

# CAR TALK

by Stuart Kollar



BUMPER TO BUMPER: SUSAN HELPER IS SHOWN AT THE CRAWFORD AUTO-AVIATION MUSEUM OF THE WESTERN RESERVE HISTORICAL SOCIETY, CWRU'S NEIGHBOR IN UNIVERSITY CIRCLE. SHE IS STANDING ALONGSIDE A PROTOTYPE BUILT BY CLEVELAND'S PEERLESS MOTOR CAR COMPANY IN 1931. THE CAR WAS A FINAL EFFORT TO REVIVE THE FORTUNES OF THE COMPANY, WHICH STOPPED PRODUCTION OF AUTOMOBILES SHORTLY AFTER. THE MURAL ABOVE THE CAR, AND SHOWN AGAIN ON PAGE 28, WAS PRODUCED BY FERRO ENAMEL CORPORATION OF CLEVELAND FOR THE 1939 NEW YORK WORLD'S FAIR.

## ECONOMICS PROFESSOR SUSAN HELPER INTERPRETS THE INTRICATE DANCE BETWEEN AUTOMAKERS AND THEIR SUPPLIERS.

If you are like most people, your interest in the relationship between Ford Motor Company and Bridgestone/Firestone, Inc., dates to August 2000, when the bad news started to break. More than 100 US deaths attributed to faulty Firestone tires. Most of these mounted on the Ford Explorer, perennially the nation's top-selling sport utility vehicle. A \$450-million recall that threatens to ruin Firestone. Finger pointing. Lawsuits. A lengthy Congressional investigation.

Susan Helper, associate professor of economics in the University's Weatherhead School of Management, is working to prevent such problems in the future. During the past decade, she has become one of the world's foremost authorities on the dynamics between automakers and their suppliers, using research techniques more familiar to journalists than economists and publishing findings that are a source of enlightenment to industry leaders and colleagues alike.

"One of my principal concerns with American automakers is their emphasis on shareholder value to the exclusion of consumers' and employees' best interest," she says. "The Ford-Firestone situation is an example of what can happen when a well-run company like Ford, which doesn't want to be evil or immoral, sets up economic pressures that lead to tragedy."

Prof. Helper notes that Ford's preoccupation with low prices led it to reject an Explorer tire bid from the Goodyear Tire & Rubber Company in 1996, though Goodyear had supplied more than two million tires for the model. And even a long, shared history with the automaker did not shield Bridgestone/Firestone from similar pricing imperatives.

"The relationship between Ford and Firestone goes all the way back to their founders," she says. "Henry Ford and Harvey Firestone forged one of the most famous friendships in the history of American industry. During the early 1900s, they took annual summer camping trips with Thomas Edison. In 1947, Ford's grandson married Firestone's granddaughter—their son, William Clay Ford Jr., is the current chairman of Ford Motor Company."

But company purchasing policies did not allow even a favored Ford supplier like Firestone to believe it would receive contracts without significant cost benefits, she explains.

Prof. Helper's interest in the details of such relations between supplier and customer dates to her days at the Harvard University Business School, where she earned her PhD in

economics in 1987. She cites two major reasons for being attracted to this specialty. First, companies themselves were generally excluded from the classic study of economics.

"Economists traditionally study markets without closely investigating what goes on inside individual firms," she says. "I thought it was important to learn why these companies made decisions to buy components rather than producing them internally."

"Second, during the early 1980s, when US manufacturing was undergoing a deep recession, many economists argued that the underlying cause was high wages. But I think the rationale for having an economy is to produce a high standard of living for as many people as possible."

### Exit Signs

Further inducements to concentrate on the auto industry included its unquestionable importance to the economy and the Japanese quality-control revolution that began humbling domestic car producers during the 1970s. To compare the supplier-relations practices of companies like Toyota and Honda with those of America's Big Three, Prof. Helper adopted a dichotomy introduced in economist Albert Hirschman's classic work, *Exit, Voice, and Loyalty* (Harvard University Press, 1970). Here the author classifies responses to unsatisfactory relationships in terms of "exit" and "voice."

"If the service in a restaurant doesn't suit me, I have two options," Prof. Helper explains. "I can exit the relationship by taking my business elsewhere, or voice my dissatisfaction to management in an effort to rectify the problem."

Both options have advantages. Assuming a wide range of alternatives, exit is an easy tactic that reinforces the customer's primacy. Voice requires sustained effort but promotes positive change through collaboration. Both strategies are used by large automakers. For example, Dr. Hirschman writes that the ideology of exit has always been powerful in America, while, in Japan's more isolated economy, a scarcity of alternatives has taught the virtues of compromise through voice-based negotiation.

"The way Toyota buys a gasket from a supplier is very different from the way GM buys one," Prof. Helper says. "In many—though not all—Japanese companies, relationships are based on problem-solving mechanisms rather than financial arrangements."

Thus, she notes, while such American firms as Ford were using exit strategies that maximized their bargaining power, Toyota and Honda established a rich flow of information with suppliers that eliminated unnecessary and expensive process steps, developed easily assembled modular components, and exploited the virtues of “lean production,” a methodology stressing low inventories, continuous improvement, employee empowerment, and heavy investments in human capital. By the 1980s, the voice system had helped the Japanese design and produce cars with defect rates on the order of one-third the standard among comparable Big Three models while maintaining a cost advantage of twenty to thirty percent.

Ironically, Prof. Helper’s research shows the Japanese problem-solving approach is embedded in the origins of American car companies. The American purchasing preferences have alternated between voice and exit during the past century, with voice relationships dominating the industry during its infancy.

“There was a great deal of cooperation between early automakers and suppliers, but suppliers actually had the upper hand,” says Prof. Helper. “Companies like Timken had long produced parts for carriages and bicycles, so they were larger and better established than the automakers. These suppliers were important sources of innovation and working capital. Timken even created ads aimed directly at consumers that said:

‘Timken axles in your car, no matter what its size or price.’ And, before they would sell axles to an auto assembler, they insisted on reviewing the car’s blueprints, to make sure that a shoddy vehicle would not undermine Timken’s reputation. Supplier-customer relations during this period were Japanese-like in that they involved long-term associations, joint product development, and attempts to minimize inventory while producing a variety of products.”

### Philosophical Differences

Explosive growth during the early 1900s soon gave automakers sufficient working capital to change these relationships. Between 1915 and 1926, Ford concentrated on building its own parts plants, while General Motors acquired suppliers, including massive Fisher Body.

Called “vertical integration,” this preference for making components internally eroded during the late twenties, when outsourcing began to increase. The reason? An emergence of many new suppliers who could produce specialized parts cheaply without the fixed costs associated with product development and heavy capital investment. Though General Motors remained committed to vertical integration—a characteristic it retains today—two-thirds of Ford’s production

came from outside sources by the 1930s. Though outside suppliers retained an important percentage of production, almost all of the design of parts was done by the automakers.

“The automakers made it easy to be a supplier by doing their own design and sub-assembly, which is often where the skill lies,” says Prof. Helper. “All any supplier had to do was read the blueprints. This created an exit system that gave auto companies a great deal of power but didn’t provide the kind of innovation that characterized their Japanese counterparts.”

Since the 1980s, US auto companies have gone far to replicate the Japanese system, involving suppliers in collaborative design efforts that have helped close quality gaps. Among the resulting changes is a new emphasis on allowing suppliers to do more of their own designs, a practice that can reduce both defects and costs.

“Consider seats, for example,” says Prof. Helper. “In the old days, it was common to see seat assembly taking place in automakers’ plants. Now, the units arrive completely built and ready to install. Car seats have really gotten a lot more comfortable during the past ten years, and that’s because two major suppliers apply their expertise to the design as well as the assembly.”

But the Ford-Firestone problem indicates that US companies are not entirely willing to abandon the exit strategy, she points out.

“Japanese automakers use a long-range philosophy that places high value on trust. As Honda works collaboratively with suppliers, it says, ‘Look, we’re having some problems with your operation, so let’s solve them together. We may ask you to make changes that will cost you money. But if you trust us and work very hard, we’ll take care of you in the long run.’ When Ford pushes suppliers hard for low prices to help meet quarterly earnings projections, much of the loyalty that can come with a long-term voice relationship is destroyed.”

Prof. Helper points out, “Firestone had been receiving warranty data documenting deficiencies in Explorer tires. But the company did not share this information with Ford.”

Loyalty also applies to relationships between corporate management and the work force. For example, outsourcing merely to avoid paying union scale can be a shortsighted idea, Prof. Helper says.

“One thing businesses know how to measure really well is direct labor. At the same time, other costs aren’t measured directly; they are expressed as a percentage of labor, and this can lead to really bad decision making. Obtaining parts from a low-wage plant in Mexico initially looks like a great way to save money. But the accounting system doesn’t point to hidden costs. The company may be buying a bulky piece that is easily damaged and expensive to transport. In the end, it might have been better off making the part with its own trained work force. US automakers often fail to take full advantage of their human resources, though high union wages give them long-term employees who have a lot to contribute.”

Prof. Helper continues, “Only fifteen percent of the cost of auto production is labor, while thirty to seventy percent represents parts purchased from a variety of different suppliers. Yet, automaker-supplier relationships and their effects on technology had been largely unexplored.”

### On the Factory Floor


Fortunately, Prof. Helper’s own contributions to these issues are attracting positive attention. She is a research associate with the University’s Center for Regional Economic Issues (REI), based in the Weatherhead School. REI seeks to improve the quality of information available on the region’s economy and help the community make informed economic decisions.

“Sue Helper’s work is a beacon that has demonstrated over and over the vitality and promise of older industries,” says Richard Shatten, Ameritech Professor of the Practice of Regional Economics and director of REI. “She offers industrial leaders models and frameworks to help them move beyond traditional practices. She is quick to accommodate sudden changes in technology, such as e-commerce, and include it in her work.”

Keng Hsueh, manager of material planning and logistics at Ford headquarters in Dearborn, Michigan, says he and other Ford managers recently drew inspiration from an e-commerce paper Prof. Helper wrote with John Paul MacDuffie, an economist at the University of Pennsylvania’s Wharton School.

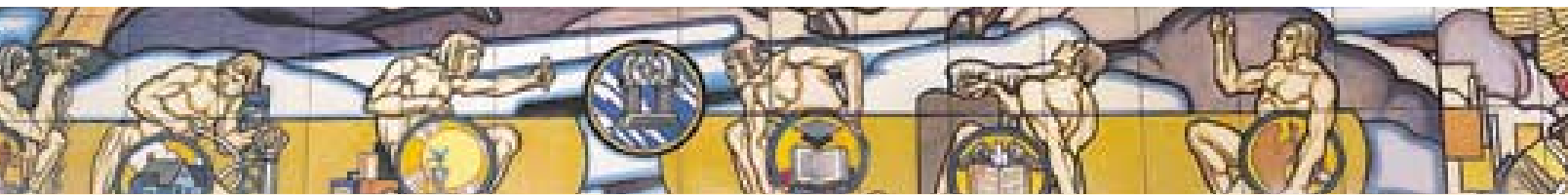
“Here at Ford we have a program called Leadership for a New Economy to give middle managers opportunities to learn e-business and total leadership integration,” he explains. “Prof. Helper’s paper ‘E-volving the Auto Industry’ is one of our reading materials for this program. I passed it on to some of our executives and contacted Prof. Helper to see if she would be available to address our group as a guest speaker.”

Visiting auto companies and suppliers is standard practice for Prof. Helper. Her research regularly takes her into production plants for firsthand observation and interviews with hourly workers as well as top executives. Information gathered during these trips supplements data she obtains through widely distributed questionnaires.

“The research Sue Helper does is extremely uncommon and represents the cutting edge of empirical economics,” says colleague James Rebitzer, CWRU’s Frank Tracy Carlton Professor of Economics. “Economists typically do empirical work on organizations by studying large data sets. But the information in these data sets on how organizations operate is extremely poor. Sue’s approach is remarkable in that it uncovers this information. This kind of innovative fieldwork is really making a name for the economics department at this university and in the economics profession as a whole.” 

*Staff writer Stuart Kollar is CWRU’s director of University publications. His last story for CWRU Magazine, “The Rotsky Factor,” appeared in the summer 2000 issue.*

PHOTOGRAPHY BY MARIUS CHIRA



## THE HELPER FILE

Susan R. Helper  
Associate Professor of Economics  
Research Associate, Center for  
Regional Economic Issues  
PhD, Harvard University, 1987

### WEB SITES

- [weatherhead.cwru.edu/helper](http://weatherhead.cwru.edu/helper)
- [weatherhead.cwru.edu/wsom/profiles/helpers.html](http://weatherhead.cwru.edu/wsom/profiles/helpers.html)

### RESEARCH INTERESTS

- Impact of supplier/customer and labor/management relations on innovation and environmental performance
- Impact of geography and wages on choice of production technique (particularly in the United States and Mexico)

- Factors underlying organizations’ success at continuous improvement

### SELECTED BIBLIOGRAPHY

- \* “E-volving the Auto Industry: E-Commerce Effects on Consumer and Supplier Relationships.” With John Paul MacDuffie. *E-Business and the Changing Terms of*



*Competition: A View from Within the Sectors.* Conference volume from the Berkeley Roundtable on the International Economy, forthcoming.

- \* “Economists and Field Research: ‘You Can Observe a Lot Just by Watching.’” *American Economic Review*, May 2000.

“Determinants of Trust in Supplier Relations: Evidence from the Automotive Industry in Japan and the United States.” With Mari Sako. *Journal of Economic Behavior and Organization*, 34, Spring 1998.

- \* Posted on Prof. Helper’s Web page at [weatherhead.cwru.edu/helper](http://weatherhead.cwru.edu/helper)

### SELECTED PROFESSIONAL ACTIVITIES

- Affiliate, MIT International Motor Vehicle Program
- Judge, Ernst and Young/*Automotive News* PACE Awards for global auto supplier innovation

### CURRENTLY DRIVING

1992 Saturn (“At the time, Saturn had positive relations with its suppliers and work force. They produced a good car.”)

### FAVORITE VEHICLE

12-speed Lotus Excel bicycle

S. K.