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politics and technology, asserts MIT political scientist Winner.

Even objects not intrinsically political can promote political ends. New York City planner Robert Moses, for example, ordered that 9-foot-high overpasses be constructed across new Long Island parkways in the 1920s and '30s. The low bridges closed the roads to the 12-foot-high buses of the day and put the beaches and parks of Long Island beyond the reach of New York City's poor. The classic case of manipulative engineering is Baron Georges-Eugène Haussman's reconstruction of mid-19th century Paris. At Emperor Louis Napoleon's behest, Haussman eliminated many of the narrow streets that had protected radicals battling police during the revolution of 1848.

Marxist theoretician Friedrich Engels maintained in 1872 that a strong central authority is needed to run modern factories—and, by extension, modern industrial states. Winner suggests that this may be true where nuclear power is concerned. "Soft energy" advocates, on the other hand, contend that solar energy is more compatible with democracy: It can be produced economically in small, independent cells, easily constructed from household materials.

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The Indecisive Monarch

"Carter and the Fall of the Shah: The Inside Story" by Michael A. Ledeen and William H. Lewis, in *The Washington Quarterly* (Spring 1980), Dept. WQ, Transaction Periodicals Consortium, P.O. Box 1262, New Brunswick, N.J. 08903.

"After the Shah left Iran in January 1979, he remained convinced for several weeks that the American government had a grand strategy that was beyond his ken," write *Washington Quarterly* executive editor Ledeen and George Washington University political scientist Lewis. But the authors contend that while U.S. Presidents for years had showered the Shah with advice and aid, the Carter administration never developed a plan to deal with his protracted downfall.

Since the Kennedy era, Washington had viewed the Shah as "the linchpin of Iranian society" (as U.S. Embassy cables occasionally described him). But with an eye toward broadening his political base, aides to Presidents Kennedy and Johnson prodded the Shah to institute land reform, grant greater rights to women, and improve Iran's schools—sometimes designing these programs themselves. U.S. involvement in Iranian affairs deepened under Richard Nixon. From 1970 to 1973, tens of thousands of American civilian and military technicians poured into the country. Strong U.S. political support continued under Gerald Ford and then Jimmy Carter.

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The Shah's own stormy career, meanwhile, produced a split personality. Having returned from exile in 1953, Mohammed Reza Pahlavi came to see himself as a child of destiny. Yet, the Shah was an indecisive autocrat. Described as "neurotic, even pathological" by American diplomats, he leaned heavily on the United States for support and guidance. In late 1978, faced with incipient rebellion and debilitated by anticancer drugs, the Shah waffled between violent repression and conciliation. He turned to Washington for direction.

The Carter administration, say the authors, gave him conflicting signals. National Security Adviser Zbigniew Brzezinski urged the Shah to maintain control at any cost. Cyrus Vance's State Department believed the Shah was doomed and opposed further repression. According to the authors, President Carter never reconciled this conflict.

After U.N. Ambassador Andrew Young referred to revolutionary leader Ayatollah Ruhollah Khomeini as a "saint," and Brzezinski mused publicly that radical Islamic forces in Iran might incite Muslims in the Soviet Union, the Shah concluded (erroneously) that Carter had secretly asked Khomeini to serve as America's new anti-Soviet surrogate in the Persian Gulf. In December 1978, Mohammed Reza Pahlavi made his decision to leave Iran.

Wonder Weapons?

"PGMs: No Panacea" by Daniel Goure and Gordon McCormick, in Survival (Jan.-Feb. 1980), The International Institute for Strategic Studies, 23 Tavistock St., London, WC2E 7NQ, England.

"What can be seen, can be hit and what can be hit, can be destroyed." So say some NATO officials, confident that precision-guided munitions (PGMs) will soon offset the Soviet bloc's growing conventional military superiority in Central Europe. Private defense consultants Goure and McCormick caution against relying too much on these highly accurate, sophisticated, hand-held weapons.

PGMs appeal to many Western defense officials as a cheap way to restore the military balance in Europe. But, the authors contend, PGM proponents have neglected an important change in Soviet military thinking. If the Soviets invade Western Europe, it will not be with a simple tank-led blitzkrieg, of the sort that could be vulnerable to the small, mobile, PGM-equipped squads envisioned by some NATO strategists. Since the 1960s, Soviet doctrine has increasingly stressed a "combined arms" approach. Warsaw Pact tank divisions are now supported by weapons and infantry numerous enough to destroy Western PGM units. The main improvements: self-propelled artillery, rocket launchers, surface-to-surface missiles, and PGMs of their own.

PGMs have technical limitations, too. Operators must be able to track their target continuously from launch to impact. During the 1973 Mideast War, the Israelis frustrated Arab troops armed with Soviet PGMs by spreading smokescreens and electronically jamming the new