so I would be satisfied with something smaller, lighter, and cheaper.

UNIDENTIFIED: I realize that it would meet your minimum requirements for a mini or a micro, that is, 80 percent of your requirements, but would it, the Honda City Car, perhaps come close to meeting 100 percent of your requirements?

KENNETH ORSKI: Well, never having seen it I really can't answer. I wonder whether the car is comfortable enough to use on a 3,000 mile trip to the Rockies, or whether it is large enough to haul a lot of camping gear. Maybe it would satisfy my needs 90 or 95 percent of the time. I do drive out West, say, once every two years, but I'm perfectly willing to rent a car for that purpose, so we're talking about marginal utility.

FRED REEVES: Berkeley, California. I'm particularly interested in your leasing concept, and I was wondering if someone could act as a central point for rallying people who have found these access points. For example, in my proposals, I found that one of the things that people need to know is that it's happening, that it has a marketing potential, it has experience. I was wondering if you could collect opportunities from people in the audience, so we have some examples.

KENNETH ORSKI: I think that's an excellent idea. There is really no clearing house and no source of information about this, and one finds out about it almost by accident, by talking to people. I would suggest that the MIT project on the Future of the Automobile, and Bob Whitford's project at Purdue are two logical places to which this kind of information could flow, and from which in turn it could

be disseminated to others. I would certainly applaud and second the notion that there should be more communication on that subject.

The question was whether the proposed leasing and renting arrangements might not be more typical of suburban behavior than city behavior. Yes, and no; it seems to me that it was not an accident that Budget Car began to experiment in central city, because that's where you have the concentration of demand and also the highest percentage of noncar owning people. In Manhattan, that kind of life-style is also very prevalent. Now, lots of people don't own cars in Manhattan, and rely on car rental agencies for their automobile travel needs. So, in many ways I think the renting and leasing approach lends itself best to inner city living. On the other hand, the need for cars and for additional cars is probably greater in the suburbs, where there is no public transit alternative, and where one is literally prisoner in one's own home unless you have a car. But I think one would probably have to ask the car rental agencies, all of which are now undertaking market studies, to find out where they feel the market really lies. I suspect you will get different answers from different people.

UNIDENTIFIED: Do you feel that manufacturers give any implied warranty say to sell these small cars even if there are no regulations?

KENNETH ORSKI: Maybe I should invite some of my colleagues to comment on this. I have no opinion on this, but I think Dan does.

DAN ROOS: The only comment I would make is it is ironical if one looks at the Japanese/US situation that the only area where unquestionably US productivity is superior is with respect to safety. And yet, US auto manufacturers have chosen never to utilize that with respect to their advertising and trying to gain greater market share. Certainly we respected their perception to take the issue as not important. Now I suspect the reason for that is an underlying fear that if one raises nasty issues about accident death and safety, it will have an overall negative impact on people's desire to buy an automobile, and therefore that can offset any competitive advantage that they might have with respect to the Japanese car. Although there are some people who will argue that and will say that if one looks back at some of the experiences that have been widely reported, the most significant of which was Ford's attempt during MacNamara's administration at Ford to market safety, but the conclusions were nowhere near as negative as currently perceived.

THE MARKET POTENTIAL FOR MICRO-MINI CARS IN THE UNITED STATES

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PAT WALLER: Thank you. I believe, Ken, that your views on safety are not at all atypical but rather would be very typical of the average automobile purchaser. And, in regard to your views on sticker price, I grew up with the belief that anything you paid more than \$5,000 for had to have a fireplace.