

Searching for a 'Supercar'

"A Practical Road to Lightweight Cars" by Frank R. Field III and Joel P. Clark, in *Technology Review* (Jan. 1997), Bldg. W59, MIT, Cambridge, Mass. 02139.

With visions of an ultra-lightweight, highly fuel-efficient "supercar" dancing in their heads, U.S. automakers joined forces with the federal government in 1994 to launch an aggressive research and development project. Its goal: to produce within 10 years a prototype automobile that gets more than 80 miles per gallon, offers the performance and convenience of a conventional car—and is no more expensive.

This last is the rub, contend Field, director of the Materials Systems Laboratory at the Massachusetts Institute of Technology, and Clark, a professor of materials science and engineering at MIT.

Using reinforced plastics for auto bodies rather than steel would bring a supercar within reach but would require drastic changes in current manufacturing and design processes. And the resulting supercar might well not be competitive. Reinforced plastics are much more expensive and less stiff than aluminum or steel. And a "unibody" (the design used for steel autos) made of reinforced plastics is hard to manufacture, because the plastic parts must match exactly. Unlike steel or aluminum parts, they cannot be bent, twisted, or banged into

shape to make them fit together.

All of this adds to costs. The reinforced plastic unibody of Ultralite, an experimental car developed by General Motors with the sole aim of getting the highest possible gas mileage (and with no regard for comfort or safety), would cost \$6,400 (at a production volume of 100,000), compared with \$2,500 for a steel unibody.

An aluminum car, based on either a "unibody" design or a "space frame" one (essentially a large truss structure), does better on that score. In a production run of 300,000 (mass-market vehicles such as the popular Ford Taurus are produced in volumes of 300,000 to 500,000), an aluminum unibody would cost about \$2,000, and an aluminum space frame about \$2,400, as compared with \$1,400 for a steel unibody.

An "affordable" supercar is not in the offing, the authors conclude. Instead of "revolutionizing" its designs and technology, the auto industry should focus on gradual weight reductions, especially on the manufacture of cheaper aluminum bodies that function as well as steel ones. More progress will be made that way than by pursuing a "technological chimera."

'Decolonizing' Science

"The Science Wars in India" by Meera Nanda, in *Dissent* (Winter 1997), 521 Fifth Ave., Ste. 1700, New York, N.Y. 10017.

Unmasking harmful "cultural constructs" is all the rage in the academic world. Lately attention has turned to science, attacked by Andrew Ross, Sandra Harding, and others as a Western "cultural construct" whose claim to a universally valid rationality is no more than a flimsy cover for imperialism and racism. These professors seem to think they are doing the oppressed of the Third World a big favor, observes Nanda, a science writer, but they are unwittingly opening an intellectual door for religious fundamentalists.

In India, Hindu nationalists have responded to the call for the "decolonizing" of science by aggressively promoting "Hindu ways of knowing." Nanda writes that the Bharatiya Janata Party (BJP), which won 36 percent of the seats in the Indian parliament's lower house last

May, insists in its recent *Humanistic Approach to Economic Development* "that the cultural ethos of the Hindu *Rashtra* (nation) must . . . have the final authority over what aspects of 'foreign' science and technology are admitted into schools and other institutions." When the BJP came to power in the Indian state of Uttar Pradesh in 1992, one of its first acts was to make the study of "Vedic mathematics" compulsory for high school students. In government-approved textbooks, standard algebra and calculus were replaced with 16 Sanskrit verses that merely provide formulas for quick computation.

History textbooks in India have also been rewritten as a result of the growing influence of Hindu nationalists in the state and central governments, Nanda says. The books now "cele-

brate all things Hindu (including even the caste system), propagate the myth of India as the original home of the 'Aryan race,' and deplore all 'foreigners,' including . . . Muslims. The history of Indian science and technology . . . is described as an unfolding of the Hindu genius," and the role of critical inquiry in science is given short shrift.

In India during the 1970s and '80s, a "sci-

ence-for-the-people" movement advocated the use of science as a means of social revolution, Nanda says. Those involved sought to employ scientific knowledge "to contest the dominant, largely Hindu world views on caste and women." But when influential intellectuals argue that scientific rationality itself is a "colonial construct," only the interests of Hindu nationalism are served.

ARTS & LETTERS

The Two Black Theaters

"The Chitlin Circuit" by Henry Louis Gates, Jr., in *The New Yorker* (Feb. 3, 1997),
20 W. 43rd St., New York, N.Y. 10036.

Pulitzer Prize-winning playwright August Wilson's call last year for an autonomous black theater for black Americans (subsidized by foundations and government agencies) still has the stage world in a tizzy. In January, he faced off with critic Robert Brustein, founder of the Yale Repertory Theatre, in a sold-out debate in New York's Town Hall. "What next?" said Brustein in the *New Republic*. "Separate schools?" Overlooked in all the hullabaloo, observes Gates, head of the Afro-American Studies Department at Harvard University, is the fact that a thriving black theater for the masses already exists: the "Chitlin Circuit."

It was born during the 1920s, when the Theater Owners Booking Association brought plays and other entertainments to black audiences throughout the South and Midwest. Though the association did not outlast the decade, the market it created—disparagingly labeled the Chitlin Circuit—did. Playing in theaters and school auditoriums, black touring companies crisscrossed black America, Gates says, providing "a movable feast that enabled blacks to patronize black entertainers. On the whole, these productions were for the moment, not for the ages. They were the kind of melodrama or farce—or as often both—in which nothing succeeded like excess. But the productions were for, by, and about black folks; and their audience wasn't much inclined to check them against their Stanislavsky anyway." They still aren't.

Today, working- and middle-class black Americans in the roughly 40 cities on the Chitlin Circuit go to see plays such as the one Gates saw in Newark, New Jersey: Adrian Williamson's *My Grandmother*

Prayed for Me. As art, Gates says, the play makes the TV sitcom *Good Times* "look like Strindberg." Yet the play deals with matters—gang violence, crack addiction, and teenage pregnancy—of pressing concern to the Newark audience, as its members' intense engagement with what was happening on stage demonstrated.

The play's comic moments, Gates says, put "all the very worst stereotypes of the race . . . on display, larger than life." The exclusively black audience was able to laugh uninhibitedly, without having to worry that whites might mistake the portrayal for an accurate depiction of black life. "You don't want white people to see this kind of spectacle; you want them to see the noble dramas of August Wilson, where the injuries and injustices perpetrated by the white man are never far from our consciousness," Gates observes.

The people responsible for the Chitlin Circuit shows, he writes, "tend not to vaporize about the 'emancipatory potentialities' of their work, or about 'forging organic links to the community': they'd be out of business if black folks stopped turning up. Instead, they like to talk numbers." Some of the plays have grossed \$20 million or more. (However, these large sums have attracted some criminal "investors," Gates notes.)

The "most successful impresario" of the Chitlin Circuit, Gates says, is a man named Shelly Garrett, who claims that his 1987 play *Beauty Shop* has been seen by more than 20 million people, and that he himself is "America's No. 1 black theatrical producer, director, and playwright." Garrett has never met August Wilson; Wilson has never heard of Garrett. "They are as unacquainted with each