

## Reaching for Utopia and Slouching toward Gomorrah

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It is a unique privilege to address the 50th annual meeting of the CNS during this first year of a new century and a new millennium. I owe recognition and thanks to many people for their overwhelming support. I thank my parents, Dr. and Mrs. Warren Barrow, and my grandmother, Mrs. Emma Pessina, for providing me with a nurturing environment, an education, and encouragement to pursue my career and life goals. I owe a great debt to my many mentors, particularly Drs. George T. Tindall, John A. Jane, Thoralf M. Sundt, Jr., David G. Piepgras, and Robert F. Spetzler, all of whom have offered me sound advice and numerous opportunities during my career. I thank all the members of the dozen executive committees with whom I have had the privilege to work and CNS Past Presidents J. Michael McWhorter, Michael Salzman, and William F. Chandler for entrusting me with the most important jobs in the CNS. I thank my partners in the Department of Neurosurgery at Emory University School of Medicine for their collegial support and tolerance during this past year. Most important, I express my heartfelt thanks, admiration, and love for my wife and best friend, Mollie, and our three children, Emily, Jack, and Tom. Their patience and support have been uncompromising and greatly appreciated.

A golden anniversary, the end of a century, or the beginning of a new millennium are tricks of the calendar, arbitrary calls to reflect on past accomplishments and failures and to predict the course of the future. Fifty years is a short interval in the context of recorded history. Consider that there have been only 85 generations since the time of Jesus, only 18 since Gutenberg invented the printing press, a mere 7 since the American Revolution, and fewer than 3 from Kitty Hawk to the first space walk. Centuries of change now occur in the span of one lifetime. The past 50 years have witnessed some of the most astounding advances in science of any historical period of similar length. Neurosurgery has benefited immensely from this scientific renaissance and has been transformed from a fledgling subspecialty of general surgery into a complex and rewarding discipline that neurosurgeons of 1951 would have difficulty recognizing.

One of the primary endeavors of humankind has been the pursuit of Utopia, an impossible ideal (2). Plato was the first to systematically analyze the concept of Utopia in *The Republic* (30) and greatly influenced Sir Thomas More, who published *Utopia* (22) and coined the term in 1516. *Utopia* introduced the notion of science as liberator and universal benefactor, a view

championed again in 1627 by Francis Bacon in *New Atlantis* (3). In envisioning landmark scientific advances, Bacon postulated that through skillful research and subsequent discoveries, society would have the means to harness nature to achieve both panacea and ultimate liberation.

The staggering scientific progress achieved during the past half-century has supported the idea that everything can be accomplished in the current era, particularly if the proper technology is applied. Indeed, medical research and discoveries during the past 50 years have made the age-old dream of a disease-free world no longer seem foolish and unattainable (34). Within the next 50 years, aging itself may prove to be simply another disease to be treated. Some experts theorize that the human lifespan should not encounter any natural limits before 120 years, and with continuing advances in molecular biology and further understanding of the aging process, that limit could lengthen to 130 years or more (37). The population of centenarians has exploded, with the result that survival to the age of 100 is no longer the newsworthy feat it was when my great-grandmother turned 100 (*Fig. 1*). There were approximately 40,000 centenarians in the United States when she died in 1997 at age 110.

Unfortunately, the marvelous accomplishments in science during the past half-century that have provided a surge toward a medical Utopia are in contrast to the simultaneous decline in America's national character and a crisis of cultural values. The past 50 years in the United States have been characterized by the collapse of popular culture, the weakening of the intellect, the growth of an intrusive government guided by irrational incentives, and the transformation of the federal courts into cultural institutions that promote a politically correct agenda. Robert H. Bork described America's culture in decline in his book *Slouching towards Gomorrah* (7), with its title referring to the biblical city burned to the ground for the sinfulness of its people. He attributes America's cultural decline to the "rise of modern liberalism, which stresses the dual forces of radical egalitarianism (the equality of outcome rather than the equality of opportunity) and radical individualism (the drastic reduction of limits to personal gratification)" (7).

Let us explore the changes that have occurred in American society during the past half-century and compare and contrast those changes with the transfiguration of medicine during the same period. In doing so, I submit that while American sci-



**FIGURE 1. Photograph of Elvira ("Mama Vera") Arnado, my great-grandmother, who lived to be 110 years old.**

ence and medicine have been reaching for Utopia, America's cultural values and national character have been slouching toward Gomorrah. Much in the United States and in the world was different 50 years ago. In 1951, the population of the United States was 155 million, an increase of more than 3 million from 1950. This peak year in population growth after World War II gave rise to the term *baby boom* (38). The presidency of Harry S Truman was nearing its conclusion, with Dwight D. Eisenhower soon to win the presidency, in 1952. American politics were characterized by the Cold War and the containment of Communism. In June 1950, North Korean troops invaded South Korea, marking the beginning of a 3-year war that left nearly 37,000 U.S. military personnel dead and thousands more captured or missing in the effort to stand against Communist expansion. In 1951, the U.S. government's cash flow consisted of \$48 billion in receipts and \$44 billion in expenditures (13). Americans' average per capita income was \$1436. Prime-time television shows in 1951 included *Your Show of Shows*, starring Sid Caesar and Imogene Coca, and *You Bet Your Life*, starring Groucho Marx. The *Roy Rogers Show* debuted in 1951. Major films released in the year of the first meeting of the CNS included *An American in Paris* with Gene Kelly, *A Streetcar Named Desire* with Marlon Brando and Vivien Leigh, and Walt Disney's *Alice in Wonderland*. Popular books in 1951 included *The Caine Mutiny* by Herman Wouk (43), *From Here to Eternity* by James Jones (18), and *The Sea Around Us* by Rachel Carson (10). Joe DiMaggio retired from baseball in 1951, and Ben Hogan won the Masters golf tour-

namment. In 1951, comic strip kid Dennis the Menace first began annoying Mr. Wilson. On the popular music scene, Pete Seeger released "On Top of Old Smokey," and Cleveland disc jockey Alan Freed coined the term *rock and roll*.

In the area of science and technology, 1951 saw the explosion of the first hydrogen bomb, the introduction of power steering by Chrysler, and the discovery of cyanoacrylate, which today is sold as "superglue." The world's first electronic digital computer for commercial use was unveiled in 1951. The Universal Automatic Computer, or UNIVAC, weighed 8 tons, consumed 100 kW of power, and performed approximately 1000 calculations/s.

In 1951, health care costs were relatively low because doctors could do little for a large percentage of patients. A physical examination, simple blood tests, and x-rays of the chest, bowel, and bone could identify a few treatable disorders; however, many afflictions that are readily controlled by medicine today led to incapacitation and early death in those days:

Patients with severe congestive heart failure spent their days in padded chairs designed to keep the edema from settling in their lungs. Patients with medically refractory angina pectoris were effectively disabled. Those with malignant hypertension suffered severe headaches, loss of vision and anticipated kidney failure and stroke in their futures. (34)

Much was different in neurosurgery in 1951. The specialty was guided by indirect and often inaccurate imaging studies, lack of magnification and good illumination in the operating room, marginal neuroanesthetic techniques, and a more primitive understanding of neuropathology. Neurosurgical procedures were fraught with excessive morbidity and poor outcomes, thus attracting a special breed of practitioners.

In 1951, approximately 400 neurosurgeons were practicing in the United States, or approximately 1 for every 387,000 people (13). The majority of neurosurgeons were clustered in major metropolitan areas, mostly in close proximity to a medical school. A physician's average annual income in 1949 was \$11,053, with neurosurgeons being the highest-paid specialists at \$28,628. In California in the early 1950s, the annual premium for \$10,000 of malpractice insurance coverage was \$50 (13).

In 1951, the evaluation of a patient suspected to have an intracranial mass included a medical history; physical, neurological, and funduscopic examinations; and radiography of the cranium, chest, and perimetry. Pneumoencephalography and ventriculography were the principal imaging techniques used to confirm or to rule out mass lesions, although angiography was being introduced in large medical centers. All contrast imaging was performed by neurosurgeons, and obtaining and analyzing imaging studies accounted for approximately 50% of the neurosurgeon's work and income (42). Other common procedures in 1951 included sympathectomy for hypertension, discectomy, exploratory craniotomy, and tracheostomy, with common endotracheal intubation still 5 years away.

For decades, neurosurgeons had depended on local anesthesia with the airway kept clear for spontaneous breathing. Head fixation devices were not in general use in 1951; instead,



combinations of straps and adhesive tape were used to stabilize the patient's head. Neurosurgeons scrubbed their hands with bar soap timed by a 10-minute hourglass. The forearms were then immersed in cylinders of alcohol, followed by immersion in bichloride of mercury, which turned the fingernails brown. The hands were then dusted with a packet of talc and were gloved.

Osteoplastic craniotomies were performed with hand-operated instruments such as burrs, the Gigli saw and guide, and the Stille double-action rongeur. Adequate illumination in a deep exposure was as much a problem in 1951 as it had been in 1907, when Herman Schloffer (33) described how he moved an operating table next to a window so that his mirror could direct reflected light into the cavity leading to the patient's sella.

Hemostasis was obtained with cotton pledgets, bits of crushed temporal muscle, gelatin foam, and bone wax. Bipolar coagulation was not available in 1951, although James Greenwood had been experimenting with the technique since 1940.

The management of intracranial hypertension was primitive by today's standards. Medical management with hyperventilation, urea, and mannitol emerged in the decade after 1951, and the reality was stark. A patient received care in a ward close to the nurse's station, because there were no intensive care units. The hyperosmolar agent in use was 50% dextrose, and ventricular tapping was the principal measure for reducing intracranial pressure. The surgical management of uncus herniation, introduced in the 1930s and still in use in 1951, consisted of resection of the uncus and division of the tentorium.

My mentor and teacher, George T. Tindall, used to tell "war stories" of neurosurgery in the 1950s at Duke University, where he trained under the tutelage of Guy Odom and Barnes Woodhall and took his first academic position. He told of patients becoming so ill from pneumoencephalography that they would routinely be whisked from the pneumoencephalography chair directly to surgery. If patients had time to reconsider their limited options after pneumoencephalography, many would simply refuse further treatment. Tindall told stories of "woodpecker surgery," which involved the bilateral placement of multiple burr holes to search for treatable, extra-axial hematomas in trauma patients. As a resident, I remember asking Dr. Tindall, "Whatever possessed you and your colleagues to enter a field with such poor outcomes and so little to offer?" He responded, "We all knew it had to get better." And better it got!

The major thrust toward a medical Utopia can be traced to the same period in which the CNS was established. After the Allies emerged victorious from World War II, scientists and government leaders in the United States thought that, with aggressive government support, the success of research efforts such as the Manhattan Project could be emulated in the area of medical research (34). As a result, the National Institutes of Health began its reinvention from a small agency with a budget of \$26 million in 1948. By 1950, Congress had provided the National Institutes of Health with an impressive new building in Bethesda, MD, along with expanded re-

sources that transformed it into the Goliath it is today (Fig. 2), with an estimated budget of nearly \$18 billion (7).

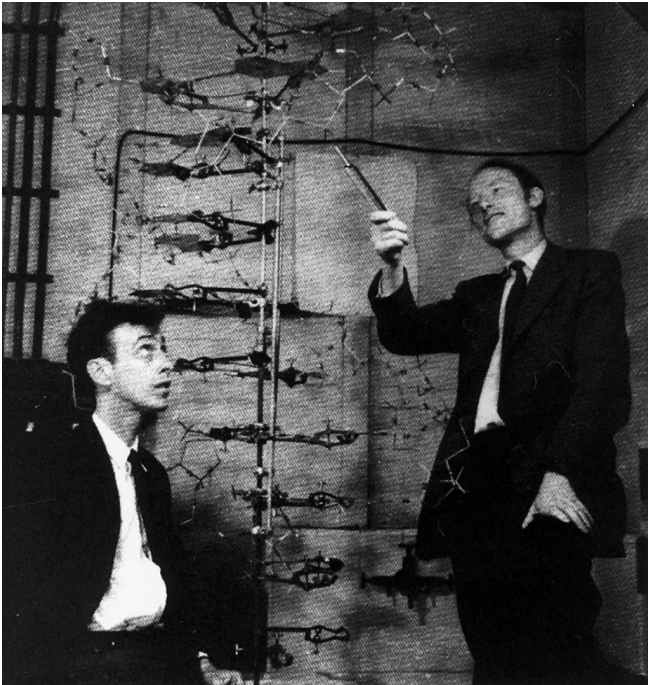
These leaders could not have anticipated the magnitude of the success of the technological revolution that they were about to unleash. Consider that 1951 was 2 years before Watson and Crick (40) published their seminal report on the molecular structure of deoxyribonucleic acid (Fig. 3). Their article, published in *Nature*, contained only 128 lines but affected science and medicine as profoundly as Darwin's *On the Origin of Species* (11) or Einstein's Special Theory of Relativity (32). Less than 50 years later, the progress that has been made in the field of molecular biology is bewildering. Earlier this year, two independent groups simultaneously announced the completion of the mapping of the entire human genome—nature's instructions for making and maintaining human beings.

Some important foundations for the current state of neurosurgery had their genesis in this same era in which the CNS was established. Carrea et al. (9) performed the first carotid reconstruction in Buenos Aires on October 20, 1951. In 1951, Leksell (19) first invented and described the technique for radiosurgery of the brain, and that was also the year in which Hassler and Riechert (16) successfully treated Parkinson's disease with stereotactic lesions in the ventrolateral thalamus. Matson (21) introduced ventriculoureterostomy in 1951, and Nulsen and Spitz (29) described valve-regulated ventriculovenous shunting in the same year. The year also saw the first therapeutic use of hypophysectomy for breast and prostate cancer (31). In 1951, Sweet (36) proposed the use of neutron-capturing isotopes such as  $^{10}\text{B}$  in the treatment of brain neoplasms. Sunderland (35) described his five-grade classification system of peripheral nerve injury, and Mulder (25) discussed the causative mechanism of Morton's metatarsalgia in the year of the inaugural CNS meeting. In 1951, Guillaume and Janny (15) first described continuous monitoring of intracranial pressure, and Goldensohn (14) used the strain gauge experimentally to establish that hypercarbia in-



**FIGURE 2.** Aerial photograph of the National Institutes of Health complex in Bethesda, MD.

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**FIGURE 3.** Photograph of James D. Watson and Francis H.C. Crick with a model of the molecular structure of deoxyribonucleic acid (from, Watson JD: *The Double Helix: A Personal Account of the Discovery of the Structure of DNA*. New York, Atheneum, 1968 [39]).

creases intracranial pressure. These advances were the keys to an explosion of laboratory and clinical work during the next decades that changed the field of neurosurgery forever.

Neurosurgeons who depended on pneumoencephalography to peer into the human brain would be astonished by the elegance and accuracy of magnetic resonance imaging (MRI) in detailing the elusive anatomy of the central nervous system. Neurosurgeons of the early 1950s would be shocked by today's routine microsurgical treatment of arteriovenous malformations and aneurysms with little morbidity. The obliteration of deep-seated arteriovenous malformations by radiosurgical devices and the elimination of inoperable aneurysms by electrolytic coils under fluoroscopic guidance would seem unreal. The use of an operating microscope with frameless stereotactic MRI guidance would seem like science fiction.

A half-century of unprecedented scientific discovery has not resulted in a social or cultural panacea, however. I think that it is essential to survey and critique the health of our culture periodically and to speak out in opposition to trends that may jeopardize future generations. According to an essay in *The Economist*,

This century's battles have, above all, involved ideas, particularly about liberty and equality. Those ideas remain at the center of our debates and anxieties: about globalization, about the balance between governments and markets, the environment, the status of women, the rights of minorities, the fate of the poor, the virtues and vices of capitalism. Liberty and equality are such simple

and seemingly virtuous words that it is hard to believe they have caused so much trouble. (1)

They have done so for many reasons. One reason is simply the abuse of language. Consider the Democratic People's Republic of Korea (i.e., North Korea) or the People's Republic of China, both founded a half-century ago, supposedly in the name of freedom and equality. There has also been a long dispute with regard to what liberty actually means, and the argument has been made that liberty and equality do not sit happily side by side.

Indeed, in many respects they are in conflict. The conflict arises whenever equality is taken to mean equality of outcomes. For to achieve that, it is necessary to take, by force, from some people to give to others. This is also true of the more realistic meaning of equality, namely equality of opportunity. But the sacrifice of liberty required to invest in mass public education or to forbid discrimination in jobs or elsewhere on irrelevant grounds such as race or sex, is one that people, in general, have been willing to make voluntarily. During the past fifty years they have done so with spectacular results. The dispute has been over whether true freedom requires guidance or other intervention from another authority. (1)

The rise of contemporary liberalism during the past 50 years has led to a redefinition of liberty and equality, resulting in a crisis in America's cultural values, the weakening of its collective intellect, and a decline in its national character. Liberty and equality, promoted by traditional liberalism, is what America is all about. Thomas Jefferson, in drafting the Declaration of Independence, stated, "We hold these truths to be self-evident, that all men are created equal, that they are endowed with certain unalienable Rights, that among these are Life, Liberty, and the Pursuit of Happiness." What distinguishes traditional liberalism from contemporary liberalism is not a difference in the central role of liberty and equality, but a difference in the influence of the other forces that modify or constrain radical forms of equality and liberty—the forces of law, religion, family, community, and morality. Robert Bork wrote,

American conservatism is simply liberalism that accepts the constraints that must necessarily be placed upon the main thrusts of liberalism—liberty and equality. Thomas Jefferson and the signers of the Declaration of Independence understood this. Once they won their independence and got down to the business of running a nation, the Founders were not so lyrical. "Unalienable rights" of the Declaration frequently became alienable. For example, the Fifth Amendment of the Constitution explicitly assumes that a criminal may be punished by depriving him of life or liberty, which has a tendency to interfere with one's pursuit of happiness. (7)

During the past 50 years, the constraints that moderate the drive toward radical egalitarianism and radical liberty are evaporating. There are many examples of America's slouch toward Gomorrah, including the collapse of popular culture, the decline of the education system, the atrocious condition of the inner cities—particularly the scourge of illegitimacy, the



redefinition of our legal system, and the failure of a social welfare system that was promulgated by a government with misguided compassion and irrational incentives.

Popular culture reflects the attitudes and mores of the society from which it emerges. In that arena, the United States has declined precipitously in the past half-century. In 1951, one of the most popular songs in the United States was Irving Gordon's "Unforgettable," a beautiful and melodious love song. In our time, a liberal definition must be applied to the word *music* if it is to describe such modern classics as Nine Inch Nails' "Big Man with a Gun," which resonates with violence and sex.

Michael Bywater wrote,

The music industry has somehow reduced humanity's greatest achievement—the near universal language of pure transcendence—into a knuckle-dragging subpidgin of grunts and snarls, capable of fully expressing only the more pointless forms of violence and the more brutal forms of sex. (8, p 44)

The popular television series *I Love Lucy* debuted in 1951 and provided decent, principled humor and entertainment. Today, television talk shows such as *Jerry Springer* display an astonishing daily example of ethical and moral deterioration. Innumerable television talk show hosts compete for audiences and cumulatively generate approximately 100 hours of programming weekly. The question is often asked, "Where do these shows find people willing to reveal their most vulgar intimacies?" A better question might be, "Where do the television networks find an audience of 50 million people who want to learn about women who marry their rapists or mothers and daughters who have affairs with the same man?" Popular culture is popular because an American public consumes it. The demand for vulgarity and decadence exists without the music, television and movie industries forcing it upon a reluctant public. This fact, however, does not excuse the industries of fault any more than an addict's demand for heroin excuses the actions of the drug dealer. (7)

The title of William Bennett's book *The Death of Outrage* aptly describes the contemporary American situation (4). The attack on American culture is delivered by shocks to its moral standards. That culture keeps revising its standards downward by the cumulative effect of each new outrage, so, to gain attention, it is necessary to keep "upping the ante" by being increasingly shocking. Large segments of American society, analogously to drug-resistant bacteria, are approaching the state of being unshockable. As former Senator Daniel Patrick Moynihan wrote in 1993, "We have, as a society, defined deviancy down" (23, p 17). We have, in effect, argued that if something is prevalent, then it must be normal; and if it is normal, then it must be acceptable.

This decline in American popular culture can be traced to a modern emphasis on radical individualism and unrestrained personal gratification. To propose a ban on anything that can be called *expression* is an attempt to "take away our constitutional rights." According to Bork, an expert in constitutional law,

Such reactions reveal a profound ignorance of the history of the First Amendment. Until quite recently,

nobody even raised the question of that amendment in prosecutions of pornographers; it was not thought relevant even by the pornographers. . . First Amendment jurisprudence has shifted from the protection of the exposition of ideas toward the protection of self-expression—however lewd, obscene, or profane. (7)

How could I discuss the decline in American morality without mentioning President Clinton? In 1951, the stage was set for Dwight Eisenhower, a war hero and virtuous family man, to become the next president of the United States. In contrast, I quote U.S. Senator Joseph Lieberman, the Democratic vice-presidential candidate in 2000, on the subject of President Clinton's much-publicized extramarital affair in the vicinity of the Oval Office with an employee less than half his age:

Such behavior is not just inappropriate. It is immoral. And it is harmful, for it sends a message of what is acceptable behavior to the larger American family, particularly to our children, which is as influential as the negative messages communicated by the entertainment culture. (20)

There are other examples of America's cultural decline. The past 50 years have witnessed a worrisome decline in America's collective intellect and the collapse of the U.S. educational system. Today our schools are graduating the first generation in American history that is less well educated than the prior generation. "Every employer recognizes that it is perfectly possible for an individual to graduate from an American high school and be functionally illiterate—incapable of writing or reading a complicated paragraph" (41). The explanation for this decline is also rooted in behavior and ideas. Richard Hofstadter wrote in 1962,

It has been noticed that intellect in America is represented as a kind of excellence, as a claim to distinction, as a challenge to egalitarianism. . . anti-intellectualism made its way into our politics because it became associated with our passion for equality. (17, p 51)

Again, the problem can be traced to one of the products of modern liberalism, the promotion of radical egalitarianism, the equality of outcomes rather than of opportunities. Egalitarianism was a positive force in gradually extending education to all children and adolescents, but egalitarianism also led to the conception that education must be largely the same for students of all levels of ability. An egalitarian education system opposes meritocracy and reward for achievement. Students with great academic potential were no longer encouraged to achieve as they once were. The result has been a decline in American students' SAT scores (27) and their falling well behind the students of many other nations on international science and mathematics tests. Even college students frequently lack basic knowledge of history and geography.

The National Association of Scholars conducted a systematic survey of the evolution of university education at 50 highly selective institutions during an 80-year period. The result was a scathing report that characterized the dissolution of structure, the evaporation of content, and the decline of rigor in American higher education. General education requirements have been abandoned, with the result that stu-

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dents have information about small niches of a subject but no conception of the larger context that can give the niches meaning. The percentage of institutions with requirements in literature, philosophy, religion, social science, natural science, and mathematics has plummeted. The National Association of Scholars report paints

a discouraging portrait of diminishing rigor at the most prestigious colleges and universities in our land. Thus, by 1993, students graduating from these elite schools not only had fewer assignments to complete but were asked to do considerably less to complete them. (27)

In 1914, 98% of schools surveyed had Saturday classes. By 1993, only 6% had Saturday classes, and there was “a widespread impression within academe that even Friday classes are becoming a rarity” (27).

During the past 50 years, it has been assumed that the best predictor of a school’s success is the amount of money spent on the school. More recent objective analysis has demonstrated that the best predictor of a school’s performance is the quality of the families in which the school’s children are reared (12). The most important variables can explain approximately 90% of the disparities in school performance: the number of parents in the home, the quantity and quality of reading material in the home, the amount of homework done in the home, and the amount of television watched in the home (41).

The decline in education is therefore related to another major concern of the American public at the beginning of the 21st century—namely, the conditions of American cities and the underclass, and their effect on families. As political columnist and commentator George Will stated,

We are evolving in America today a kind of civilization that never existed before and should not exist here—one in which the cities are important not as centers of cultural and commercial vitality but are important, rather, only as burdens. We are experiencing something without precedent in urban history—broad scale social regression in the midst of rising prosperity. The principal correlate of this is family disintegration, the principal consequence is the intergenerational transmission of poverty, and the sound effect is gunfire. (41)

Charles Murray, a political scientist, contended, “Illegitimacy is the single most important social problem of our time—more important than crime, drugs, poverty, illiteracy, welfare, or homelessness because it drives everything else” (26, p A14). In 1965, former Senator Moynihan, then a young social scientist working in the federal government, published a famous report on the crisis in the African-American family (24). He declared that the United States was in the midst of a crisis because 26% of all children born to African-American mothers were born out of wedlock. At the end of the 20th century, that percentage was 68% and still increasing. Twenty-four percent of Caucasian children are born out of wedlock today—just 2% below the percentage of African-American children born out of wedlock when Moynihan rightly declared a crisis—and this demographic characteristic is increasing faster among Caucasians than among African-

Americans. The frightening fact is that no one truly understands how the collapse of a timeless, ancient norm happened.

It was a mark of disgrace, a stigma, to be associated with the cruel and reckless act of bringing into the world a child whom you had neither the will nor the capacity to parent properly. This revolution in values has occurred, not in a nation ravaged by war, famine, and pestilence, but in the United States of America during peace and prosperity. (41)

If the rise of modern liberalism is the underlying source of America’s decline, a bloated and intrusive federal government guided by irrational incentives has been driving the rise of liberalism, and the federal courts have been the delivery vehicle. In 1950, the average American family of four sent 2% of its income to the federal government. Today it sends 24%, or 12 times the amount the same family would have owed in taxes 50 years ago. Not many Americans are convinced that they are getting 12 times better government. It is likely that the liberal social policies of the past 50 years have been fundamentally incorrect.

The politicians responsible for designing and implementing our social welfare state were from a generation influenced by the hardening experience of unemployment in the Depression. This era of politicians believed that social problems and dysfunctional behavior have material bases and, therefore, have material solutions. Our social welfare system has blundered under the assumption that what the poor really need are goods and services that only the government can deliver to them. (41)

Most of the social welfare programs enacted during the past 50 years began as morally sound ideas but suffered from being the result of misguided compassion and from the inclusion of irrational incentives. As an example, consider the Aid to Families with Dependent Children federal welfare program. This well-intentioned program provided federal funding to unwed mothers to assist them in rearing their illegitimate children. The program, however, became nothing more than government-paid prostitution in that it provided a disincentive to marry and increased funding for more children to be born out of wedlock. At the end of the 20th century, the future of the U.S. welfare system is in jeopardy because of a paradox articulated by George Will:

The great achievement of 20th-century liberalism is the welfare state. That great achievement now makes liberal governance impossible. It makes it impossible because the welfare state has swallowed the federal budget—the great consumers of welfare state transfer payments are the elderly—pension and medical care. And we are an aging population. Demography is destiny, and that is the great demographic fact. (41)

Medical science has already made the very old the fastest growing segment of the U.S. population. Since 1960, the American population has increased by 30%, but the U.S. population ages 85 and older has increased by 230%, and this trend will continue (37). Currently, 50% of the federal budget is earmarked for entitlement programs. Another 14% is used to pay interest on the national debt, leaving one-third of the

budget for all domestic discretionary spending and all defense spending.

It is a fact that medical successes have created some new social challenges. One of the most pressing fiscal issues is the increasing cost of health care and the means to pay for the delivery of the many products of the success of medical research. The advances in medicine in the past 50 years are taken for granted, and the role of these advances in driving up costs is generally forgotten. There has been a tendency, particularly among politicians, to blame inefficiency and greed in the health care system rather than to face the paramount issue that advancing technology continually opens up new therapeutic and diagnostic opportunities that must be paid for. During the past 2 decades, new technology has been responsible for approximately half of the inflation-adjusted 6% annual increase in expenditures for medical care (34). The rest of the increase is due to increasing costs of wages and supplies.

This issue was notably absent from the debate that surrounded the most recent attempt to expand government control of the U.S. economy. That debate occurred in 1994, when the Democratic Party put forth a health care plan that would be the "Social Security of the Nineties" in an effort to convince the middle class of the central role of government in American society. Allow me to rehearse that debate in the style of George Will (41). The Clinton administration stated that the United States was having a health care crisis because Americans were spending 14% of the gross domestic product on health care, and that is too much. Critics asked, "How do you know that's too much?" The Clinton administration said, "Well, it's more than Austria spends." So, the critics asked, "Well, since when did Austria become an American aspiration?" The Clinton administration responded, "Well, it is more than we spent in 1960. In 1960, we spent only 6% of the gross domestic product on health care." And the critics said, "Well, good, all in favor of going back to 1960s medicine, say you're in favor of giving up MRI, lasers, and molecular biology." As recently as the mid-1970s, only 10,000 coronary artery bypass graft operations were performed annually in the United States. In 2000, approximately 600,000 were performed. Is that too many? Approximately 600,000 Americans

think that is exactly the right number. Then the Clinton administration said, "Well, we have a crisis in health care because infant mortality rates are scandalously high." Indeed they are—in some U.S. cities, they are at levels seen in developing countries. That, however, ladies and gentlemen, is because children are having babies—low-birth-weight babies born to young women out of wedlock. That is not an inefficiency in the health care system; it is a crisis of cultural values. The Clinton administration's response was, "Well, the life expectancy in Japan is longer than here in the United States." Quite right. Of course, the incidence of acquired immunodeficiency syndrome in the United States is 200 times that in Japan, and there are more handguns in private ownership in San Antonio, TX, than in all of Japan—not an inefficiency of the health care system, a crisis in cultural values.

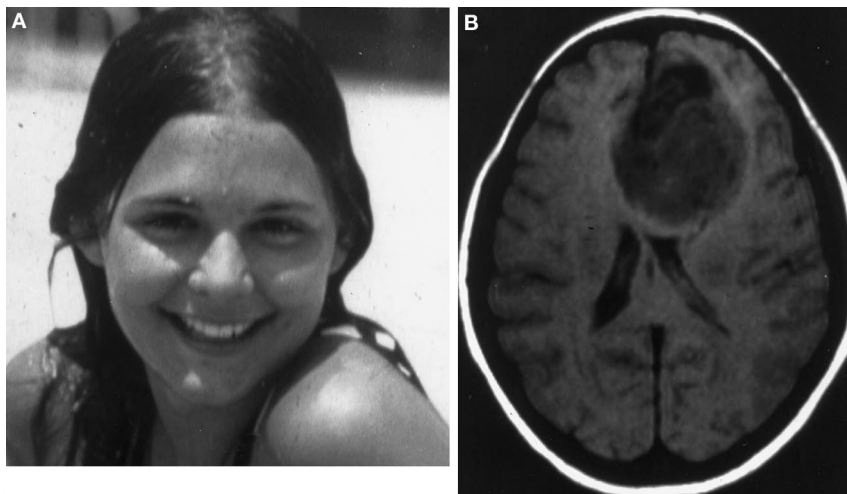
Today, the U.S. courts view themselves as political and cultural institutions. The Supreme Court of the United States, without authorization from the law, is taking out of the hands of the American people the most basic and moral cultural decisions. In his first inaugural address, Abraham Lincoln asserted,

The candid citizen must confess that if the policy of the Government upon vital question affecting the whole people is to be irrevocably fixed by decision of the Supreme Court...the people will have ceased to be their own rulers, having to that extent practically resigned their Government into the hands of that eminent tribunal.

President Lincoln was referring to the infamous *Dred Scott* U.S. Supreme Court decision, which created a constitutional right to own slaves. Lincoln's words were a harbinger of what was to come, and to this day we have not heeded his warning. Into the hands of the federal judiciary the United States has consigned ever more vital questions affecting its people. Modern Supreme Court decisions have repeatedly maximized individual rights at the expense of the corporate rights of what sociologists call *intermediate institutions*—families, schools, business organizations, private associations, and local and state governments (5, 28).

With the change in the role of the courts from that of judicial to that of political institutions has come the gradual elimination of personal accountability and the extortion of legitimate business. The government has promoted and made lucrative the idea that most Americans are victims of their own society. Americans are encouraged to organize into grievance groups and petition the government for entitlements and reparations for the wickedness done to them by American society.

Notwithstanding the concerns that I have expressed about American society's slouch, I remain optimistic that we can avoid be-



**FIGURE 4.** Photograph of my younger sister, Kris Barrow (A), and axial MRI study showing her glioblastoma (B).

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coming Gomorrah. Like early Utopian authors who placed their ultimate faith in "science as liberator and universal benefactor," I am optimistic because of my faith in the ability of the American people to achieve and succeed once a challenge is identified and a goal is established. Large segments of American society are recognizing the decline of which I speak. If a consensus emerges that the restoration of America's national character and an enhancement of American cultural values is necessary, the challenge will have been identified. If Americans devote their inner resources to achieving these social goals as they did in achieving the scientific goals of the past half-century, I am confident that the United States can avoid becoming Gomorrah and benefit from a cultural and ethical renaissance. Ultimately, societies are responsible for the world they create; no generation gets a free pass. What America needs is the willingness and the emotional courage to restore ethical and moral behavior to its culture, to bring the Supreme Court back to a state of constitutional legitimacy, to restore American education to its former level of rigor and substance, and to eliminate the perverted and illogical government incentives that reward deviant and risky behaviors. The only hurdle to be cleared in achieving these goals is convincing the American people to change. That begins with people like you and me. Through our positions as professionals, physicians, surgeons, educators, philanthropists, and parents, we have the ability and the duty to influence positive change in America's culture and national character.

Despite my criticisms of American society and culture, the past 50 years have witnessed many social and cultural triumphs. The staggering progress of the past half-century in science and technology has been created and funded largely by American society. Great strides have been made in civil rights during the past 5 decades. The Cold War was won, and in 2000 the threat of war cast its dark shadow over a smaller proportion of the world's population than before. Fewer people live in constant fear of arbitrary arrest and torture, and political, economic, and personal liberty have become widespread for the first time.

As Americans focus their attention on improving their moral and ethical health, we must not forget that much remains undone in our specialty. In neurosurgery, more reliable therapeutic options are needed for the management of cerebral ischemia, chronic pain, and neurodegenerative diseases. Spinal cord injury remains a devastating problem, and the management of head injury remains suboptimal. *Figure 4* shows a photograph of my younger sister and an MRI study revealing her glioblastoma. At the time of her diagnosis in 1992, her outlook was, for practical purposes, no better than that of a similar patient in 1951. We have much yet to accomplish. We must not only elude Gomorrah but also continue to reach for Utopia.

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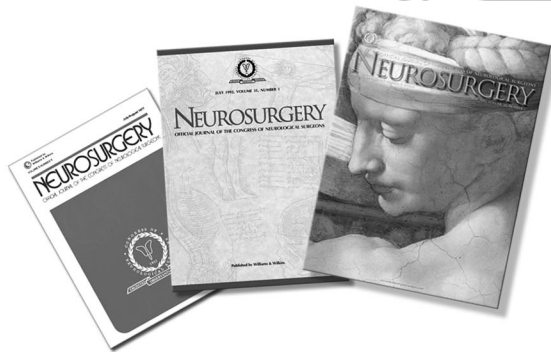
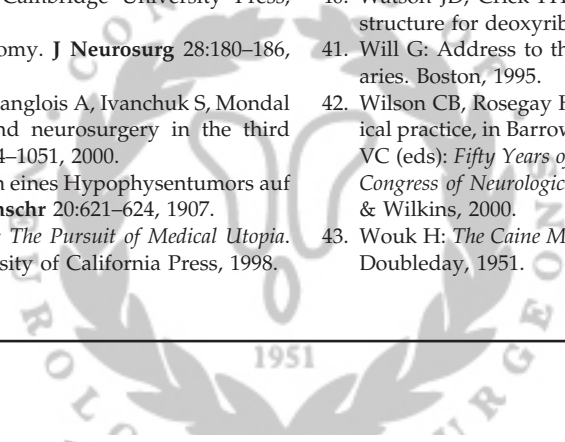
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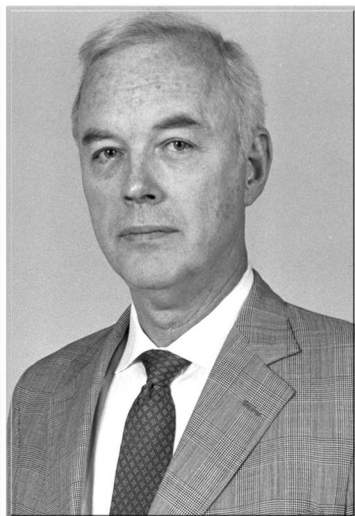
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