Facts and ideas from anywhere

William C. Roberts, MD

SIX BILLION PEOPLE

The world population reached 6 billion on October 12, 1999 (1). The population in 1960 was 3 billion, and in 1804, 1 billion; thus, most of the population growth has occurred in the 20th century. The latest billion people were added in only 12 years.

Although the number of people inhabiting the earth continues to grow, the pace of growth is slowing. The population is now growing by 1.3% annually, compared with 2% annual growth in the 1960s. The United Nations predicts that this growth rate will slow to 0.3% by the year 2050 and that the total population will peak at about 10 billion and then drop around the year 2200.

World population in the interim, however, continues to grow with nearly 78 million new people being born every year, adding the equivalent of a new city the size of San Francisco every 3 days. The population increase is occurring almost entirely in poor, developing nations. One sixth of the human population now lacks the "elements of human dignity—clean water, enough food, secure housing, basic education, and health care" (1). Population growth is the major cause of the world's most pressing environmental problems: urban air pollution, depleted drinking water, global warming, rain forest destruction, and species extinction. The decisions by individuals to have smaller families and to delay their pregnancies are the primary factors slowing population increase. Urbanization, more paying jobs, and more access to education, contraception, and family planning are other factors leading more women to have fewer children.

POPULATION OF THE USA IN 2025

Today's US population is just over 272 million. By 2025, it is projected to be 335 million (2). In 25 years, 17% of the US population will be Hispanic, and by the year 2050, 25% will be Hispanic, the result of higher birth rates among Hispanics and continuing immigration from Latin America. Over the past 2 decades, 40% of legal immigrants to the USA have come from Latin America. Inter-marriage rates will soar. Today, about 30% of Hispanics and Asians marry outside their race or ethnic group; by 2025, it will be 60%.

Here are further projections for the US population by 2025: the population will be less Caucasian (62% vs 72% today); the growth rate of the white population will be only 6% compared with much higher rates for Asians, Hispanics, and blacks; the largest minority group by 2025 will be Hispanics, nearly 60 mil-

lion (17%) compared with 30 million (11%) today; the black population will grow about 30% but as a percent of the total population will remain at about 12% as today; the fastest growth rate will be among people of Asian and Pacific Island descent, from about 10 million today to nearly 21 million in 2025, a 102% increase; and Native Americans—American Indians, Eskimos, and Aleuts—will constitute 0.8% of the population in 2025 compared with 0.7% today.

The age distribution of the population will shift dramatically by 2025. More people will be ≤ 14 years (21% increase), fewer people will be aged 35 to 49, more people will be ≥ 80 (14% increase), and those ≥ 100 will increase by 315%. By 2025, the rest of the nation will look like Florida now. The median age of the white population in 2025 is projected to be 43 years and that of the Hispanic population, 29 years.

The shift of population away from the Northeast and Midwest toward the South and the West will accelerate. Texas is projected to grow by 45% during the next 25 years and California by >55% (to 49 million). Texas will remain the second largest state after California. By the year 2025, whites in California will be in the minority; Los Angeles will be 60% Latino.

THE EVER-WIDENING GAP BETWEEN THE RICH AND THE POOR IN THE USA

In the past 22 years, the after-tax income for the top 5% has increased 43% while that of the bottom 5% has fallen 9% (3). Four of 5 US households—some 217 million people—now take home a thinner slice of the economic pie than they did 22 years ago. Each person in the average US household today, however, has 814 square feet of living space compared with 478 square feet in 1970; 62% of all households own ≥ 2 vehicles compared with 29% in 1970; the number of gas ranges in this 22-year period has increased 6-fold; and air travel has increased 4-fold. Most Americans know that what we earn depends on what we have learned, and that is especially true in our present high-tech information economy. Now 83% of US children complete 4 years of high school compared with 55% in 1970. For too many, however, work no longer provides the wages and promotions that allow economic success and security.

HOPE

The acronym HOPE stands for Heart Outcomes Prevention Evaluation, a study designed by Dr. Salim Yusuf, involving 267 centers from 19 countries (4). Yusuf presented the findings of the HOPE study at the annual scientific sessions of the American Heart Association meeting in November 1999 in Atlanta, Georgia. A total of 9297 patients with any evidence of coronary ar-

tery disease, stroke, or peripheral vascular disease were randomly assigned to receive ramipril (10 mg daily) or placebo. The mean age of the patients was 66 years, 27% were women, 90% had clinical evidence of myocardial ischemia, and 38% had diabetes mellitus. The follow-up period was 4 to 6 years.

In March 1999 the trial was terminated early on the recommendations of the trial's data and safety monitoring board. At that time, 14% of the patients given ramipril had reached the primary end point (a composite of myocardial infarction, primary stroke, or death from cardiovascular causes) compared with 17.5% of the patients given placebo, a 22% reduction in the treatment group. These results corresponded to a risk reduction of 25% for cardiovascular death, 20% for myocardial infarction, and 32% for stroke. The ramipril group also had a 15% risk reduction in revascularization procedures (angioplasty or bypass) and a 17% risk reduction for complications of diabetes mellitus. These reductions were similar for patients with normal or abnormal cardiac function, for patients with or without systemic hypertension, for patients with or without coronary artery disease, and for patients with and without diabetes. Thus, the angiotensin-converting enzyme inhibitor ramipril has survivor benefits after atherosclerotic events similar to those of aspirin and beta-blockers and roughly half those of statin drugs.

BONFIRE DISASTER

Twelve dead, 27 injured. The bonfire's 55-foot central guide pole apparently broke. The bonfire has been a 90-year tradition at Texas A&M before the school's biggest football game against its rival, The University of Texas (5–7). The bonfire first occurred in 1909, and until 1936 the blaze was fueled with desks, chairs, and other items, some taken from classrooms. For more than 50 years, students have erected this structure with logs. In 1969 the bonfire was 109 feet tall, and since 1970 it has been limited to 55 feet. The bonfire structure has collapsed before, in 1957 and in 1994. Nobody was hurt in either collapse, and the bonfire was rebuilt both times. Every student must go through a safety training program before participating in the bonfire. Two years ago, officials began a crackdown on alcohol use during the project after occasional reports of drunkenness.

Construction of the bonfire usually begins in late September, with students working only from 6 PM to 6 AM to avoid disrupting classes. About 5000 workers are involved in some way, investing an estimated 125,000 hours of time over a 2-month period. Seven thousand logs are used, each approximately 30 feet long and 8 to 24 inches in diameter and each weighing approximately 800 pounds. The trees are donated by landowners but cut down by the students. During the final 12 days of construction, work increases to a hectic but well-organized pace. Several hundred students were on the scene earlier in the night. At the time of the collapse, about 60 students were believed to be on the stack, below the limit of 70. Although the bonfire apparently produces a great esprit de corps and teaches lessons in teamwork, the structure is obviously dangerous, expensive, and time consuming, and I, as a non-Aggie, vote for its elimination.

THE GALVESTON HURRICANE OF 100 YEARS AGO

The hurricane that struck Galveston on September 8, 1900, killed at least 8000 people (8). At the time, Galveston, the nar-

row island bordered by the Gulf of Mexico and Galveston Bay, was Texas' leading center of commerce. International ships docked at its port; passenger and freight trains converged there; elegant buildings lined the streets; the city was reputed to have more millionaires per square mile than Newport, Rhode Island; and the beachfront was reigned by boardwalks, hotels, and bath houses. In 1900 Galveston stood on the verge of greatness, but the city's highest point was 8.7 feet above sea level and its average altitude was half that—so low that with each foot increase in tide, the city lost 1000 feet of beach.

On that hot September day, ignoring obvious signs of the coming inundation, the citizens of Galveston went about their business as the barometer dropped, the winds raged, and the sea rose. No one seemed terribly worried. The first intimation of the true extent of the disaster came when the body of a child floated into the US Weather Bureau's Galveston station, which was headed by Isaac Cline, a meticulous and dapper man, very much a gentleman of his time, a man of reason. To be an alarmist was not in his repertoire. According to regulations, a storm could not officially be called a hurricane without authorization from the Weather Bureau's chief. No such okay was ever given for the storm bearing down on Galveston. The storm apparently moved through the city like "a mailman delivering dynamite." Sustained winds reached 150 miles an hour, gusts perhaps >200 miles per hour. The sea followed.

The book *Isaac's Storm* describes the fates of families afloat on the remains of houses, straining for sounds of their loved ones in the wet and windy dark. Many people were trapped in houses as they filled with water. There were so many dead that bodies were burnt or buried at sea. The Galveston hurricane was a tragedy without heroes or villains, only victims. Even in this age of the Weather Channel, hurricanes still behave unpredictably and are capable of deadly destruction.

PEDESTRIAN FATALITIES

In 1998, 5220 people on foot were struck and killed by vehicles in the USA (9). That is the lowest number ever recorded, but Americans are walking less than ever. In 1977, 9% of all trips were made on foot; in 1995, only 4.5% were made by walking according to the Department of Transportation. In 1998, 1 pedestrian was killed in a traffic accident every 101 minutes. More than two thirds of those killed were males. Nearly half (47%) of deaths occurred on Friday, Saturday, or Sunday. Alcohol reportedly was involved in 46% of accidents that killed pedestrians. Older pedestrians (>60 years) are killed more frequently than younger ones. The average adult walks about 4 feet per second; the elderly walk about 2.8 feet per second. The traffic lights simply were not designed for older folks.

Some communities are trying to reduce these fatalities further by installing the following:

- 1) *Runway lights*. These are in-ground lighting systems like those used on most airport runways. When a pedestrian steps onto the street, the lights illuminate the walkway and are visible to drivers >300 yards away.

- 2) *Countdown signs*. Instead of flashing "walk/don't walk" signals at intersections, some cities are installing electronic signs that tell pedestrians exactly how many seconds they have to get across the street.

3) *Radar sensors.* These detectors sense when slower walkers are on the road. If a pedestrian is lagging behind others, the walk signal will automatically add about 5 seconds to its cycle.

4) *Electronic eyes.* This device sits atop the walk signal. When the “walk” signal lights up, a pair of electronic eyes gazes left and right, reminding pedestrians to look both ways for oncoming cars. Preventive medicine is the best medicine.

DROPPING MURDER RATE

The nation’s 1998 murder rate dropped to 6.3 murders per 100,000 residents, the lowest since 1967 and a 7% drop from 1997 (10). Nevertheless, there were 16,914 murders in the USA in 1998, 1294 less than in 1997. The numbers of aggravated assaults (1,000,000), robberies (470,000) and rapes (95,000) were essentially unchanged between 1997 and 1998.

THE BEST ATHLETE OF THE 20TH CENTURY

Wilton Norman Chamberlain died at his home on October 12, 1999, at age 63 (11–13). He was fast, quick, strong, 85 inches tall, and 275 pounds. In his 14-year National Basketball Association (NBA) career, he averaged 30.1 points and 22.9 rebounds per game. He and Michael Jordan are the only 2 players in league history to have career averages of >30 points. He not only is the sole player in NBA history to score 100 points in a game, but he has the 3 highest scoring games in NBA history and 15 of the top 20 performances. He averaged 50.4 points a game in one season and 44.8 in another. He is second on NBA’s all-time scoring list with 31,419 points. (The leader played 6 more years than he did.) He led the NBA in field goal percentages 9 times, in rebounds 11 times, and in scoring 7 times. He led the league in assists 1 season. He was certainly the best shot blocker in NBA history, but blocked shots were not recorded until the 1973 to 1974 season, the season after his retirement. He grabbed 55 rebounds in 1 game and had a triple double in another—22 points, 25 rebounds, and 21 assists.

His endurance was legendary. In his third season in the NBA, he missed only 7 minutes in 80 games. He played a stretch of 51 games in a row in which he played every minute and for the season averaged 48.5 minutes a game in a sport where the regulation game is only 48 minutes. Overtime games added the extra half-minute.

In college he had been a track star. He did the 100-yard dash in <11 seconds, and his best event was the 440-yard dash. He never lost a shot-put competition (his best was 56 feet). He also was a high-jump champion in college (6’6”), and he had a 50-inch vertical jump. He never married. He traveled widely, was interested in most things, and was writing a screenplay and taking saxophone lessons when he died. A gardener found him dead in his home.

PAYNE STEWART (1957–1999)

Payne Stewart won the US Open twice and the Professional Golfer’s Association tournament once (14). In the 1998 US Open he was ahead by 4 shots with 1 round to play. Then, Lee Janzen shot 68 and beat him by 1 stroke. He won the 1999 US Open by holing a 15-foot putt on the final hole. In his final tournament he played a key role in the Ryder Cup victory. His match with Colin Montgomerie was the last one to be decided. The

USA already had won the cup, so the 2 played the last hole tied for pride. Montgomery had a 20-foot putt to win the match. If he missed, the match would be a draw. Stewart walked over, picked the ball up, and handed it to him. He gave him the putt and the win. This Southern Methodist University graduate, a true star, will be missed.

FIRST PENICILLIN RECIPIENT

On May 27, 1999, Anne Shaeffer Miller, the first person in North America to be saved by penicillin, died at age 90 in Salisbury, Connecticut (15). In March 1942, Miller, the wife of Yale’s athletic director, developed a severe hemolytic streptococcus septicemia with her temperature soaring to >41°C (>106°F) for nearly 10 days despite treatment with sulfa drugs. She was then given an experimental drug called penicillin. Within 1 day Miller’s hospital chart, which is now at the Smithsonian Institution, showed a drop in temperature to near normal. She was no longer delirious or unable to eat. Miller’s incredible recovery convinced the Office of Scientific Research and Development and the pharmaceutical industry to start production of the drug. At the time, penicillin was so scarce that Ms. Miller’s urine was collected and sent back to Merck, where the antibiotic was re-extracted and reused. Anne Schaeffer Miller lived for 57 years after she was cured of her infection with penicillin.

BIRDS, HUMANS, AND PATHOGENS

A West Nile–like encephalitis virus entered Queens in the summer of 1999 and killed 6 people in that metropolitan area. Now the disease is apparently moving south with some 5 billion migratory birds that sweep across North America each autumn. Where the virus will end up is unknown, of course, as is the eventual impact on the bird populations themselves. While there is an exotic Old World novelty to the West Nile–like virus, human disease carried by birds is nothing new (16). Some of the deadliest epidemics, including influenza, have been spread by birds (or domestic fowl in the case of flu). Birds also carry several strains of encephalitis more commonly found in the USA, including St. Louis and Eastern and Western equine.

While nonhuman animals have always served as a bridge for a few infectious diseases that jump to humans, the problem is not birds but humans. We have shrunk the world with jet airplanes and global trade, breaching the oceans, the last great barriers to the spread of disease. We have tampered with the planet’s climate, making it likely that otherwise tropical diseases will push north into temperate zones where before they had been absent. Investigators are now exploring the role of migratory birds in spreading tick-borne ailments, like Lyme disease and human granulocytic ehrlichiosis, a sometimes fatal illness only recognized in 1994. The birds do not transmit the diseases to humans directly. Instead, they pick up the infected ticks and fly them to uninfected areas where the parasites drop off. The birds also may carry the microbes in their bloodstream, infecting new ticks that bite them. Because birds can cover thousands of miles in days or weeks, they can be astonishingly effective in spreading illness, which may explain why Lyme disease cropped up so quickly in so many parts of the country. We have much to learn about the dynamics that link birds, humans, and pathogens.

BIRTH CONTROL METHODS IN JAPAN

The most common forms of birth control in Japan are condoms and the rhythm method (17). The result is that two thirds of pregnancies in Japan are unplanned, the highest rate in the developed world. Abortion in Japan is also frequent; nearly 25% of all pregnancies in Japan end in abortion. Unlike in the USA, abortion is almost noncontroversial in Japan.

Although a birth control pill has been available to US women for 35 years, a birth control pill similar to that available in the USA has only recently been approved in Japan. It went on sale there on September 1, 1999. The Japanese government may have prevented distribution of the pill for so long because of its fear that Japan's anemic birth rate would plunge further, reducing the labor force and leaving society vulnerable for the care and hospitalization of its aging citizens. Japanese women also fear artificial intervention when it comes to reproduction. Although they commonly take a painkiller for a cold or headache, most are reluctant to use a painkiller for menstrual cramps for fear that it could affect their ability to bear children. Some have blamed physicians, who profit considerably from performing abortions, suspecting that they have helped block the approval of the birth control pill in Japan by propagating its negative image there. Nearly 80% of women in a recent survey there said they did not know much about the pill. One leading women's health advocate in Japan stated, "Japanese women are scared of the pill the way people are scared of ghosts."

Another reason it has taken so long for Japan to approve the pill was the fear, in this male-dominated society, that women would have more sexual freedom and independence. Few women work outside the home, and fewer still have careers. If Japanese women could plan their pregnancies better, their roles in society might change. Another view is if Japanese women used the pill, they would be able to control their bodies by themselves.

A recent survey of French women found that >50% of the respondents named the pill as the thing that changed their lives the most in the last 20 years. Nevertheless, many Japanese women remain wary, fearful, and displeased that the pill has been approved. They worry that women who use it, even those who are married, will be putting themselves at risk for disease. The problem, say some, is that many Japanese husbands have sex with other women. If women don't protect themselves with condoms, they can get infected with viruses like AIDS.

MATERNAL DEATH RATES AND RACE

The Centers for Disease Control and Prevention studied data from death certificates and birth certificates in all 50 US states from 1979 through 1992. The study found that during those 14 years, 3777 women died during or shortly after delivery or up to 1 year following delivery (18). The most common cause of death was high blood pressure with hemorrhage; blood clots were a far less frequent cause. The pregnancy-related death rates among non-Hispanic white women was 6 per 100,000 live births; among Hispanics, 10; and among blacks, 25. The differences in pregnancy-related death rates between Hispanic and black women are difficult to explain. Both groups have similar levels of prenatal care and a similar economic status. In 1996, 60% of Hispanics and 55% of blacks lived in families considered poor or nearly poor compared with 26% of whites.

BEAUTIFUL OVARIES

Fashion photographer Ron Harris has launched a Web site (www.ronsangels.com) to sell models' ovarian eggs, auctioning them for up to \$150,000 (19, 20). Selling eggs and sperm online is not new. Fertility clinics and individuals have done it for years. What's new is the blatant if not misguided message of the Web site: beautiful eggs are available to monied people. Mr. Harris has devised an apparently legal way to help couples boost their odds of having attractive children. The models get 100% of the winning bids, then Harris tacks on an additional 20%, paid by the bidders, as his fee. To find out more detailed information on the models—including their ages and even their specific body measurements—people who visit the Web site must pay a \$24.95 monthly fee.

Harris, who has been photographing models for nearly 40 years, believes that beauty, not brains, leads most people to a successful life. His Web site will put beautiful girls in touch with people who "need" their eggs. Critics say the Web site looks more like a porno site than a place to purchase ovarian eggs. Officials in the fertility industry, of course, are outraged. Most of the models apparently are not aware of how the egg transfer works. Egg donations typically require several weeks of hormone injections and a surgical procedure to remove about 10 eggs. The eggs eventually are mixed in a Petri dish with sperm before being implanted into the infertile woman. There are apparently 6.1 million infertile American women. A few of them will have the money to pay for the beautiful eggs. Harris apparently also has plans to start selling sperm from male models on his Web site—at \$10,000 to \$50,000 per aliquot.

FREEZING OVARIES

At 17 years of age, 1 ovary was removed because of an obstetrical problem (21). At age 28, the second ovary was excised because of upcoming cancer therapy, but on this occasion the excised ovary was frozen. A year later the frozen ovary was reimplanted. Three weeks later signs of blood flow to the reimplanted ovary were apparent, and 3 months later ovulation resumed after treatment with artificial hormones. The surgeon, Kutlak Oktay, indicated that the procedure was only for cancer victims or other patients who want children after surviving treatments that would destroy reproductive organs. This type of procedure also might allow for childbirth at much later ages than is possible at present.

MALE FERTILITY IN WINTER VS SUMMER

Grace Centola (22) from Rochester, New York, studied 13 sperm donors, analyzing their first donations at the onset of each season. From winter to summer, sperm counts declined (by 41%), sperm speed decreased, and the number of defective sperm increased. Infertile men showed no seasonal variation in sperm count. According to the National Center for Health Statistics, peak birth months, at least in 1997, were July, August, and September, 9 months after October, November, and December, respectively. Even though sperm counts diminish during summer months, the sperm donors remained fertile, indicating that hot weather cannot be used as a substitute for contraception.

BIRTH CONTROL USED BY FEMALE PHYSICIANS

Erica Frank (23) analyzed 1993 to 1994 data on 4501 female physicians and compared their birth control practices with those from a government survey of women in the general population. The diaphragm was used by 18% of the female physicians and by only 3% of women in the general population, a 6-fold difference. Frank speculated that the high frequency of diaphragm use by the female physicians stemmed from their better familiarity with their anatomy, making them more comfortable inserting a diaphragm. Only 21% of the female physicians indicated that they or their husbands had been sterilized compared with 42% of the women in the general population.

OVERWEIGHT EPIDEMIC

An October 1999 issue of the *Journal of the American Medical Association* (JAMA) was devoted to the problem of obesity (24–29). About 60% of adults in the USA are overweight, and 50% of those in the overweight group are obese. If one asks an overweight patient whether he or she is obese, the answer nearly always is “no.” It seems that most of us do not mind being overweight, but we do mind being obese. A telephone survey of >100,000 adults in the USA asked people how much they weighed: in 1991, 12% of adults were obese, and in 1998, 18% were obese, a 33% increase in a 7-year period!

Much depends on how obesity is defined. In older days obesity usually meant >20% over ideal body weight, with the ideal body weight being determined by an insurance company in relation to height. The present way to discuss overweightness and obesity is of course by body mass index (BMI), weight in kilograms divided by the square of the height in meters or the weight in pounds divided by height in inches squared and then multiplying the result by 704.5. Ideal BMI is considered 19 to 25, overweightness >25 to 30, and obesity >30, roughly >30% over ideal body weight. I believe these BMI definitions of overweightness and obesity are too high. I weigh 170 pounds and am 72 inches tall. Seventy-two squared is 5184. One hundred and seventy divided by 5184 equals 0.0328, which when multiplied by 704.5 equals 23.10.

The US Centers for Disease Control and Prevention survey also described the percentage of adults who were obese by where they lived in the USA. The highest percentage (22.9%) of obese people in the USA reside in West Virginia, one of the poorest states in the Union. New England and the Mid-Atlantic regions had the lowest frequency of obesity, and the South Central and South Atlantic regions had the highest frequency. During the 7 years of the survey, the percentage of adults in Texas who were obese increased from 12.7% in 1991 to 19.9% in 1998, a 36% increase. In Georgia, these percentages increased from 9.2% in 1991 to 18.7% in 1998, a 49% increase, the largest increase of any of the 50 states.

Why focus on overweightness? In my view, the single most responsible thing any of us can do for our health is to maintain an ideal body weight. Why? Groups of persons at ideal body weight, assuming they do not have cancer and do not smoke excessively, live longer than those who are overweight. And certain diseases are far less common among those at ideal body weight, including coronary artery disease; abdominal aortic aneurysm; peripheral artery disease; systemic hypertension; cancer

of the breast, colon, and prostate gland; diabetes mellitus (after age 50); hemorrhoids; diverticulitis; hiatal hernia; gallstones; kidney stones; osteoporosis; and osteoarthritis, to name a few. Medical costs for those at ideal body weight are considerably less than for those who are overweight. And just as nonsmokers pay a good portion of the smokers' health care costs, the ideal-body-weight population pays a great deal of the health costs of the overweight population. For the health care costs to come down, we have to do our share, and that starts with pushing away from the table. As important as physical exercise is, the most important exercises any of us can do are push-aways from the table, and they need to be carried out 21 times a week or 3 times a day.

ADDING TRANS FAT TO NUTRITION LABELS

The Food and Drug Administration has proposed that trans fat be added to food labels (30). Trans fats, which have received increasing attention in the past 10 years, are produced artificially through a process called partial hydrogenation, which is used to convert liquid vegetable oils into solid fats, usually to protect against spoiling and to maintain flavor. Examples include stick margarines and shortening, deep-fried foods such as French fries and fried chicken, and pastries, cookies, doughnuts, and crackers. Trans fats are chemically different from saturated fats, but like saturated fats, they raise low-density lipoprotein cholesterol and they lower high-density lipoprotein cholesterol.

Under the proposal, products containing trans fats would carry an asterisk or some other mark on the line for saturated fats, directing consumers to a footnote about trans fats. The footnote would be optional on foods that contain <0.5 grams of trans fat per serving. The rule would require that foods advertised as low in saturated fat be virtually free of saturated fats, containing ≤ 0.5 grams per serving. Claims about low cholesterol would be permitted only on food containing ≤ 2 grams trans fat and saturated fat combined. A “trans fat free” claim could be used for foods containing <0.5 grams of trans fat and <0.5 grams of saturated fat per serving. A label of stick margarine may boast that it contains 70% less saturated fat than butter, but the additional 3 grams of trans fat hidden in each serving means it does not do 70% less damage to our arteries. It is hoped that the new proposal will spur food manufacturers to shy away from using trans fat in their products.

HIGH-PROTEIN MEAT DIETS

The recent best-selling diet books slash carbohydrates (candy, cake, cookies, bread, grain, pasta, potatoes, corn, and some fruits and vegetables) and beef up protein (meat, poultry, fish, eggs, cheese, and nuts) (31, 32). Two new books, *NeanderThin* (to be released in January 2000) and Charles Hunt's *Diet Evolution* (released September 1999) also pedal protein. These diets sound similar but vary significantly in specific details, including recommended amounts of protein, fat, fruits, and vegetables. To my surprise, Robert Atkins, the author of *Dr. Atkins' New Diet Revolution*, is apparently a cardiologist. His book is presently number 5 on *USA Today's* best-selling books list; *Protein Power*, coauthored by family doctor Michael Eades with his wife Mary Dan, is number 27 on that list. Many leading obesity researchers and nutritionists are appalled by these diets. These low-carbohydrate diets run contrary to the nutrition advice of most major health

organizations, which advocate a diet relatively low in saturated fat and high in complex carbohydrates (greens and vegetables). These foods clearly lower the risk of cardiovascular disease and some types of cancers.

The most common question I receive after a cholesterol talk is, "What about the Atkins' diet?" These diets, of course, are a meat-lover's dream because they recommend lots of protein instead of carbohydrates. These diets do result in weight loss in many of the dieters, I believe, because the quantity of fat, which provides 9 calories per gram, is replaced to some extent by protein, which provides 4 calories per gram. Although these diets have been around for 20 years, there are no outcome studies showing long-term benefit. They have clearly increased the demand for bovine muscle (beef), which is predicted to increase by 1.6% this year over 1998; porcine muscle (pork) is up 2.3% this year. Live cattle futures and fresh pork bellies, from which bacon is made, are higher this year than in recent years. Certainly the cows and pigs are against these diets. Their holocaust continues. About 100,000 cows and about 300,000 pigs are slaughtered in the USA each day. Some investigators believe that osteoporosis is primarily a consequence of eating too much protein. Apparently the more protein we eat the more calcium we lose in the urine. It is estimated in the USA that the average woman by age 65 has lost 35% of her skeleton. Humans simply were not made to eat so much muscle.

There are other drawbacks to these diets. They produce uncomfortable side effects, including bad breath, constipation, fatigue, nausea, dizziness, irritability, and light-headedness. Eades says that the fatigue can be avoided by taking a potassium supplement and a multiple vitamin/mineral supplement with magnesium but not iron. I find no evidence for that claim. I'm still a calorie-in/calorie-out counter.

PORK RINDS IN THE ATKINS DIET

When Robert Atkins published his first diet book in 1981, sales of pork rinds increased, and when his latest book appeared in 1998, sales of pork rinds shot up again (33). Nearly 16% more pork rinds were sold in 1998 than in 1997. Pork rinds are the only fried snack allowed in the Atkins diet! Pork rinds are now nearly as popular as popcorn in the snack ratings. Pork-rind producers buy processed pig skin, cure it, smoke it, and fry it in its own fat. Most of the skin fat is removed, giving the snack half the fat of potato chips. Pork rinds also have about 7 grams of protein and no carbohydrates, a key in the Atkins diet. We need to remember that there are no outcome studies on the Atkins diet, despite the fact that it has been around for nearly 20 years.

OUTBACK STEAKHOUSES

The first Outback Steakhouse opened in Tampa, Florida, in 1988 (34). Now there are 604 such restaurants in the USA, with sales of \$1.5 billion annually. In Texas, the prime rib of the American cattle industry, there are 45 Outback Steakhouses—and counting. The cows, of course, are very much against this trend.

CALORIC RESTRICTION AND LONG LIFE

Prolla and Weindruch (35) from Madison, Wisconsin, tested the hypothesis that life span could be extended by consuming fewer calories. These investigators fed one group of mice a regu-

lar diet while restricting by 24% the caloric intake for the other group. Both groups received healthful levels of vitamins, minerals, and proteins. Only calories were cut, creating a condition of undernutrition, not malnutrition. The results were unambiguous: mice fed the low-calorie diet lived up to 50% longer! The explanation: possibly key genes that normally deteriorate with age continued to function in a youthful way when the mice were underfed. Overeating appears to accelerate the aging process.

FIVE A DAY

"Five a Day" is the federal government's biggest effort to educate the public about healthy diets. Its annual advertising budget is \$1 million (36). The annual advertising budget of McDonald's is \$1 billion; Coca-Cola Company, \$770 million; and General Mills, \$598 million. McDonald's spends more every 12 hours to promote greasy burgers and fries than the National Cancer Institute spends a year on "5 a Day" to get people to eat more fruits and vegetables. The reason for such measly government nutrition campaigns is no secret. When dietary changes are considered, the meat and dairy industries, soft drink bottlers, other business interests, and a lack of interest from top key government officials become barriers.

MEASLES IN THE USA NEARLY GONE

Only 100 cases of measles were recorded in the USA in 1998, and all but 29 of them involved people who were infected in other countries (37). In contrast, from 1989 to 1991, measles infected about 55,000 persons in the USA, killing 120 of them. Measles still kills roughly 1 million people worldwide each year, about half of those in central Africa. A measles vaccine was developed in 1963, and state laws require children to be vaccinated before they enter school. About 90% of US children are immunized by age 2. Thus, measles has joined the ranks of smallpox, polio, and diphtheria as diseases that have been effectively eradicated in the USA.

COOL MEDICINE

Modern medicine would not be possible without air conditioning. Willis Carrier, a mechanical engineer from Buffalo, New York, designed the first system for cooling in 1902 and patented his "Apparatus for Treating Air" in 1906 (38). Air conditioners, however, did not become common until after World War II. In 1946, only 30,000 units were produced, but by 1953 that number was up to 1 million annually. Without air conditioning in summer months, fragile patients more easily get overheated and dehydrated, foods and medicines spoil more quickly, infections spread more readily, and sensitive medical equipment may not work properly. Bacteria, viruses, and mold wallow in warmth and humidity. Before air conditioning, heart attacks were more common in summer than in winter months. Since air conditioning, the summer peaks in death rates have disappeared. Thank you, Willis Carrier!

FATAL MEDICATION MIX-UP, ILLEGIBLE WRITING, AND MALPRACTICE

A jury in Odessa, Texas, ordered Ramachandra Kolluru, a cardiologist, to pay \$225,000 to the family of Ramon Vasquez, who died after a pharmacist misread Kolluru's writing (39). The

42-year-old heart patient was given the wrong medicine at 8 times the recommended dosage. Two weeks later he was dead from an apparent heart attack. In June 1995, Vasquez was given a prescription for *Isordil* for chest pain. The prescription called for him to take 20 mg of *Isordil* 4 times a day for a total of 80 mg a day. The pharmacist thought the handwritten prescription said *Plendil*, typically taken at no more than 10 mg a day. After taking the wrong drug, Vasquez complained to his wife that his heart pounded rapidly for a while. The case points to a growing danger as medicines become more numerous and their names more similar. Hundreds of drugs have similar names and are commonly confused with one another, among them the pain medication *Celebrex*, the antidepressant *Celexa*, and the antiseizure medicine *Cerebex*; *Norvasc* and *Navane*; and the tranquilizer *Zyprexa* and the antihistamine *Zyrtec*.

PAPERLESS PRESCRIPTIONS

It is estimated that 2 million Americans are hospitalized annually from side effects of drugs and that 100,000 die (40). Many hospitalizations and deaths are caused by preventable medication errors: the wrong drug or wrong dose is prescribed, pharmacists misread an illegible prescription, physicians or pharmacists mix up drugs with similar names, or a drug interacts dangerously with a patient's other medications. Electronic prescribing may decrease these errors. Several companies now offer handheld electronic prescription pads, which are a bit larger than the PalmPilot. The prescription can be e-mailed to a drug store, thus avoiding phone calls when the pharmacist discovers that the insurance of patient X does not cover drug Y. Different insurance formularies are programmed into the electronic prescription writer so that the physician can choose up front whether to fight an insurer's coverage decision or pick an alternative drug. Whether or not "e-prescribing" catches on with a large number of physicians is unclear. It is not as fast for the physician as is scribbling a prescription on a piece of paper, and not all insurers or drug stores accept e-prescriptions. And it can be costly. One such device ("TouchScript") costs about \$250 per month. I suspect, however, that paperless prescriptions will be the future.

MEDICAL CARE ON THE HIGH SEAS

Medical emergencies can be terrifying anywhere but particularly so on a cruise ship hundreds of miles offshore (41). Even on the largest ships—floating towns with as many as 3100 passengers and 1500 crew members—the infirmaries are better equipped for sunburn and seasickness than for heart attacks. They are often staffed by physicians who are not qualified to work in the USA. The cruise ships are free of any US regulations. Though >90% of the passengers are Americans (>5 million in 1999), the ships are governed by the laws of the countries where they are flagged, mainly Panama, Liberia, and the Bahamas. The \$12-billion cruise industry pays virtually no US corporate taxes and can ignore many American laws governing labor standards, the environment, and security. There is no international oversight of medical care because maritime law does not require cruise ships to provide any for passengers. Although the care has improved recently, the quality of physicians and the sophistication of equipment vary enormously. The major cruise lines have physicians, nurses, and infirmaries on their ships, but the medical person-

nel are independent contractors, not employees, and courts have ruled that the lines are not liable for their actions.

Three years ago the American Medical Association brought pressure on the cruise-line industry to improve care after a study by 2 Florida physicians found glaring inadequacies in staff qualifications and equipment on ships. In a survey of 11 cruise lines, the 2 physicians found that 27% of physicians and nurses on cruise lines did not have advanced training in treating victims of heart attacks, the leading killer on ships, and 54% of physicians and 72% of nurses lacked advanced training for dealing with trauma. Only 45% of the cruise-line physicians had board certification in a specialty. The American Medical Association in 1996 passed a resolution calling for federal legislation or an international treaty to establish minimal medical standards on all cruise ships. Nevertheless, compliance with the suggested guidelines by the cruise companies at the moment is purely voluntary.

The law and recent congressional action favor the cruise industry when encountering a malpractice suit. First, maritime law governs claims. The Death on the High Seas Act limits damages to real monetary losses, eliminating punitive damages and payments for pain and suffering. And judges, not juries, decide maritime cases. The law of the sea also specifies that a ship owner has no duty to provide medical care and, as stipulated in the small print on cruise tickets, is not liable for the ship's physicians and other independent contractors. That precedent is rooted in the 19th century, when transatlantic ships gave physicians free passage in exchange for caring for passengers. Cruise companies argue that they still need the protection today because their expertise lies in operating ships, not in supervising physicians and nurses. Some lawyers, without success, have accused ships of false advertising, because the fine print in tickets says they provide medical care and because physicians wear the same uniforms as other officers. The fine print also specifies where a passenger can file suit. Most cruise companies choose Miami, where most have their headquarters. This means that a passenger who boards a cruise ship in California and later decides to sue must do so in Miami, even if the passenger never got within 2000 miles of Miami. Lawyers for passengers say the requirement makes suing cruise companies particularly expensive and cumbersome.

In summary, a cruise ship may be a floating town, but it is not a floating hospital.

"GRANNY CAMS"

There are 1.6 million Americans now in the nation's 17,000 nursing homes (42–44). A broad coalition of advocates for the elderly has recently called for a federal law protecting the rights of families to install "granny cams" in nursing homes to protect the elderly from neglect. The call for cameras is certain to draw controversy. Nursing home officials say cameras invade the privacy of residents at times when they are most vulnerable, during bathing and changing of clothing. Cameras might hinder the already complicated task of finding qualified workers who do demanding jobs for low wages. The presence of cameras and the implications for lawsuits might heighten employee stress. But those who have turned to cameras to capture what they believe is substandard or abusive treatment say concerns about privacy or employee morale do not outweigh a resident's right to receive quality care.

The \$87-billion-a-year nursing home industry is coming under increasing attack. The federal government estimates that violations in >25% of homes substantially harm residents. Horror stories in nursing homes abound. A report earlier in 1999 by the General Accounting Office detailed how maggots swarmed one resident's bedsores. Another resident died undetected after her head got caught between the mattress and the side rail of a bed. In 1998 Florida passed a law requiring background checks on all nursing home employees after a study revealed that 1 in 5 had been arrested or convicted of a serious crime. A similar background check bill is being pushed nationally. Malpractice lawyers are cashing in with many million-dollar settlements.

Increasingly, family members are taking matters into their own hands when they suspect that loved ones are not getting good care. Backers of cameras in nursing homes say a federal law is needed that would allow video cameras to be mounted with the permission of the nursing home resident or his or her legal representative. Nursing home operators would be informed about the presence of cameras. Anyone who interacts with a resident would be told that his or her activities are being taped. The cameras, which cost \$200 to \$500, would be installed at the families' expense. Nursing home informers, such as those endorsing cameras today, point out that only one third of residents have an immediate family member who can come to their aid. With nursing home patients expected to increase by 350% to nearly 6 million by 2040, nursing home care needs to improve, and maybe the "granny cam" is the way to do it.

INCREASING FUNDS FOR MEDICAL RESEARCH

Newt Gingrich, the former Speaker of the House, recently recommended doubling the federal funds available for scientific research in the next 5 years (45). He suggested that these funds be doubled not only for the National Institutes of Health but also for the National Science Foundation, the Centers for Disease Control and Prevention, the Laboratories of the Energy Department, and the Defense Advance Research Projects Agency. He believes that the USA is on the edge of major scientific breakthroughs that will transform our lives. Here are a few examples:

1) *More powerful chips.* The first computer with a transistor, TRADIC, was built in 1955 with 800 transistors. Today's Pentium II chip has 7.5 million transistors. Some believe that an experimental chip will be built in 2000 with a billion transistors, and within 15 to 20 years there will be a chip with 1 trillion transistors. Imagine what a laptop 13,000 times as powerful as today's would be like.

2) *Polio and smallpox* have been eliminated in the USA, and AIDS deaths are declining.

3) *Nanotechnology*, the science of developing tools and machines as small as 1 molecule, will have as big an impact on our lives as transistors and chips did in the past 40 years. Imagine highly specialized machines we can ingest, systems for security smaller than a piece of dust, and collectively intelligent household appliances and cars. The implications for defense, public safety, and health are astounding.

4) *The human genome* revolution has just begun. Francis Crick (the Nobel Prize-winning codiscoverer of DNA) believes it will take a century of research to understand and apply all the potential breakthroughs this new knowledge makes possible. The

implications for human health, food production, and the environment are incalculable.

Good for you, Newt Gingrich.

BOOM IN PHARMACEUTICAL RESEARCH AND LABORATORY CONSTRUCTION

Most of the world's major pharmaceutical companies have been boosting their research and development (R&D) budgets (46). Pfizer's R&D budget, the largest in the industry, was \$2.28 billion in 1998, a 5-fold boost from 10 years earlier. Merck's 1998 R&D budget was \$1.8 billion, a 3-fold increase in 10 years. It is estimated that big pharmaceutical companies spent \$21 billion on R&D in 1998.

And lab construction is booming. In Connecticut, Pfizer has constructed an average of 1 major new building annually for 10 years, a program that will culminate in 1999 with the completion of one of the largest drug-discovery laboratory buildings in the world. Merck is building a 325,000-square-foot chemistry drug-discovery building in New Jersey. Johnson & Johnson has just completed a 122,000-square-foot laboratory in California. Many labs in the new buildings are twice the size of older ones to accommodate new high-tech gear: huge magnets that twist molecules or robots that can test hundreds of compounds a day. Many also are designed to encourage interaction among scientists. In the new buildings at both Pfizer and Merck, the labs and offices encircle a central core so scientists can gather without being in the way of people passing by. Office doors are angled into one another so scientists run into each other when leaving. Pfizer groups 5 to 7 scientists in "families," and each family has its own open conference area called a "huddle zone." With huge windows and sweeping views, these spots are the prettiest in the building. Pfizer's "families" are grouped into a "tribe" of 70. Each tribe has its own larger gathering areas. All have coffee carts. Both Merck and Pfizer are trying to put together different types of scientists to encourage unexpected avenues of discovery. All of this almost certainly will lead to the development of many new drugs, and most of the investigators are PhDs, not MDs.

LEADERS IN PATENTS

Years ago I read a book on Thomas Edison and learned that from 1869 until 1910 he submitted an average of 1 patent to the US patent office every 11 days, a remarkable feat by a single man. The US Patent and Trademark Office granted a record 151,024 patents in 1998, up 33% from the previous year (47). For a sixth year in a row, IBM received more patents than any other company, namely 2682, an average of 7 for each day of the year. The other US companies in the top 10 were Motorola (number 4) and Eastman Kodak (number 9). Japanese companies comprised 6 of the top 10 companies.

THE MOST IMPORTANT INNOVATORS OF THE 20TH CENTURY

In 1862 Christian Schussele completed his masterpiece painting entitled *Men of Progress*. (A copy of it hangs in the National Portrait Gallery in Washington, DC.) Recently, the administrators of Cooper Union commissioned one of their most illustrious graduates, the artist Edward Sorel, to paint a sequel (48). Schussele's 19 innovators have become Sorel's 20. Of Sorel's 20 Americans only 6 are household names. They all have either

conceived inventions that changed technology or deployed those innovations to remake our world—with the exception of Rachel Carson, whose impact was immense.

The 20 were as follows:

- 1) *Philo T. Farnsworth* (1906–1971), inventor of television.
- 2) *George Washington Carver* (1861–1943), the father of agricultural technology.
- 3) *Jonas Salk* (1914–1995), developer of a polio vaccine.
- 4) *Henry Ford* (1863–1947), automotive pioneer.
- 5) *Orville Wright* (1871–1948), inventor of the airplane.
- 6) *Wilbur Wright* (1867–1912), inventor of the airplane.
- 7) *Albert Einstein* (1879–1955), discoverer of special and general relativity and the equivalence of mass and energy, which eventually led to the development of atomic weapons and power.
- 8) *Charles H. Townes* (1915–), progenitor of the laser.
- 9) *Charles Steinmetz* (1865–1923), pioneer of electrical transmission.
- 10) *J. C. R. Licklider* (1915–1990), father of the Internet.
- 11) *John Von Neumann* (1903–1957), contributor to the Manhattan Project and the hydrogen bomb who also described the stored-program computer, the basis of today's computer industry.
- 12) *William H. Gates III* (1955–), personal-computer promulgator.
- 13) *Robert Goddard* (1882–1945), rocket developer.
- 14) *James Dewey Watson* (1928–), codiscoverer of the structure of DNA.
- 15) *Wallace Hume Carothers* (1896–1937), inventor of nylon.
- 16) *Rachel Carson* (1907–1964), author of *Silent Spring*, the 1962 book about the perils of DDT, which did more than any other single event to launch the environmental movement.
- 17) *Willis Carrier* (1876–1950), inventor of air conditioning.
- 18) *Gertrude Elion* (1918–1999), developer of breakthrough drugs against leukemia, herpes, gout, malaria, and organ rejection.
- 19) *Edwin H. Armstrong* (1890–1954), inventor of the continuous-wave transmitter, the superheterodyne circuit, and the FM radio, all of which remain underpinnings of today's broadcasting.
- 20) *Robert Noyce* (1927–1990), coinventor of the integrated circuit. He manufactured his miniaturized version by cofounding Intel Corporation.

THE OZONE CAPITAL OF THE USA—HOUSTON

For the first time since scientists started tracking air quality (about 1975), Houston, the fourth largest city in the USA, has supplanted Los Angeles as the Ozone Capital of the USA, the smoggiest city in the land (49). On 44 days in 1999, Houston's ozone reading exceeded federal health standards; Los Angeles' readings exceeded the standards on 43 days. Ozone, of course, is the main ingredient of smog, produced by a chemical reaction from pollutants generated by cars, industrial facilities, and other sources. Much of the credit or blame for Houston's ascendancy goes to weather conditions. In 1999, Los Angeles had its best weather since World War II, a cool, cloudy summer with few temperature inversions that trap ozone. For the first time in decades, Los Angeles has not had a single full-blown smog alert, when residents with asthma or other lung ailments are advised to stay indoors. Houston, in contrast, experienced a heat wave in August and September, conducive to the production of ozone.

The change, however, is more than just a climatic fluke. California's strict pollution controls, considered the toughest in the world, also have contributed to its improved standing. In Los Angeles not only are motor vehicle pollutants controlled, but also hairspray, paint, and barbecues. Houston has many petrochemical plants that contribute to its smog. Texas industries, which are concentrated in the Houston area, regularly exceed their counterparts in other states in measurements of toxic emissions. As a result, Texas is the first in the nation in toxic air releases and airborne carcinogens.

COSMETIC SURGERY

When I was in medical school, I considered going into plastic surgery. Everybody wants to look better. Although women represent 9 of every 10 cosmetic surgery patients, the number of men having cosmetic procedures rose 80% from 1992 to 1998. For both women and men, *liposuction* is the most popular cosmetic surgery. After liposuction, the most common cosmetic procedures in women are *breast augmentation* (implants), *eyelid alteration*, *face-lift*, and *chemical peel*. In men, the top cosmetic procedures after liposuction are *eyelid procedures*, *nose reshaping*, *breast reduction*, and *face-lift*. The American Society of Plastic and Reconstructive Surgeons recently ran an 8-page advertising supplement in *USA Today*. Since these patients pay cash, this surgical society must have plenty of money for marketing.

THE RETAIL FUNERAL BUSINESS

Funerals are a \$10-billion-a-year business, but suddenly discounters, crematoriums, and even the Internet are giving undertakers a run for their money (50). Funerals now cost >\$5000, with the casket >40% of that price. Families are expected to buy >1.8 million caskets in the USA this year at an average cost of \$2176. But caskets can now be bought over the Internet for less than half that price. In 1998 there were 2.3 million deaths in America, and the number is projected to grow about 21,000 a year for the next 10 years. Of the deceased, 24% are now cremated, but that number is projected to rise to 38% by the year 2010. Compared with a traditional funeral, cremations are inexpensive. A cremation starts at about \$500 compared with \$5000 for a funeral. Cremations are increasing in every region. They are most popular on the West Coast, accounting for 45% of funerals there last year. In the Deep South, in contrast, they account for only 6% of funerals in 1999. When I'm gone I do not want to occupy any land. That should be reserved for the living. Look at any map of large cities in the USA and see how much of the space is occupied by cemeteries. It can be considerable. When I'm gone, just light a match.

WORLD'S GREATEST MATHEMATICAL CALCULATOR

Bernard Cohen, an esteemed historian of science at Harvard, in his new book *Portrait of a Computer Pioneer*, outlines the role of Howard Hathaway Aiken and IBM in developing the first computer, or Mark 1 as it was called by IBM, or "automatic brain" as it was called by some members of the press (51). Aiken was a graduate student in physics in 1936, studying the fundamental principles of vacuum tubes. His thesis largely depended on the solution of a set of nonlinear differential equations. Numeric solutions were found by defining a sequence of calculations based on certain equations and then repeating those calculations many

times on a series of closely spaced numbers, generating an increasingly good approximation of the answer. Because of the tedious error-prone calculations by hand, he began to talk about assembling a collection of commercial desk calculators and creating a system to do all sequences of calculations automatically. Although he completed his thesis by finding a closed-form solution to the equations, he was captivated by the idea of large-scale mechanical computing. This was not considered serious scholarship by some, and indeed Harvard's president, James Bryant Conant, indicated to Aiken that "if he persisted in devoting all his time and energy to computing rather than to research in electronics, there would be no future for him at Harvard."

Undaunted, Aiken took his idea to manufacturers of commercial calculators. He persuaded IBM and its founder/president, Thomas J. Watson, Sr., to develop the machine. IBM's role was to transfer Aiken's abstract computations into an instrument that would perform the operations. IBM engineers invented the machine that could perform the operations Aiken desired. The machine was dedicated on August 7, 1944, at a ceremony at Harvard. Aiken later created the first degree program in computer science, trained many influential students, and was a pioneer of government-sponsored scientific research, having persuaded the navy to finance his research at Harvard after the war.

TIM BERNERS-LEE AND THE WORLD WIDE WEB

The inventor of the World Wide Web, Tim Berners-Lee, has been compared with Johannes Gutenberg, who invented the printing press, which in turn changed religion, government, and science (52). The Web does all that and more. Berners-Lee, who never courted fame and never sought fortune from his invention, has just written *Weaving the Web*, his first book, which chronicles the development of the software he called "Enquire Within About Everything," the first ideas and technology needed to create the Web. The book is essentially the story of the Web. Berners-Lee coauthors the book with Michael Dertouzos, the director of the Massachusetts Institute of Technology Laboratory for Computer Science. Berners-Lee wrote Enquire at CERN in Geneva to help him keep track of the web of relationships between people, experiments, and machines at the gigantic lab. Enquire at first only worked inside his computer, but Berners-Lee saw the potential for using the Net, which already existed, to connect all computers. That way, Enquire could lead people to information wherever it resided.

The book ends by a description of where the Web might go from here. Berners-Lee thinks there is so much further to go. He wants the Web to become an open, collaborative environment where people anywhere can work together on the same thing at the same time. He thinks the Web can become smarter, so machines do more of the work for people—an automated Web. His real job recently has been director of the World Wide Web Consortium, the closest thing to a governing body for the Internet.

PORTRAIT PAINTERS AND LEFT-HANDEDNESS

Two studies of famous portraits each point out that most prominent portrait painters for the past 500 years have favored the left side of the subject's face, and the subject's eye is placed almost exactly on the canvas' center line (53). Leonardo da Vinci, the scientist and painter of the *Mona Lisa*, was left-handed,

and so were Holbein, Raphael, Picasso, and Rembrandt. And each painted the left side of their subjects' faces. Most of Rembrandt's 57 self-portraits show the right cheek turned, but he used a mirror, and like the others turned his left cheek to the mirror so when he painted the mirror image left was right. One study of 361 portraits showed the left side of a man's face nearly 60% of the time and the left side of a woman's face nearly 80% of the time. Also, most subjects posing for a painting, when unprompted by the painter, also show the left side of their face rather than the right.

NEW EDITOR OF JAMA

JAMA named a new editor on October 8, 1999—the first woman and the first pediatrician in its 116-year history (54, 55). She is Dr. Catherine D. DeAngelis, 59, who worked for 4 years as a nurse before going to college and then to medical school. Dr. DeAngelis will leave her post as a vice dean at Johns Hopkins University School of Medicine in Baltimore and will step down as editor of the *Archives of Pediatrics and Adolescent Medicine*. As the 15th editor of JAMA, Dr. DeAngelis comes in as many scientific journals are under pressure to increase income for the professional societies and companies that own them. Not only will Dr. DeAngelis be the editor of JAMA but she will oversee the running of the American Medical Association's 11 scientific journals. The American Medical Association's journals bring in \$55 million of advertising a year, accounting for 25% of its annual budget. Income from publishing is now crucial to the American Medical Association because its membership has dropped from 45% to 34% of US physicians in the last 10 years.

ORGANIZATIONAL PHILOSOPHY OF PAUL "BEAR" BRYANT

On November 17, 1999, I spoke at a meeting in Tuscaloosa, Alabama, and while there learned about a football museum dedicated to Paul "Bear" Bryant, who coached for 50 years and until recently was the "winningest" college football coach of all time. He was admired and respected for the winning spirit and positive attitude he inspired and taught.

The museum visit allowed me to recall a meeting I organized and moderated at the Heart House of the American College of Cardiology in February 1978. One of the speakers was Dr. John Kirklin of Birmingham, Alabama. He is probably the best cardiovascular surgeon of the 20th century. He was invited to speak at the meeting, and I asked my son Charles to pick him up at the airport and bring him to my house, where we were having a dinner party for the faculty. Before Charles left, I told him that the 3 most prominent people in the state of Alabama were George Wallace, the governor; John Kirklin, the surgeon; and Paul "Bear" Bryant, the coach. On the ride to the house, Charles indicated to Dr. Kirklin that he understood that he and George Wallace were the 2 most prominent people in the state of Alabama. Dr. Kirklin shot back quickly, "You forgot 'Bear' Bryant."

When visiting the "Bear" Bryant Museum in Tuscaloosa, I saw on the wall of the gift shop a framed organizational philosophy of Paul "Bear" Bryant. I asked for a copy, and the following was "The Winning Formula" of "Bear" Bryant:

1) Always be totally loyal to the institution for which you work. If you don't have the best interest of the organization at heart or if you can't be loyal, you are in the wrong place.

2) Always be totally loyal to your staff. If you are, then they'll be loyal back. Remember loyalty and honesty are 2-way streets. If you are ever dishonest to members of the staff, you'll never regain their respect.

3) Don't worry about winning personality contests with your staff. You'd better worry about being respected. Anybody can be liked, a heck of a lot fewer respected.

4) Be aware of yes men. Generally, they are losers. Surround yourself with winners. Never forget people win. Get people who work for your organization because it means something to them. Most organizations get people who are interested in drawing a paycheck for their 40-hour week. Don't forget, those folks usually don't work but about 10 hours out of the 40 they are paid for. To be the best—if you want to be the best—get people who care about your institution, people who are proud to be associated with your organization. Get winning people.

5) Work hard. There is no substitute for hard work. None. If you work hard, the folks around you are going to work harder. If you drag into work late, what kind of impression is that going to leave on your fellow workers? If you leave early, what kind of impression is that going to leave?

6) Don't tolerate lazy people. They are losers. People who come to work and watch clocks and pass off responsibilities will only drag you and your organization down. I despise clock watchers. They don't want to be part of a winning situation. They won't roll up their sleeves when you need them to. If you have lazy people, get rid of them. Remember, it is easy to develop the bad habits of lazy people.

7) Have a plan, not only for the day, but for the week and the month and the year and 10 years from now. Anticipate. Plan. Anticipate every situation that could arise. Plan for every situation that could arise. Don't think second-by-second on what needs to be done. Have a plan. Follow the plan, and you'll be surprised how successful you can be. Most people don't plan. That's why it is easy to beat most folks.

8) Set goals. High goals for you and your organization. When your organization has a goal to shoot for, you can create teamwork, people working for a common good. Teamwork is imperative; don't forget that. People who are in it for their own good are individualists. They don't share the same heartbeat that makes a team so great. A great unit, whether it be football or any organization, shares the same heartbeat.

9) Learn from others. Ask questions. Be a good listener. Get a pulsebeat of what is going on around you.

10) Last. Never quit. It is the easiest cop-out in the world. Set a goal and don't quit until you attain it. When you do attain it, set another goal and don't quit until you reach it. Never quit.

THINGS WE CAN LEARN FROM A DOG

On Sunday, October 19, 1999, I gave a talk at a hunting preserve at Calloway Gardens, Georgia. On the wall at the hunting lodge was a list of "Things We Can Learn from a Dog." They are as follows: "Never pass up the opportunity to go for a joyride. Allow the experience of fresh air and the wind in your face to be pure ecstasy. When loved ones come home, always run to greet them. When it's in your best interest, practice obedience. Let others know when they've invaded your territory. Take naps and stretch before rising. Run, romp, and play daily. Eat with gusto

and enthusiasm. Be loyal. Never pretend to be something you're not. If what you want lies buried, dig until you find it. When someone is having a bad day, be silent, sit close by, and nuzzle them gently. Thrive on attention and let people touch you. Avoid biting when a simple growl will do. On hot days, drink lots of water and lay under a shady tree. When you're happy, dance around and wag your entire body. No matter how often you're scolded, don't pout. Run right back and make friends. Delight in the simple joy of a long walk." These canine recommendations look like good medicine to me.

AVOIDING CLICHÉS

About a month ago, I attended a conference that lasted a day and a half. During the conference I heard the phrase "moving forward" innumerable times. Walter Shapiro (56) has listed other clichés that have been overused and have lost their effectiveness. These might include the following: at this point in time; been there, done that; gay lifestyle; impact; politically correct; proactive; face time; growing the economy; our children; soccer moms; cutting edge; downsized; empower; liaising; prioritize; synergy; thinking outside the box; pushing the envelope; sharing (vs telling); issues (vs problems); the healing process; user friendly; and achieve closure.

"RESPONSIBLE CIGARETTE MANUFACTURER"

Ellen Goodman has written that her all-time favorite oxymoron has changed from "jumbo shrimp" to "responsible cigarette manufacturer" (57). That is the phrase that Philip Morris, the home of the Marlboro Man and the Virginia Slim, is using on its glitzy new Web page to buff up its corporate image and possibly its stock price. The cigarette companies have finally acknowledged the "overwhelming medical and scientific consensus that cigarette smoking causes cancer, heart disease, emphysema, and other serious diseases" and that smoking is "addictive as the term is most commonly used today." That might have been a breakthrough 35 years and millions of deaths ago but obviously not now.

With their reputation at an all-time low, the stock price at a yearly low, and the Department of Justice lawsuit pending and courtroom losses growing, the tobacco companies are on a public relations roll. Along with the Web site, Philip Morris is going to spend about \$100 million on an ad campaign to show the company as a good corporate citizen. There, on the new Web pages with their sites for quitting and for youth smoking prevention, is the new company label: "a responsible cigarette manufacturer." Brown & Williamson is now promoting itself as a "responsible company in a controversial industry." This is where the oxymoron meets the hypocrite. How does any company that admits its product causes cancer keep marketing it "responsibly"? When the makers of Tylenol or Perrier learned of trouble from their products, they immediately took them off the market. In contrast, the cigarette manufacturers now admit that their products cause cancer, and they sell them anyway. The \$100 million being used to promote the kinder, friendlier face of Philip Morris is a small fraction of the amount the company's using to sell cigarettes. While launching its new campaign, it also will launch a new ad blitz targeting women, especially minority women. Obviously, "the leopard has not changed its spots."

MANAGED CARE REFORM BILL

Key forces behind the recently passed managed care bill in the House (and earlier in the Senate) included 12 representatives in the House who were either physicians or dentists and a 7-year-old boy named Jimmy Adams (58). During the arguments for the health care reform bill, Jimmy sat quietly in one of the big leather chairs in front of the House chamber, swinging a pair of artificial legs. Occasionally, a lawmaker would bend down to shake his hand. But Jimmy doesn't have hands. Instead, Jimmy extended what was left after the operation he had to have after an HMO insisted his parents drive their desperately sick boy past 3 other hospitals to an emergency room at the other end of Atlanta for treatment. While they were making their way across town, Jimmy's heart stopped. Because of that HMO decision, he ended up with gangrene of both hands and both feet. The overwhelming passage of the HMO reform legislation was in part because of Jimmy and the 12 medical representatives in the House.

William Clifford Roberts, MD

1. Cone M. Birthrate declining worldwide. *Dallas Morning News*, October 12, 1999.
2. Puente M, Kasindorf M. The new face of America. *USA Today*, September 7, 1999.
3. Zuckerman MB. A nation divided. What to do about the ever widening gap between rich and poor? *U.S. News & World Report*, October 18, 1999.
4. Kleinert S. HOPE for cardiovascular disease prevention with ACE-inhibitor ramipril. *Heart Outcomes Prevention Evaluation. Lancet* 1999;354:841.
5. Cauchon D, Fields G, Watson T. "Unspeakable grief." *USA Today*, November 19, 1999.
6. Landauer M. Why bonfire is important to Aggies. *Dallas Morning News*, November 20, 1999.
7. Yardley J. Aggies, shaken by accident, cling to pride and tradition. *New York Times*, November 20, 1999.
8. Larson E. *Isaac's Storm: A Man, a Time, and the Deadliest Hurricane in History*. New York: Crown Publishers, 1999:323.
9. Bowles S. Getting point across for pedestrians. Cities installing high-tech safety devices. *USA Today*, October 19, 1999.
10. Fields G, Johnson K. Crime at lowest point in 32 years. *USA Today*, October 18, 1999.
11. Wire reports. Chamberlain was an imposing figure. *Dallas Morning News*, October 13, 1999.
12. DuPree D. Wilt leaves huge legacy. *USA Today*, October 13, 1999.
13. Lopresti M. Wilt's special life only lacked titles. *USA Today*, October 13, 1999.
14. Feinstein J. Stewart: One big name able to admit his faults. *USA Today*, October 29, 1999.
15. A footnote to medical history. *NIHAA Update*, summer 1999.
16. Weidensaul S. When a deadly virus takes flight, literally. *New York Times*, October 9, 1999.
17. Moshavi S. Japanese women slow to accept birth control pills. *Dallas Morning News*, October 31, 1999.
18. Beil L. Maternal death rates vary by race, study says. *Dallas Morning News*, October 31, 1999.
19. Horovitz B. Selling beautiful babies. *USA Today*, October 25, 1999.
20. Horovitz B. Man offering models' eggs shuts 11 erotic sites. *USA Today*, October 29, 1999.
21. Vergano D. Doctors reimplant ovary in woman. *USA Today*, November 1, 1999.
22. Vergano D. Men more fertile in sweater weather. *USA Today*, November 1, 1999.
23. Rubin R. Doctors' anatomy lessons. Diaphragm in favor with female physicians. *USA Today*, November 1, 1999.
24. Calle EE, Thun MJ, Petrelli JM, Rodriquez C, Heath CW Jr. Body-mass index and mortality in a prospective cohort of U.S. adults. *N Engl J Med* 1999; 341:1097-1105.
25. Williamson DF. The prevention of obesity. *N Engl J Med* 1999;341:1140-1141.
26. Beil L. Texas obesity rate soars to 20 percent. *Dallas Morning News*, October 27, 1999.
27. Carrns A, Hagerty JR. On a rainy night in Georgia, what can you do but eat? There are more obese people all over, but the peach state takes the cake. *Wall Street Journal*, October 29, 1999.
28. Kolata G. The fat war: hope amid the harm. *New York Times*, October 31, 1999.
29. Goetincx S. Why we're so fat: It's more than grandma's pies. *Atlanta Journal-Constitution*, November 7, 1999.
30. Meckler L, Stollburg SG. FDA wants trans fats listed on food labels. *Dallas Morning News*, November 13, 1999.
31. Hellmich N. Power of protein? *USA Today*, September 21, 1999.
32. Anonymous. High-protein meat diets may be fattening prices. *Dallas Morning News*, October 23, 1999.
33. O'Donnell J. Diet craze makes unlikely hot seller: Fried pig. *USA Today*, October 7, 1999.
34. Editors. Go figure. With the right strategy, you can sell anything to anybody. *US Airways Attaché*, October 1999.
35. Calories or life: A new choice? *AARP Bulletin*, October 1999.
36. Jacobson MF. Diet and disease: time to act. *Nutrition Action Healthletter*, December 1999.
37. Bynum R. CDC: Measles might be wiped out in U.S. *USA Today*, September 3, 1999.
38. Beil L. Cold medicine. Air conditioning changed the face of medical care. *Dallas Morning News*, November 4, 1999.
39. Hall M. Doctor held liable for fatal handwriting mix-up. *USA Today*, October 21, 1999.
40. Associated Press. Doctors signing on to e-prescribing. Technology could increase medication safety. *Dallas Morning News*, November 13, 1999.
41. Frantz D. Getting sick on the high seas: a question of accountability. *New York Times*, October 31, 1999.
42. Sharp D. On the watch in nursing homes. Coalition wants "granny cams" to protect elderly from neglect. *USA Today*, September 14, 1999.
43. Nursing home videos could hasten sorely needed reforms. *USA Today*, September 21, 1999.
44. DeRuvo-Keegan L. Cameras exploit patients. *USA Today*, September 21, 1999.
45. Gingrich N. Research. This is one area of federal budget that should increase. *Dallas Morning News*, October 1999.
46. Harris G. In new drug labs, "porches" and "huddle zones." Searching for breakthroughs, pharmaceuticals industry ignites a building boom. *Wall Street Journal*, October 6, 1999.
47. Carey AR, Lynn G. Leaders in 1998 patents. *USA Today*, February 4, 1999.
48. Editors. People of progress. *American Heritage*, November 1999.
49. Morello C. Houston (cough) . . . we have a problem (cough). *USA Today*, October 18, 1999.
50. Willing R. Funeral homes fight for life. *USA Today*, October 8, 1999.
51. Cohen IB. *Portrait of a Computer Pioneer*. Cambridge, Mass: MIT Press, 1999: 329.
52. Maney K. Inventor of Web weaves tale of its past, present, future. *USA Today*, October 20, 1999.
53. Gugliotta G. Studies indicate portrait painters have leftist leanings. *Dallas Morning News*, October 24, 1999.
54. Beil L. AMA names 1st female editor for journal. Johns Hopkins doctor to steer publication. *Dallas Morning News*, October 9, 1999.
55. Altman LK. Woman is named editor of A.M.A. Journal. *New York Times*, October 9, 1999.
56. Shapiro WA. Laundry list of clichés to avoid like the plague. *USA Today*, September 24, 1999.
57. Goodman E. Philip Morris coughs up a late confession. *Charlotte Observer*, October 16, 1999.
58. Kiely K. HMO reform owes life to doctors in the House. *USA Today*, October 8, 1999.