which move the containers of atomic materials, and a surrender to
ly trained forces of power of entry, arrest, interrogation, and de-
i if, as they will claim, they are to move fast enough to prevent
of criminals, fanatics, or psychopaths from capturing position from
hey can effectively blackmail a nation or cause irreparable disaster.

im, and contrary to the beliefs of liberal economists such as Milton
an, the return to a more competitive economy cannot of itself
to shore up traditional freedoms against the expanding encroach-
f the modern state. As we move into a world of increasing conflict
reasing hazard, the unforeseen by-products of scientific and tech-
rogress, men can come reluctantly but inevitably to surrender to
ments far greater powers of surveillance, control, and repression
e compatible with contemporary notions of personal liberty.

S

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THE CARNOTIAN REVOLUTION

Mechanics was the first science to reach a level of analytical dev
ment as perfect as that to which Euclid had brought the old art of
measurement—the *geometria*. But still more significant is that mech
reached the same level of accuracy in prediction. By the turn o
eighteenth century, scientists and scholars no longer entertained
doubt about the notion that mechanics is *the* science, that the wo
ruled by it. Laplace was thus able to claim in his famous apotheos
mechanics (1814) that every happening in the universe, past or futu
determined by a system of mechanical equations. He conceded that
a demiurgic mind, a mathematical demon, could obtain all the nece
data of the parameters and solve the vast system.[1] One can hardly i
ine the elation felt by all scientific circles when, in 1846, Urbain Leve
discovered the planet Neptune, not by scanning the firmament w
powerful telescope, but at the tip of his pencil after a series of calculat
based on the equations of mechanics. Laplace's position seemed
dicated beyond any right of appeal.

Yet, during the same period, something happened that was to co
tute soon the first blow inflicted to the mechanistic dogma and to c
the first important revolution in physics. While Laplace and almost al
peers were interested only in celestial affairs—then a long tradition
the students of the physical world—a few people devoted their atten
to some pedestrian problems, nearer to man's everyday life. By the
of the eighteenth century, with the improvements brought by James W
the old steam engine was already operational. In 1807 Albany bec
connected with New York by a steamboat. Most important of all eve
in 1824 Sadi Carnot, a young officer in the French Engineer Co