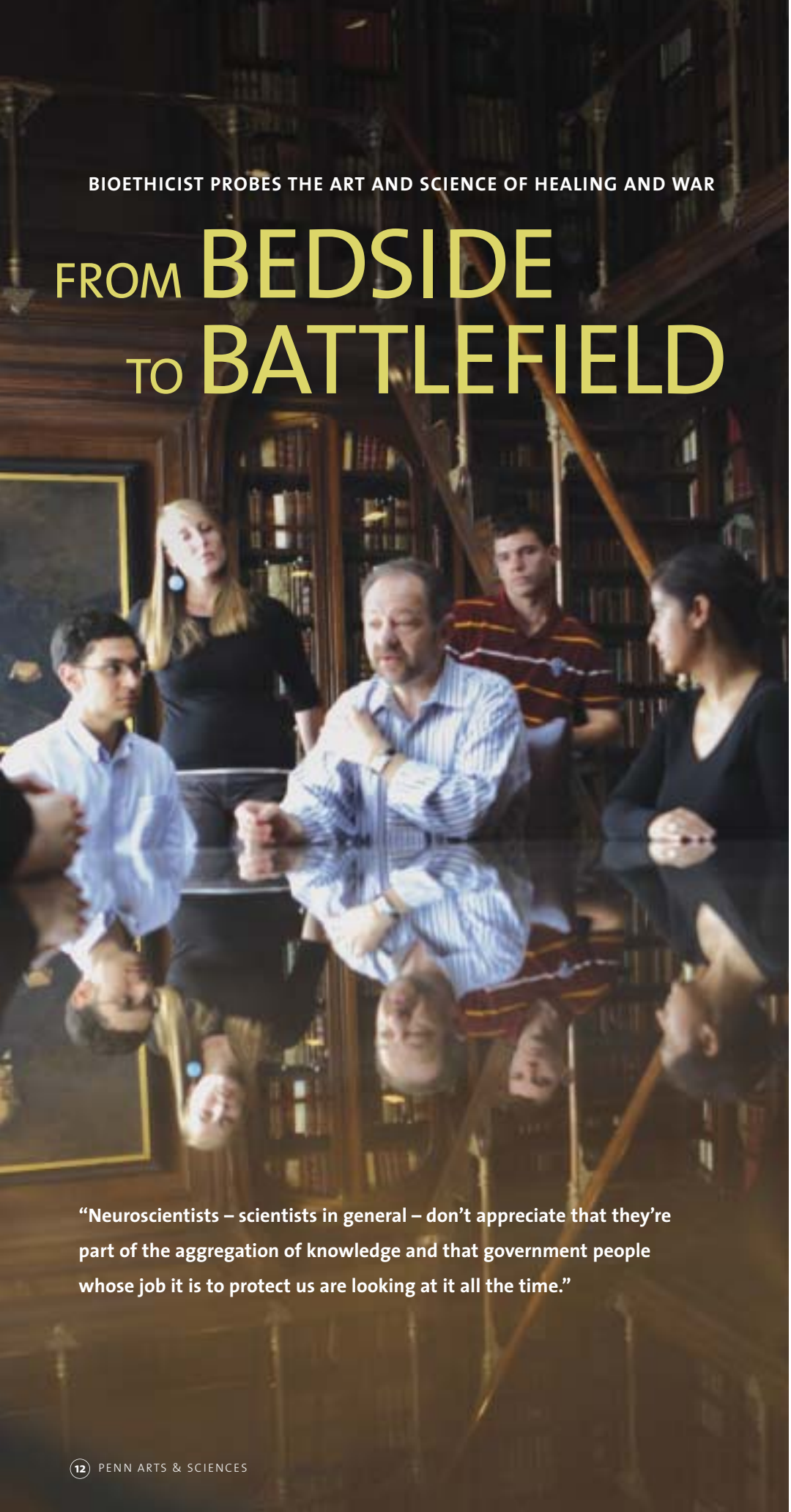
BIOETHICIST PROBES THE ART AND SCIENCE OF HEALING AND WAR

FROM BEDSIDE TO BATTLEFIELD



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STORY BY PETER NICHOLS
PHOTO BY PETER OLSON

Jonathan Moreno is many things: a philosopher, a teacher, an ethicist, an historian, a television-news bioethics authority, an advisor to presidents and legislators. The David and Lyn Silfen University Professor, Moreno holds joint appointments in the School of Arts and Sciences (history and sociology of science) and the School of Medicine (medical ethics). He knows something about law, politics, medicine, economics, sociology and history, and as one of the University's five Penn Integrates Knowledge professors, he epitomizes the connections across disciplines, professions and realms of engagement that the PIK chairs stand for.

Before coming to Penn, Moreno "did ethics" in clinical settings for more than a decade, advising medical practitioners and families at Children's Hospital in Washington, SUNY Health Science Center at Brooklyn and the University of Virginia. To some, his expertise as a "hospital philosopher" helped illuminate a way through the thicket of agonizing decisions and conundrums posed by modern medicine and scientific progress. To others, his tendency to alight momentarily on some answer only to move on to yet another question — clarifying the answer or going deeper — makes him as welcome as a pesky mosquito.

"Socrates referred to himself as a gadfly because in the marketplace he was an annoyance," Moreno observes. The ancient Greek philosopher had a way of buzzing around the well-dressed, well-spoken authorities of Athens with bothersome questions about popular opinions and unexamined assumptions. "The public philosophers were always to be gadflies," Moreno explains.

"There's a certain amount of speaking truth to power that's supposed to take place when you're doing it right. You're supposed to challenge and be an annoyance."

Moreno was trained as a philosopher — his Ph.D. dissertation explored the tradition of American pragmatism. His first close encounter with bioethics happened in the late 1970s, when he was a brand-new assistant professor. "A call went out for a faculty member who would participate in a new, experimental course in bioethics," he recalls. "Being an untenured, junior professor, you say *yes*." Teamed with a young physician who tutored him in medical issues, Moreno stayed one step ahead of his students in the ethics readings. The character of bioethics as an applied philosophical endeavor was congenial to his pragmatic leanings and the thinking of intellectual heroes like John Dewey, William James and Charles Peirce. "I got intellectually hooked," he says. "But I also wanted to have a bigger reach than academia, and bioethics was a way of being out there and putting your ideas to work — testing them in the crucible of experience."

As a bioethicist at the bedside or in the conference room, Moreno has seen the hard choices that sometimes must be made with uncertain data that belie the finality of the decision. It makes for a workday that can be as troubling as it is challenging. "No one is trained for this," he once murmured to himself on a hospital ward after watching a mother hold her infant for what was likely the last time.

What philosophers *are* trained for — and this equips them to be bioethicists — is the free play of ideas and the formulation and assessment of arguments. As outsiders in the medical field, they can also pose naive questions that can startle practitioners and policymakers into reconsidering assumptions. "If you're the bioethicist in a clinical case," Moreno comments, "and you don't say something that causes somebody to be taken aback, you're not doing your job."

Once he embarked on the journey of public philosopher, the horizon of issues opened out beyond the hospital walls. He probed ethical dimensions of genetic testing, human and embryonic stem-cell research, the conduct of clinical trials, conflicts of interest in medicine, informed consent of people with mental disorders and more. Congress invited him to testify on ethical matters, and he has served as senior staff member on two presidential commissions. His work for President Clinton's Advisory Committee on Human Radiation Experiments, which examined the secret history of experiments on soldiers and citizens during the Cold War, led to his discovery that the military had been asking ethical questions about research on humans long before academia took them up. His study of government research for the purpose of building better soldiers and improving battlefield performance was published in *Undue Risk: Secret State Experiments on Humans*.

The CIA and the Pentagon, he learned, had turned an eye toward Timothy Leary's LSD experiments in the '60s as well as other laboratory work that scientists were starting to conduct on the human brain. Recent leaps in brain imaging, neuropharmacology and high-tech neuroscience have caught the attention of national defense agencies just as advances in atomic physics did in the 20th century. "Neuroscientists — scientists in general — don't appreciate that they're part of the aggregation of knowledge and that government people whose job it is to protect us are looking at it all the time," Moreno says. In fact, defense and security agencies provide considerable funding for science, and he has heard story after story from neuroscientists recounting the unexpected calls they receive from the defense establishment. In his book *Mind Wars: Brain Research and National Defense*, he writes, "Many of the scientists didn't know much about the larger context [of their funding], didn't seem to have given it much thought, or figured it was an opportunity to fund their research that wouldn't lead to anything questionable." In his overview of the investment national security agencies are making in brain science, Moreno pokes some questions at the mix of science, ethics and national defense.

Historically, he says, development of military technologies has yielded benefits for civil society in addition to increased national security. When evaluating the "dual use" of breakthroughs in understanding and manipulating the brain, scales that weigh the good and the bad often give opposite readings in different contexts. Cutting-edge brain-scanning technology, for instance, could one day help commanders remotely monitor and manage information overload in combat pilots, making them more effective. Brain-imaging devices might also make for highly reliable neuro-lie detectors, which could not only be effective for interrogating terrorists but far more merciful than waterboarding. Even in health care, these technologies would permit hospital nurses to keep track of

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brain-damaged patients at home. But some businesses are already looking at intrusive mind-reading technology to improve market research and sales. The innovation makes good business sense, but, queries Moreno, do we want to give marketers access to our deepest desires and hidden thoughts?

In recent studies, scientists found that victims of trauma who were given the beta blocker propranolol, which inhibits the release of brain chemicals that consolidate long-term memories with emotion, suffered a lesser degree of post-traumatic stress disorder. Some speculate the drug could prevent or lessen the psychic scars of war on soldiers, if administered before going into battle. Preserving young men from lifelong depression, insomnia and painful flashbacks seems like a good thing, "but do we really want guilt-free soldiers?" Moreno asks. "Soldiers who could pop an anti-guilt pill might not accrue experiences that lead them to hesitate when faced with an enemy they have been trained to annihilate." And what about brain-machine interfaces that would allow combat technicians to wield robotic weapons far from harm's way? "A robot army could certainly save many lives," Moreno admits, "but it could also make a great power more willing to use it."

The arsenal of coming neuro-weapons and other mind-blowing fruits of neuroscience are in themselves neither good nor evil, Moreno argues, but they do require close scrutiny, open discussion of implications for civil liberties and far-sighted regulation and policy-making — much like the way organ transplantation spawned bioethical oversight in medicine.

The life-and-death cases that medical ethicists weigh pose stark challenges to values our society upholds. "Though these tests cannot be avoided," he counsels, "neither should we ever be confident that we have settled them once and for all."

Moreno has written 17 books and hundreds of papers and reviews that probe and argue and question and claim. The main thing, he proposes, is that we keep the questions coming and the dialogue going.

Mind Wars has stirred a fair amount of censure from readers who think Moreno is too critical of national security agencies and others who think he is too accepting of government's militarization of neuroscience. "I think it's fine," he says, "I mean, for the role that I want to play of opening up the conversation." It reminds him of the old days of being a hospital philosopher, the outsider who knew enough about medicine to raise the questions no one else thought to ask. "It's knowing enough about the brain, knowing enough about the way the research establishment works, knowing enough about politics, knowing enough about the security establishment to raise pretty specific questions. It's back to being the gadfly, right?" ■

SCIENCE PROGRESS

BY JONATHAN MORENO

Francis Bacon is often credited as the first to express the modern idea of progress in terms of advancing science and technology. This vision was to have a profound effect on later 17th century thinkers, including those who provided the intellectual justification for the American Revolution.

The ideas of science and progress are deeply held in America's self-identity, pervasive in our notions of who we are, what we do and why we do it. The optimistic "can-do" spirit; the approval of bigness, boldness and adventure; the lure of the frontier and "the road," are all associated with this sensibility. At our best, we hold these truths to be, if not self-evident, at least within our grasp.

Science progress, the growth of knowledge, is in effect an expansion of consciousness. Science may not be the only path to a greater grasp of reality, but it makes a unique contribution to enhanced understanding of the cosmos and our place within it. To distort the process of inquiry amounts to a narrowing of vision, a corruption of imagination and a threat to our freedom as beings endowed with intellect.

In recent years, the respect for evidence and the spirit of open inquiry has been threatened for the sake of short-term political advantage. But the larger issue is the long-term national interest, which depends on the best evidence that only science can provide for commercial innovation, economic growth, military defense and the best possible array of intelligence options.

In the 21st century, it is no exaggeration to assert that only free and rigorous inquiry and not authoritarian dogma can provide the reliable information required for our physical survival. Perhaps most importantly, progress in science is essential for a continued sense of our national purpose as participants in an historic experiment in freedom and self-governance, as one people joined by a common future rather than a common past, a future we cherish for the sake of the generations of Americans to come.

Adapted from an editorial for the online magazine Science Progress, *www.scienceprogress.org. Moreno is editor in chief.*