

an underground paramilitary organization that specialized in assassinations and espionage.

From these roots, Dreyfuss traces the Cold War era British exploitation of the MB, against Egyptian nationalist Nasser, Iranian nationalist Mossadegh, and other movements in the Arab world, seeking to create modern, sovereign nation-states.

Fast-forward to the 1970's, and the British formulation of the "Arc of Crisis" strategy, of pitting "rightwing political Islam"—in the form of the Khomeini Islamic Republic in Iran and the

Mujahideen in Afghanistan—against the Soviet Union's "soft Muslim underbelly," and you have the recipe for the disaster now unfolding. By the time that Zbigniew Brzezinski came in as President Jimmy Carter's National Security Advisor in 1977, British Arab Bureau figure Dr. Bernard Lewis had become a fixture in Washington (based at Princeton University), and the United States had been hooked on the British "Game."

Despite the fact that 9/11 altered the rules, and the MB-spawned radical Islamist groups, from al-Qaeda to Hamas and Hezbollah, became the most

embittered "enemies" of Washington in the Bush Administration's so-called "Global War on Terrorism," the shift was, in reality, cosmetic.

Until and unless American policy-makers wake up to the fact that Washington has been played for a fool by British masters of imperial divide-and-conquer politics, American standing in the world will never recover. Dreyfuss provides a vital road map of how American policy went disastrously wrong, and that is the starting point for any successful correction.

—Jeffrey Steinberg

Gödel, Einstein, LaRouche

Rebecca Goldstein's remarkable book on the life and work of Kurt Gödel is a very useful contribution to a very old debate, and is even a call to arms, in some respects, for the world to re-engage in that debate. Drawing on her experiences as a graduate student in the philosophy of science and mathematics at Princeton University in the 1970's, while Gödel was still at Princeton's Institute for Advanced Studies, and on her extensive personal contact with several of Gödel's associates, the book presents Gödel, together with his closest friend, Albert Einstein, engaged in a life-long battle against the increasingly predominant ideology in American and European academia and scientific community: that of empiricism, positivism, and related reductionist notions.

Gödel and Einstein defended and advanced the Platonic scientific tradition, insisting on a commitment to the search for truth and universal principles, rejecting the degenerate existential notions of randomness peddled by the positivists. This battle engaged the creative passions of both Einstein and Gödel, but it is a battle which has been nearly lost today. Lyndon LaRouche and those associated with him long ago joined that fight, placing it at the forefront of the political campaign to pull the nation and the world away from its current path toward economic collapse and global war.

While Einstein's concept of relativity

is well known (although often, even usually, misunderstood—see article by Bruce Director in this issue, page 98), Gödel's work is less widely known. The famous Incompleteness Theorem, often called Gödel's Theorem, released in 1931, intersected an intellectual climate in Europe increasingly dominated by the logical positivism of Ludwig Wittgenstein, Karl Popper, and the so-called Vienna Circle (in which Gödel himself had participated, while rejecting its conclusions, in the 1930's), and by Wittgenstein's leading supporter, Bertrand Russell.

Russell and his collaborator Alfred North Whitehead were engaged in an effort to reduce all mathematical knowledge to a precise set of axioms, which they published as the *Principia Mathematica*. Russell and his positivist circle rejected as essentially meaningless any concept which could not be demonstrated to be true by purely mechanical means, based on nothing but sense perception—the "shadows on the wall" of Plato's famous cave—and logical deductions derived from them. In other words, they rejected reason altogether, or simply defined reason to be nothing more than a logical/mechanical process which could just as easily be performed by a computer as by a human mind.

Gödel's discovery of 1931 proved by mathematical means that the entire enterprise undertaken by the logical positivists in Vienna, and by Russell and



Incompleteness: The Proof and Paradox of Kurt Gödel

by Rebecca Goldstein
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Whitehead in London, was an exercise in futility. Gödel developed an ingenious method to demonstrate that any formal system of axioms and rules of proof which is strong enough to include basic arithmetic, has at least one (and in fact, an infinite number) of theorems which can be shown to be legitimate theorems, but can neither be proven nor disproven—and yet it is clear to the human mind observing the system that the theorem is in fact true. Any such formal system, therefore, if it is not inconsistent and altogether useless, is incomplete—incapable of proving the truths of the system.

Thus, Russell's efforts to show that all mathematics can be reduced to a formal, axiomatic system were demolished.

Had Russell, Wittgenstein, and their positivist friends simply retired at that point to nurse their ideological wounds, the world might have been spared many of the horrors which unfolded through the rest of the Twentieth century. Unfortunately, the battle against the positivists had just begun.

Goldstein's Polemic

Goldstein, in her personal way, has set out to renew the battle against positivism. Her two-fold intention is clearly stated: to defend Gödel and Einstein against the popular dogma of today's degenerate intellectual climate, in which Einstein's Relativity Theory and Gödel's Incompleteness Theorem are regularly dragged into the service of precisely the positivist, mechanistic worldview that both dedicated their lives and their works to refute absolutely. Goldstein succeeds in this task most admirably, and in a manner both clear and compelling for any reader. Her second task, to present the character and the implications of Gödel's Incompleteness Theorem, is a more formidable challenge, which she

achieves to some degree, while missing the more profound point (addressed by Bruce Director in this issue of *Fidelio*), that both physical science and epistemology demand a dynamic, rather than an axiomatic, representation.

Goldstein forcefully counters the common positivist slander of Gödel, that his work confirmed their hysterical insistence that the infinite can have no real meaning in cognitive discourse. She writes: "Gödel's result, in effect, proclaims the robustness of the mathematical notion of infinity; it can't be drained of its vitality and turned into a ghostly Kantian-type idea hovering somewhere over, but without entering into, mathematics. The mathematician's intuitions of infinity—in particular, the infinite structure that is the natural numbers—can no more be reduced to finitary formal systems than they can be expunged from mathematics."

Goldstein illuminates the extremely close relationship between Gödel and Einstein during their years at Princeton, from Gödel's arrival in 1940 until Einstein's death in 1955. Einstein once told an

associate that he continued going to his office at the Institute for Advanced Studies every day merely for "the privilege to walk home with Gödel." They viewed each other as the only "other" who shared the same mission, the quest for universal principles, such that they could work together on joint cognitive experiments.

When Einstein died, Goldstein reports, Gödel's last true friend in the world was Gottfried Leibniz (1646-1716). He told Karl Menger, his friend from the Vienna Circle days, that many of Leibniz's manuscripts were never published, and some destroyed, by "those people who do not want man to become more intelligent." Menger, exposing his positivist bent, suggested that a "free thinker" like Voltaire was a more likely target of such censorship, but Gödel retorted: "Who ever became more intelligent by reading Voltaire's writings?"

Goldstein's book is now being translated into 11 languages, demonstrating that there are forces afoot that are anxious to reinvigorate the battle against empiricism.

—Mike Billington

On the Cover: Samuel F.B. Morse's *The Gallery of the Louvre*

In Samuel F.B. Morse's highly polemical *The Gallery of the Louvre*, painted in 1831-33 while the artist-inventor joined James Fenimore Cooper and, most likely, Edgar Allan Poe, in aiding the Marquis de Lafayette's republican efforts in Paris, Morse presents himself as an American artist out to restore the primacy of the Classical tradition in European art. For, the paintings Morse shows covering the walls of the Louvre gallery were not, in fact, displayed there in this way; instead, Morse had to scour the Louvre collections to find and assemble works by artists he deemed to represent the Renaissance tradition, because these had been scattered when the gallery was filled with 18th- and 19th-century Romantic canvases that appealed to the taste of the European aristocracy. You can see among the artists chosen by Morse, works by

Leonardo, Raphael, and Rembrandt, as well as lesser lights.

Morse continued his polemic by presenting the activity of artistic study and education in the gallery, something which was a radical departure from the standard typology of this sort of painting, according to art historian Paul J. Staiti. What had for centuries been a stereotype of aristocratic genre painting, became in Morse's hand an image of republican education. Instead of showing connoisseurs or oligarchs examining artworks as precious objects, Morse depicted students analyzing and extracting ideas from the intellectual patrimony of Europe. Everyone in the painting is a student copying, discussing, or studying art intensively. In fact, in the corner, Susan Cooper, James Fenimore Cooper's eldest daughter, who studied art with Morse in Paris, sits

before an easel and looks over her shoulder toward her father, who appears to be lecturing.

Morse appears in the foreground of the painting, on the central axis of the picture and silhouetted against the recess of the gallery, pointing to a passage in the student's picture. As Staiti writes, "The display of students of art engaged in learning, discourse, and discipline, gives *The Gallery of the Louvre* an American inflection, as does Morse himself, his bald and unconventional declaration of his own pedagogy turning the Louvre into the ideal American classroom"—something which Morse had envisioned in establishing the National Academy of the Arts of Design in New York City in 1826.

—KK,

adapted from Paul J. Staiti, "Samuel F.B. Morse" (Cambridge: 1989)