scene, digression, scene, quote from Harvard sociologist"—leading to "a numbing predictability."

Of course, magazine journalism has come a long way since the 1950s. The New Journalism, that gritty, involved, first-person form popularized in the 1960s by Tom Wolfe, Hunter S. Thompson, and Joan Didion, was every English composition teacher's dream: New Journalism showed and did not tell, and varied in form while making a point. But along the way, style dethroned the story, Shapiro claims. As Wolfe wrote in 1973, "The proof of one's technical mastery as a writer becomes paramount and the demonstration of moral points becomes secondary."

A great magazine story can still make people take notice. A recent example: William Langewiesche's 70,000-word serialized report on the recovery of the World Trade Center site in *The Atlantic Monthly*. The biggest threat to the long-form article, Scherer suggests, isn't pea-brained readers, but editors who believe their own condescending blather about what readers want.

Science, Technology & Environment

King Sugar

"Sugar Rush" by Karen Schmidt, in *New Scientist* (Oct. 26, 2002), 151 Wardour St., London, England W1F 8WE.

Move over, DNA, so-called blueprint of life! There's a new player in town, one that's actually been here all along but has been dismissed as unimportant. Now scientists know better: Sugar molecules play a leading role in the intricate drama of life.

"Until recently, biologists thought that living things used [sugar molecules] mainly for storing energy, as a structural material (in the form of cellulose, for example) or perhaps as mere decorations on the surfaces of cells," says Schmidt, a California-based science writer. It turns out, however, "that sugars are involved in almost every aspect of biology, from recognizing pathogens, to blood clotting, to enabling sperm to penetrate an ovum."

One reason sugar molecules remained hidden in plain sight for so long is their daunting complexity. They are built up from simple sugars, such as glucose, which are linked together in massive molecules that can contain more than 200 units. Often they form chains, but they also take the form of "intricately branched structures that decorate the surfaces of cells like a forest of sugary filigree." In addition, atoms can be attached to the basic simple sugars, subtly altering their properties.

"Although genes don't code for sugars themselves, in the way they code for proteins, they do code for the enzymes that our bodies use to build the sugars," explains Schmidt.

Biologists began to open their eyes to sugars' vital role in the late 1980s, when researchers isolated the first gene for an enzyme that adds sugars to fats and proteins, a process called glycosylation. In 1994, a team of researchers led by Jarney Marth at the University of California, San Diego, "found that unborn mice in which one glycosylation enzyme had been disabled developed misshapen hearts and died before birth." Another mutation caused mice to develop an autoimmune illness like the human disease lupus. The discovery that people who lack a key sugar on a protein that transports iron into cells develop liver disorders and other problems led to a hunt for other such sugar defects, notes Hudson Freeze, a researcher at the Burnham Institute in La Jolla, California. Since the mid-1990s, 13 genetic disorders have been identified as "congenital disorders of glycosylation." Even many common diseases, such as rheumatoid arthritis, have been found to have a sugar link.

Scientists now consider sugars so important that they've given them "an 'ome' of their own," says Schmidt. "Just as the 'genome' of a creature refers to its entire set of genes, and its 'proteome' to its set of proteins, the 'glycome' of an organism or cell encompasses all the sugars it makes." "This is one of the great frontiers of biochemistry," says biochemist Gerald Hart of Johns Hopkins University. "We are where DNA was in 1950."