

Heart in Hand

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Getting What One Wants

*We all want what we can't have
in life. It's a natural thing.*

Woody Allen

Broadway Danny Rose

Why would someone want to do heart surgery? Many people think it is because heart surgeons are well paid. Another is that they are held in high regard. Heart surgery also provides its practitioners with a large measure of self-fulfillment. Having the ability to acquire and utilize the knowledge base, technical dexterity, and judgement necessary to do open heart surgery is very satisfying. Achieving the respect of one's cardiac surgical peers makes it even more satisfying. All of these reasons are based on the motive of self-interest—what I want and what's good for me.

There is another reason why people want to become heart surgeons, other types of physicians, or any other health care professional for that matter, like nurses, physical therapists, and pharmacists. This is a heartfelt, compassionate desire to help others who are in distress and in pain. But more of that later.

Living things, from single-cell organisms to surgeons, are guided principally by their own self-interest. People in my family like to be doctors. I am the third generation

to take up the practice of medicine. My maternal grandfather, Louis Hicks Williams, received his M.D. degree from Johns Hopkins in 1914, and my father, Donald Sr., from the University of Nebraska in 1938. Both were career Navy surgeons. I received my M.D. degree from Harvard in 1965. My daughter, Elizabeth, will be the fourth generation in our family to obtain the privilege to practice medicine. She is halfway through medical school and will receive her M.D. degree from Harvard in 2001.

Five thousand generations ago, about 100,000 years in the past, my ancestors, and yours too, most likely lived in East Africa and moved about in small isolated groups of hunter-gatherers. They weren't concerned with obtaining a medical degree. They spent their time looking for something to eat. Five hundred thousand generations ago, we humans shared a common ancestor with chimpanzees and gorillas.

Life arose on this planet about 3.5 to 4 billion years ago in the form of single-cell bacteria. When our solar system was formed—from the residue of an older star that exploded in this part of our Milky Way galaxy about six billion years ago—our planet happened to be just the right size to maintain a life-sustaining atmosphere. It has exactly the right amount of gravitational force, being 7,600 miles in diameter, to hold on to gases vented through volcanoes from the interior to its surface. This planet is just the right distance from the sun, which is 93 million miles away, to receive an optimal amount of energy so that water can remain in a liquid state and life can exist. (Mars, further away from the sun, is too cold to have an open body of unfrozen water; and Venus, which is closer, is too hot. The water on that planet is all steam.)

All life on earth, including we human beings, is derived from these microscopic bacteria. There are now some 10 to 50 million species living things on the planet, and bacteria, ancient as they are, continue to thrive. We cannot live without them. Bacteria are so ubiquitous—and necessary—that there are more than four *billion* of them in a person's stomach, and there are more than 100 billion bacteria in a spoonful of garden soil.

Bacteria are single-cell organisms. A *cell* is the basic structural unit that makes up all living things. Go below, or divide a cell and there is no life—only water, carbon-containing organic molecules, and salts. Essentially, cells are tiny membranous bags of

water that contain the molecular machinery of life. These membranous bags of water eat, move about, and produce offspring, and thus are considered to be alive.

Bacteria are *prokaryotes*—“pre-nucleus” cells. Two billion years after these cells spontaneously arose in the warm waters of planet Earth, they evolved into a more complex kind of cell, known as a *eukaryote*—a “true-nucleus” cell.

Biologists theorize that eukaryotes arose when a larger bacterium swallowed a smaller bacterium and the two bacteria then continued to live on together as one organism, mutually supporting one another. In time, measured not in months but in millions of years, the smaller bacterium eventually became the mitochondria of the newly evolved larger cell. Mitochondria are tiny factories inside the cell that convert oxygen and the breakdown products of food into chemically usable energy. Important evidence that supports this theory is the finding that mitochondria have their own, distinct DNA, which only the mother transmits to her offspring.

Bacteria excepted, all living things—amoebas, molds, plants, and animals—are composed exclusively of eukaryotic cells. These cells have a distinct, membrane-enclosed nucleus, like the yoke in an egg. The nucleus houses the cell’s genes, which are made up of DNA—deoxyribonucleic acid. (The DNA in a prokaryote floats freely in its cell, usually in a circular configuration.) Eukaryotes also contain other specialized structures that prokaryotes don’t have, like mitochondria and lysosomes, the cell’s trash compactor. The eukaryotes that make up our bodies—all 100 trillion of them—are very small, less than one-thousandth of an inch in diameter. Bacterial cells are much smaller than that.

Heart surgeons have to reckon with both of these kinds of cells on a daily basis. We repair an individual’s diseased heart by interrupting blood flow through the coronary arteries, the source of the heart’s nourishment, draining all the blood out of its chambers, and then quieting the heart’s cells with a special solution that we inject through the coronary arteries. To do this we place a clamp across the aorta just above the heart, preventing blood flow into its coronary arteries, and we drain all the blood out of the heart with tubes that are connected to the input ports of the heart lung machine. With the heart quiet and still, emptied of blood, the surgeon can open it up and replace a valve,

close an inborn hole in the heart, or precisely sew a new bypass graft onto a one-tenth of an inch wide, blocked coronary artery on the surface of the heart without it moving and messing up the anastomosis.

Eukaryotic human heart muscle cells can survive for up to twenty minutes without oxygen at a normal temperature of 98.6 degrees Fahrenheit. The heart surgeon buys further time by cooling and relaxing the cells that constitute the heart's muscular walls with a special solution. The surgeon injects this solution, made up of potassium-enriched cold blood, into the coronary arteries. It greatly reduces heart cells' oxygen demand and will keep them alive for up to two hours or more in their arrested state.

Cells have a protective membrane coat through which they ingest energy-containing molecules and various substances, including oxygen, to maintain their living state. An assortment of chemical pumps in the cell's semiporous membrane coat pump such chemicals as potassium, sodium, and calcium into or out of the cell. The membrane coat of a cell that is on the verge of death becomes more porous. The pumps stop functioning, the cell loses some of its high concentration of potassium and becomes flooded with sodium and water. If oxygen-rich blood flow is restored soon enough, membrane integrity and cellular function and composition return to normal. If not, the cell ruptures and dies. Until better methods were developed for protecting heart muscle cells during surgery, heart surgery was a race against the clock. Cells need constant nourishment to maintain their living state, except in unusual circumstances like heart surgery where special measures are taken to temporarily protect them in a relaxed state.

Heart surgeons also have to contend with bacteria—prokaryotic cells. Allow bacteria to gain a foothold inside a patient's body, and these organisms fulfill *their* self-interest by feeding off the tissues of the patient. Serious infection and death can result. One of the most serious infections that can occur after heart surgery is bacterial endocarditis on a newly placed artificial heart valve. The bacteria grow and multiply around the valve, working it loose, which causes the heart to fail and the patient to need another operation to replace the infected valve. We give strong doses of intravenous antibiotics to kill bacteria that may contaminate the wound during surgery to prevent this terrible complication. These antibiotics also kill bacteria that normally reside in our

mouth and intestines. One side effect of heart surgery is that many patients lose their appetite for a time after surgery, until the bacteria that reside in the intestines grow back to a normal level.

We need bacteria in our intestines to help us digest our food. But if they gain access to our bloodstream or our surgical wounds they can cause great harm. Looked at from an evolutionary perspective, human beings are essentially walking communities of bacteria, which include those in our intestines *and* the cells that make up our bodies, since their ancestors were, in the distant past, free-living bacteria.

This is how the evolution of bacteria into humans occurred:

- *billion years ago* prokaryotic bacteria transformed themselves into a more complex eukaryotic cell.
- *1 billion years ago*, organisms composed of many eukaryotic cells—multicellular organisms—appeared.
- *500 million years ago* some of these multicellular creatures, including reptiles with newly evolved lungs, left the sea and started living on land.
- *200 million years ago* our mammalian ancestors evolved from reptiles.

The first mammals that evolved from reptiles were small rodent-like creatures. They lived an inconspicuous, nocturnal existence. The predators of these early mammals were giant reptiles—dinosaurs. Dinosaurs dominated the planet for more than 150 million years until they suddenly became extinct 66 million years ago. This resulted, we now know, from the impact of an asteroid that struck the earth with devastating effect. The entire world caught fire and more than 90 per cent of the world's forests burned. The impact this approximately six mile in diameter asteroid produced a blast of energy that was 20,000 to 100,000 times greater than that contained in the entire nuclear arsenal currently stockpiled on the planet. It caused a mass extinction that eradicated 75 to 80 percent of all living things that then existed on the planet.¹

The first mammals had genes that provided them with fur coats and the ability to internally control their body temperature. They were thus able to survive this mass

extinction and withstand the colder climatic conditions that ushered in the beginning of the present Cenozoic era.

Following the demise of the dinosaurs, with no formidable predators to contend with, except other mammals, mammals relatively quickly evolved into a wide variety of species. They colonized the sea in the form of whales, porpoises, and seals; they took to the air as bats; and on land they diversified into more than 4000 different species, including us. We can trace our line of descent directly back to the prosimian, which closely resembled modern-day tree shrews. They were one of the first primates—the order of mammals that includes monkeys, apes, and humans. Evolution by natural selection can bring about an astonishing variety of living entities, but it occurs over vast spans of time.

These extraordinary facts about our species' origins took on, for me, a vivid hue when I was hiking through the bottom of the Grand Canyon on rocks that are more than a billion and a half years old. I have now done this a number of times, compelled by some deep-seated need to keep going back there, taking weeklong backpacking trips from both the North and South rim with my wife, Linda, and other hiking companions through different parts of the canyon. One walks on rocks at the bottom of the canyon, thousands of feet below the rim, that were formed when the only life forms that existed on the planet were microscopic bacteria, and when the oxygen content of the atmosphere was only 1 percent instead of its current 21 percent.

Trying to drift off to sleep one night in my sleeping bag after a tiring ten-mile hike with a heavy backpack, which contained things like a compact stove and a canister of fuel to run it, freeze-dried food, maps, suntan lotion, insect repellent, a flashlight, first-aid material, extra clothing, etc., I kept being distracted by the sounds of deer mice rustling through our campsite looking for scraps of food. I started thinking about their rodent mammalian ancestors who lived under the thumb of the dinosaurs more than 100 million years ago and about those giant reptiles that thrived on the planet for more than 150 million years. Lying on an intricately constructed, collapsible air mattress in my high-tech, lightweight tent, I wondered how our species will ultimately fare compared to those adaptable and resourceful little deer mice scurrying about our campsite in the dark.

When the next mass extinction occurs on the planet, whether from another large asteroid impact, nuclear weapons, or some other cause, those little deer mice, like their rodent ancestors did 66 million years ago, will probably survive. Will we?

One of the stark facts of life is that all living things are obliged to try their luck in this planet's "casino of evolution," as the biologist Richard Dawkins phrases it, where the stakes waged are survival and reproductive success. Nature's casino is an indifferent, hard-hearted place, where the gamble for survival and reproductive success depends both on avoiding or besting one's predators and on being able to adapt to changing environmental conditions.²

Beginning with our earliest human ancestors in the transition from apes to humans, human beings that exist today are the product of 4,000,000 years of biological evolution. Fully evolved, biologically "modern" human beings existed in Africa 100,000 years ago, and they soon thereafter migrated to Europe and Asia, and then Indonesia and Australia/New Guinea; and much later, probably around 13,000 years ago, to North and then South America.

In the last 50,000 years of this four-million-year time frame, our species has also undergone a *cultural* evolution. Paleoanthropologists tell us that humankind began to develop the rudiments of symbolic culture somewhere between 50,000 and 100,000 years ago, beginning with the ability to speak a language. Human cultural evolution took off about 50,000 years ago. Using radiocarbon dating techniques at archeological sites in East Africa, Europe, and the Near East, this is about the time when humans began using increasingly standardized and complex stone and bone tools. They made jewelry—archeologists have found ostrich-shell beads that are more than 40,000 years old in Africa and Europe—and they created works of art which we still contemplate today, most notably the life-sized paintings of bulls and horses in the Lascaux Cave in France.

Compared to evolution on a biological time scale, our species' cultural evolution has occurred extremely rapidly. Indeed, it has occurred, in large part, over a 12,000-year time frame, from the end of the last ice age, when agriculture and animal husbandry began, to the present. In the Upper Paleolithic period, 40,000 to 12,000 years ago, human "culture" consisted of isolated groups of hunter-gatherers. They moved about and lived

on wild food—fish, hunted animals, wild fruits, nuts, seeds, roots, and tubers. The transition from hunting-gathering to food production occurred first in southwest Asia, in what is known as the Fertile Crescent (present day Iraq, Syria, and Jordan). It happened during a 3,000 year period from 9,000 BC to 6,000 BC. At the beginning of this period people subsisted on wild food. By 6,000 BC some people were living almost exclusively on crops and domesticated animals.

Now, 8,000 years later, there are a lot of additional things we culturally evolved human beings need, want, and desire. In addition to such things as *food, clothing, shelter, and adequate nurturing*, these include a need for *self-definition*. Humans obtain self-definition from the passive assignment, by birth, of such components as geographical home and family lineage, and also, by choice (to some degree at least), from a person's religion, political affiliation, career, and mate. We seek *sensual pleasures*, particularly from sex and mind-altering drugs, and *self-fulfillment*. We obtain self-fulfillment from our work; from relationships—with a significant other, friends, and colleagues, whose approval and respect we seek; from raising children and seeing them do well. We also obtain self-fulfillment from other sources: from sports, hobbies, intellectual endeavors, and various forms of play; and from helping others.

Some people are driven to obtain *possessions and wealth*. They desire wealth so that they will have enough money to pursue, without restriction, various sensual, intellectual, or aesthetic pleasures—and to feel financially secure. Some people want possessions for self-definition, others simply to have them. Other people desire *interpersonal recognition and power*. Such people are driven to achieve honors, rank, and fame; or to be a celebrity. Some want to exert control over other people's lives. And finally, some people seek *intellectual and aesthetic pleasures and insights*, such as readers like you who are reading this book. These needs, wants, and desires are fueled by self-interest.

Self-conscious, reflective human beings have other needs and wants as well. These include a desire not to die, and failing that to have a continued existence after death; and a need for faith, for a “faith state” that can combat a deep-seated sense of uneasiness that there is something wrong about us as we naturally stand, which will

enable us to make a connection to a higher power on a higher spiritual plane. Some depth psychologists say that we have, at an unconscious level, a nostalgia to return to our primeval existence in the depths of the sea. I will offer my thoughts about that later.

This is how Schopenhauer describes the motive of self-interest, as it is manifested in human beings:

The individual is filled with the unqualified desire of preserving his life, and of keeping it free from all pain, underwhich is included all want and privation. He wishes to have the greatest possible amount of pleasurable existence and every gratification that he is capable of appreciating; indeed, he attempts, if possible, to evolve fresh capacities for enjoyment.

He adds:

Egoism [one's self-interest] is a huge giant overtopping the world. If each person were allowed to choose between his own destruction and that of the rest of mankind, I need not say what the decision would be in most cases. Thus it is that every human unit makes himself the center of the world, which he views exclusively from that standpoint. Whatever occurs, even, for instance, the most sweeping changes in the destinies of nations, he brings into relation first and foremost with his own interests, which, however slightly and indirectly they may be affected, he is sure to think of before anything else.³

Tina, a character in Woody Allen's film *Broadway Danny Rose*, gives this view of how the motive of self-interest best operates in our species:

You know what my philosophy of life is? It's over quick, so have a good time. You see what you want, go for it. Don't pay any attention to anybody else. And do it to the other guy first, 'cause if you don't, he'll do it to you.

Taken aback, Danny replies, "This sounds like the screenplay to *Murder Incorporated*." Danny tells Tina that this view of life is a stark contrast to his Uncle Sidney's philosophy of life, which embraces "acceptance, forgiveness, and love." Some people aggressively pursue what they want; others are more restrained and forgiving.

According to the International Programs Center of the U. S. Bureau of the Census, on August 1, 1998 there were 5,933,134,189 people living on the planet, of which 270

million live in the United States. Each one of these 5.9 billion people has his or her self-interest foremost at hand, and we must compete with each other for the things that we want. There is also a vast number of species of other living things on the planet that strive to fulfill their basic needs and wants. Some of them compete directly with us for various food sources, like the insects and pests that infest our orchards. Other small creatures, such as mosquitoes, invade our bodies for their nourishment, and various microscopic bacterial, viral, fungal, and parasitic pathogens inhabit and feast on our tissues. But we humans do real well in this carnival of life. We eat a great variety of animals, from other mammals to insects, including fish, birds, reptiles, amphibians, mollusks, and crustaceans. The Kentucky Fried Chicken fast food chain of restaurants, for example, kills and cooks more than 900,000 chickens each day. And we burn vast areas of tropical rain forests, killing countless numbers of living things.

In Allen's *Love and Death* Boris and Sonia have this conversation:

Sonia: Boris, look at this leaf. Isn't it perfect? And this one, look. Ah yeah.

Yes. I definitely think that this is the best of all possible worlds.... Isn't Nature incredible?

Boris: To me, Nature is, I don't know, spiders and bugs. And big fish eating little fish, and plants eating plants, and animals eating—Its like an enormous restaurant, that's the way I see it.

Schopenhauer points out, in his book *On the Will in Nature*, how animals are optimally constructed to fulfill their will to live. A pelican has a huge pouch under its beak where it can pack and store the fish that it catches. Owls have enormous pupils that enable them to see better in the dark and soft feathers to make their flight noiseless so that they can fall unawares upon their sleeping prey.

There certainly is a conspicuous predatory aspect to life. In nature's giant restaurant living things pursue their will to live at the expense of and generally without regard for other living things.

A snake wrapped in a circle eating its own tail is an ancient symbol of life. Being in essence a traveling alimentary canal, the snake symbolizes the primary function of life, which is eating. Furthermore, by periodically shedding its skin the snake symbolically

throws off death and is reborn, just as life sheds one generation of living things and is reborn in the succeeding generation of a given species. In his book *The Origins and History of Consciousness*, Eric Neumann says that the symbol of a snake wrapped in a circle eating its own tail, known as an *Ouroboros*, reaches down into the furthest depths of the human psyche and represents both an image of self-procreating primal gods and the union of masculine and feminine opposites.

Natural selection is the mechanism by which life sheds one generation of living things for another. The concept of evolution by natural selection, proposed by Charles Darwin in *On the Origin of the Species by Means of Natural Selection*, published in 1859, is now well accepted. The evidence in support of this mechanism guiding our species' origins is overwhelming, the arguments of creationists notwithstanding.

Darwin's contemporary Herbert Spencer coined the phrase "survival of the fittest" to explain this concept. Now that we know more about the biology of living things than Darwin and Spencer did in their day it would be more accurate to say "survival of the fittest *genes*." What is selected, and survives, is the gene pool of a particular species. The most adaptable genes are the fittest genes, and they survive by making copies of themselves that are perpetuated in future generations of individuals in the species. In plants and animals and more complex single-cell organisms, like amoebas and yeast, copies of genes are mixed sexually and then transmitted to their offspring. In less complex single-cell bacteria copies of genes are cloned. It is changes in the environment—in climate, in the availability of food, the arrival of new predators—which genes must adapt to. Selection of the fittest genes is "natural" because it is nature—the environment—that does the selecting.

Assuming one's needs for food, clothing, shelter, and adequate nurturing are met, Aristippus, in ancient Greece, said that the pursuit of pleasure should be the primary goal of life. From his point of view, and that of the school of philosophy he founded, there are two fundamental driving forces that guide the behavior of all creatures. These are the pursuit of pleasure and the avoidance of pain. Life is short, and one should simply seek enjoyment and pleasure in life, according to Aristippus.

Tina's philosophy of life as espoused in *Broadway Danny Rose* is to "have a good time." Tony, in Allen's *Stardust Memories*, has this to say about the matter over lunch with his friend Sandy:

You set things up so you can play a little golf, get a little poon. You smoke some good grass, and that's what life's all about, you know?

Most people, ascetics excepted, seek sensual pleasure. And the two kinds of sensual pleasures that human beings particularly desire come from sex and drugs. Having treated a lot of heroin addicts in New York City when I was an intern and resident at Roosevelt Hospital (which Woody Allen used for a scene in his film *Broadway Danny Rose*) and seen what large doses of cocaine can do to a person's cardiovascular system, I offer you here my assessment of drugs.

Drugs provide two contrasting mind-altering effects. One is an *energizing high*, a euphoric state of mind marked by feelings of confidence and elation. We obtain this kind of high from stimulants such as caffeine, nicotine, amphetamines, and cocaine. The other is a *mellow high*, a relaxed state of mind where anxieties are temporarily relieved and inhibitions are loosened. We obtain this kind of "high" from chemical depressants such as alcohol, diazepam (Valium), and heroin.

While the typical boisterous drunk might suggest otherwise, alcohol has a depressant effect on the brain. Small to moderate amounts can make a person feel relaxed, happy, and at ease; and in the right setting it can also bring about a loss of inhibitions. The seeming stimulatory effect of alcohol in people who become noisy and boisterous after a few drinks is actually a result of its depressant effect on the inhibitory control mechanisms of the brain. With increasingly larger amounts, brain function steadily deteriorates, resulting in a loss of coordination; a loss of judgement; unsteady gait; slurred speech; and the outpouring of repressed emotions, such as feelings of hostility, aggression, sorrow, or remorse. Signs of drunkenness are apparent in most people when the blood alcohol concentration reaches 0.10 per cent, and most people will have lost consciousness and be difficult to arouse when it reaches 0.4 per cent.

Some mind-altering drugs, like marijuana, have both depressant and stimulant properties. Some drugs, like LSD, have hallucinogenic effects.

Humans use mind-altering drugs for a variety of reasons, all of which are related to either the energizing or mellow highs that drugs can give. These include:

- dulling one's consciousness
- combating depression and boredom
- promoting and enhance social interactions
- improving physical performance
- stimulating artistic creativity
- expanding one's consciousness

Our species, it turns out, is not unique in seeking sensual pleasures from drugs. Other animals also use intoxicating, mind-altering drugs. For example, koalas get hooked on eucalyptus, and grasshoppers set high-jumping records after munching marijuana. Yellow ants develop a consuming mania for the intoxicating secretion of the *Lomechusa* beetle, to the point that, with increasing consumption, they hoard the larvae of this beetle and guard it more zealously than they guard their own young, a compulsion that is seen in humankind in cocaine or heroin addicts.

Some mind-altering drugs in our culture, of course, are legal and freely available, such as alcohol, caffeine, and nicotine. Some require a doctor's prescription, and others—the ones that give the highest highs—are illegal, principally marijuana, cocaine, and heroin. I believe that all mind-altering drugs, cocaine and heroin included, should be legalized. Just as prohibition of alcohol in the 1920s and early 30s failed, with the unintended consequence of establishing a strong foothold for organized crime, so too making marijuana, cocaine, and heroin illegal is just as bad, if not worse, particularly with the new asset forfeiture laws that allow law enforcement officials to seize, without due process, the property of people who choose to use these drugs. Making these drugs illegal has not only further strengthened the widespread influence of organized crime in

our society, but, given the vast amounts of money and payoffs involved, it has also led to widespread corruption in government.

Alcohol is our most widely used potent mind-altering drug (caffeine is more widely used but is not nearly as potent). Human beings have consumed alcohol for thousands of years. It is even mentioned in the first chapter of the Bible. In Genesis 9: 20, we learn that Noah has a vineyard and makes wine, and he is found lying in his tent naked and drunk. The Babylonians were obliged, 3,600 years ago, to issue regulations, in the Code of Hammurabi, to control their drinking houses. Indeed, some cultural historians believe that our species' desire for beer, made from the grain of barley, may have played a pivotal role in the development of agriculture, which initiated our species' greatly accelerated cultural evolution. The importance of alcohol in the life of human beings is reflected in myths by the god Dionysus, the son of Zeus and the god of wine. Dionysus was considered to be a supreme deity. He was celebrated in ancient Greece and Rome with large-scale drunken festivals—the Dionysia and Bacchanalia respectively, precursors to our modern-day Mardi Gras. More than 170 million people in the United States, 70 percent of all adults, drink alcohol.

Yeast, a type of single-cell eukaryote, make alcohol. From a broader biological perspective, it is interesting to note that yeast get what *they* want by feeding on grapes and barley. They extract the chemical energy in the sugars of these plants by fermentation, a metabolic process that does not require or use oxygen. The chemical process of fermentation produces alcohol and carbon dioxide as byproducts. The cells of most other living things extract chemical energy from food through a chemical process, termed *oxidative phosphorylation*, that uses oxygen.

Plants produce a wide variety of mind-altering drugs, which include caffeine, nicotine, cocaine, opium, and marijuana. These drugs cause chemical changes at the junctions between nerve cells deep within the brain. Opium is a milky juice that is obtained from the unripe seedpods of the poppy plant, which grows naturally throughout southern Europe and western Asia. Heroin is a potent (semisynthetic) derivative of opium. The Sumerians discovered opium more than 7000 years ago. Nomads in Ethiopia found caffeine in the beans of a tropical evergreen shrub thousands of years ago.

New World Indians found nicotine in the leaves of tobacco plants and cocaine in coca plants indigenous to the eastern slopes of the Andes, and the Chinese found marijuana in the hemp plant. All of these plant-produced drugs are what neurobiologists call messenger molecules. These molecules give our brain cells—cells that evolved from the very same ancient bacteria as did the plant cells that make them—a pleasing effect.⁴

There is no doubt that the human desire for sensual pleasures from drugs is an important fact of life. Unfortunately, this compelling desire can produce several adverse consequences. Schopenhauer points out that a concerted pursuit of sensual pleasure leads to a fate worse than having had no “poon” or good “grass” at all, namely *boredom*. He writes:

Oysters and champagne are the acme of his [or her] existence, and the purpose of his life is to procure for himself everything that contributes to bodily welfare. He is happy enough when this causes him a lot of trouble. For if those good things are heaped on him in advance, he will inevitably lapse into boredom against which all possible means are tried, such as dancing, the theatre, society, card-playing, games of chance, horses, women, drinking, travelling, and so on.

People who do not have to work for a living, and have all the money they need to do whatever they want, and to gratify their every desire, wind up being bored. They succumb to boredom. Wealthy people who have little interest in intellectual pursuits, or in the arts, are especially prone to this unpleasant state. Schopenhauer has this to say about such people:

As soon as want and suffering give man a relaxation, boredom is at once so near that he necessarily requires diversion and amusement. The striving after existence is what occupies all living things, and keeps them in motion. When existence is assured to them, they do not know what to do with it. Therefore the second thing that sets them in motion is the effort to get rid of the burden of existence, to make it no longer felt, “to kill time,” in other words, to escape from boredom. Just as need and want are the constant scourge of the people, so is boredom that of the world of fashion.

Sensual desires are satisfied in sequence, one after the other. Joseph Brodsky explains that boredom is a product of repetition. The repetition of satisfied pleasures

over and over again, again and again, eventually produces boredom. Brodsky, in his 1989 commencement address at Dartmouth College, said that, “nobody is as bored as the rich, for money buys time, and time is repetitive.” To the graduating students of this elite Ivy League school, he said:

Potential haves, you’ll be bored with your work, your friends, your spouses, your lovers, the view from your window, the furniture or wallpaper in your room, your thoughts, yourselves. Accordingly, you’ll try to devise ways of escape. Apart from the self-gratifying gadgets mentioned before, you may take up changing jobs, residence, company, country, climate; you may take up promiscuity, alcohol, travel, cooking lessons, drugs, psychoanalysis.

This Nobel laureate did not paint a pretty picture for these soon-to-graduate college students. His advice to them? Meet boredom head on, and wallow in it!⁵

Our species is the only one that possesses a conscious awareness of time. Children are prone to boredom, particularly children from well-to-do families. Older people, less so, perhaps because they are more acutely aware of their eventual mortality. The seven-year-old daughter of a wealthy friend of ours tells me that when she gets bored she plays with her dog. If that doesn’t work, and she is very bored, she says that she tries to go to sleep. My eleven-year-old son, Daniel, usually quite occupied in a variety of pursuits, including writing plays (he wants to become a screenplay writer like Woody Allen) starts complaining that he is bored after he has been playing video games for an hour or two. During the first hour he seems to be quite engrossed in it, but a rather dyspeptic look gradually begins to spread over his face and then, usually half way through the second hour, he says he is bored. The repetitiveness of the pleasure, for some people that is, of playing video games wears thin after awhile, and the child sinks into a disagreeable state of boredom.

In my corner of the world we have what are known as the “Microsoft millionaires.” These are people in their mid-thirties who have become millionaires working at Microsoft, the mammoth software corporation. They have a grueling day-to-day work schedule and often have to work on weekends as well. Many retire early. The first thing some of them do after they retire is travel extensively. Tiring of that they build

a new house, or they do some volunteer work. Eventually, having bought all that leisure time with their millions and still, in their mid-thirties, relatively young, they find themselves sinking into a profound state of boredom.

There are other adverse consequences to the pursuit of pleasure, in addition to boredom. Another is the twin sequelae of tolerance and dependence.

Tolerance means that an individual requires increasingly larger doses of a drug—or an activity, like running—to achieve the desired effect. There is a gradually diminishing responsiveness, or sensitivity, to the effect of the drug, or activity. Another, more recently appreciated type of tolerance is this: even though the original dosage remains just as effective, users find themselves increasing the amount of drug consumed in order to get an even stronger effect—a higher “high.” Examples of these two types of tolerance are seen in alcoholics and cocaine users respectively. An alcoholic may have to consume three times as much alcohol to get the same intoxicating effect that he obtained when he first started drinking. A cocaine user winds up snorting more of it, or begins smoking or even injecting it, in order to achieve an ever more intense and euphoric high.

Dependence means that a person feels compelled to take a particular drug—or engage in potentially addictive activities like gambling, “womanizing,” or long distance running—even when it begins to produce less and less pleasure and brings on adverse consequences. Such consequences include two major ones: 1) a deterioration in one’s physical or mental health, and 2) impairment in one’s ability to work and to maintain close interpersonal relationships. *Addiction* is dependence carried to its most self-destructive degree. That is, addiction is an extreme form of dependence.

Schopenhauer points out that the three greatest blessings of life are *health*, *youth*, and *freedom*. And most people do not fully appreciate these blessings until they lose them. With regard to health, Schopenhauer writes:

In general, nine-tenths of our happiness depends on health alone. With it everything becomes a source of pleasure, whereas without it nothing, whatever it may be, can be enjoyed. And even the other subjective blessings, such as mental qualities, disposition, and temperament, are depressed and dwarfed by ill-health... From this it follows that the greatest of all follies is to sacrifice our

health for whatever it may be, for gain, profit, promotion, learning, or fame, not to mention sensual and other fleeting pleasures; rather should we give first place to health.

Perversely, drugs that provide the most intense pleasure are also the most addictive and dangerous to one's health. Heroin gives an intensely satisfying, mellow high, but it has a high potential for addiction. Studies show that 95 per cent of people who use heroin will consume this drug daily, if it is readily available, in doses that are damaging to their health. Cocaine may be more dangerous even than heroin. Monkeys trained to obtain injections of various mind-altering drugs by pressing a lever will press the lever more than ten thousand times to get a single injection of cocaine. When the animal is able to obtain unlimited amounts of this drug they soon die from a self-administered overdose. With heroin, the animal will gradually raise the dose and self-administer this drug at a steady rate that avoids both gross toxicity and withdrawal symptoms.

Nicotine is highly addictive, like cocaine. This drug, obtained by smoking tobacco, is responsible for more than 500,000 deaths in the United States each year—from coronary artery disease, lung cancer, and emphysema. This number of deaths far surpasses those resulting from the use of all other psychotropic drugs combined. I have had patients come back for a second coronary bypass operation because they could not bring themselves to stop smoking, even after undergoing heart surgery to treat the ravages of this addiction. Most of my patients, however, are able to stop smoking after their surgery. I tell them that when they get an urge to light up six weeks, six months, even sometimes six years later, they should first stand in front of a mirror, open their shirt or blouse and look at the scar down the front of their chest. Then they should ask themselves this question: Do I want to have this scar opened and undergo another heart operation to replace the rusted out bypass grafts that will result from my starting to smoke again? Most resist the temptation and the urge passes. I also point out to them that by smoking a cigarette a person gives up one's will to be well for the momentary gratification that the cigarette, with its bolus of nicotine, can give. Many people who have had to undergo coronary bypass surgery because of their coronary prone life style and nicotine addiction appreciate well Schopenhauer's admonition about the importance

of health, and they make concerted efforts to maintain their restored health after their surgery.

Alcohol also has a high abuse potential. Approximately ten percent of people who drink alcohol consume daily amounts that are damaging to their health, and to the society they live in. An estimated 17 million people in the United States are either confirmed alcoholics or problem drinkers. Daily use of this drug in relatively high doses can adversely affect multiple organs in the body, resulting in cirrhosis of the liver, chronic pancreatitis, cardiomyopathy, and a type of brain disease known as Korsakoff's psychosis. If you have not seen a person suffer delirium tremens from alcohol withdrawal (the DTs), as I have over the years in my medical practice, I can assure you that it is a pretty awful sight.

We use mind-altering drugs not only to dull our consciousness, but also to *expand* our consciousness. In his book *The Varieties of Religious Experience*, William James (1842-1910), the American psychologist and philosopher of religion writes:

The sway of alcohol over mankind is unquestionably due to its power to stimulate the mystical faculties of human nature, usually crushed to earth by the cold facts and dry criticisms of the sober hour. Sobriety diminishes, discriminates, and says no; drunkenness expands, unites, and says yes... Not through mere perversity do men run after it. To the poor and the unlettered it stands in the place of symphony concerts and of literature; and it is part of the deeper mystery and tragedy of life that whiffs and gleams of something that we immediately recognize as excellent should be vouchsafed to so many of us only in the fleeting earlier phases of what in its totality is so degrading a poisoning.

The untoward consequences of tolerance and dependence apply not only to the use of drugs, but also to other human endeavors as well. These include such things as enjoying fine foods, sexual conquests, gambling, exaggerated physical exercise, the acquisition of possessions and wealth, and the need for interpersonal recognition. I have known heart surgeons, for example, who just want to operate, continuously, to the exclusion of other things, including their family life, until an overpowering need for sleep forces them to take a break. Unfortunately, in a self-interested desire to get what we want humans tend to transform activities that initially give us pleasure into compulsive

behavior, which then become a burden and an obligation. We keep doing it even when we no longer enjoy it. In a chapter titled, “On the Vanity and Suffering of Life,” in *The World as Will and Representation*, Schopenhauer writes:

Every satisfied desire gives birth to a new one... In proportion as enjoyments and pleasures increase, susceptibility to them decreases; that to which we are accustomed is no longer felt as a pleasure.

Those people, for example, who make the enjoyment of fine foods a central goal in their lives are prone to gluttony. People who compulsively engage in one sexual encounter after another can be viewed as addicts of a sort. For some people, gambling becomes a self-destructive, compulsive form of behavior. Others become addicted to exaggerated types of exercise, such as long-distance running or bicycling, to the point that they neglect their families and their work and damage their bones and joints in pursuit of the endorphin-induced high that these activities can provide. Likewise, some people are compulsively driven to amass ever-greater amounts of possessions and wealth.

Regarding this endeavor, Schopenhauer writes:

Riches are like seawater, the more you drink the thirstier you become.

Schopenhauer also makes this comment about people that strive after wealth:

[They] work from morning to night as industriously as ants and in restless activity to increase the wealth they already have... If their luck has been good, then as a result they have at the end of their lives a really large amount of money, which they now leave to their heirs to increase still further or to squander. Such a life, though pursued with a very serious air of importance, is therefore just as foolish as is many another that had for its symbol a fool’s cap.

We can take some comfort, at least, from this fact: Addiction to drugs, to sex, or to any other activity is not an irreversible disease. Addiction is a reversible behavior disorder, not an irreversible disease, as some would have us believe. Alcoholics, compulsive gamblers, and sexual addicts must all be held accountable for their actions. They cannot be absolved for activity that encroaches on other persons or their property

simply because they have a “disease.” Stanton Peele corroborates this statement in an excellent article titled “Ain’t Misbehavin’: Addiction Has Become an All-Purpose Excuse,” in the July/August 1989 issue of *The Sciences*. During the Vietnam, for example, a relatively high percentage of the American servicemen who fought there became addicted to heroin. The numbing, mellow high produced by this drug ideally suited the needs of these soldiers who were helplessly thrust into an unpopular war far away from their family and friends, and who lived with an incessant fear of being killed in a sudden, unpredictable guerrilla attack. A potent form of heroin was readily available in Vietnam, and it was relatively cheap. But when these heroin-using soldiers returned home only a small percentage of them, less than five percent, remained addicted to this drug. Back home, in a different social setting, the vast majority of them walked away from that drug and never looked back. As this example makes clear, dependence and addiction are not simply a biological phenomenon; there is an important psychosocial component as well.

The pursuit of pleasure—as does a compulsion to acquire possessions and wealth, and interpersonal recognition and power over others—has another downside, in addition to the first two already mentioned. The third adverse consequence of a self-interested pursuit of these things is this: we fall prey to *deception* and *pretense*.

We practice both deception and pretense without giving it a second thought in order to get what we want. If a man wants to have sex with a new date, for example, rather than simply ask her to go to bed with him he will be more acceptably and appropriately devious. He will say something like “let’s go over to my place,” and then, perhaps, “let’s have some wine and go sit in the hot tub [nude, of course; that goes without saying since she obviously didn’t bring a bathing suit along for a dinner date].” If the woman is so disposed, she will agree, simulating innocence but knowing all the while his true intentions. And if all goes well, they soon will be copulating in the bedroom.

In Woody Allen’s *Play It Again Sam*, Allan brings Linda to his apartment for dinner and wants to seduce her, but he is uncertain about how to go about it and does not know what to say. Sitting next to her on a sofa, Humphrey Bogart appears behind them,

visible only to Allen, and gives him some advice. He tells him to say, "I have met a lot of dames but you are really something special." Allan thinks the line is too corny and argues with him about it, but finally says it to her, and he is surprised to find that it works. He exclaims privately to Bogart, "She bought it!" Sincerity and truth are expendable commodities when a human being, driven by self-interest, strives to get what he or she wants, particularly sensual pleasures from sex and drugs, possessions and wealth, and interpersonal recognition and power.

Pretense means the act of pretending, of presenting a false appearance, of being devious. It connotes an action that disguises or papers over a person's true feelings, beliefs, or intentions. Like an actor on the stage, humans use pretense and devious behavior to achieve at least three goals: to manipulate people in order to get what one wants, to avoid adverse consequences that may result from being honest and sincere, and to win acceptance and affection. Motivated by a fear of rejection, many of us go through life pretending to be something that we are not in an attempt to win acceptance and love. We are frightened to let our true selves, and what we really feel inside, show through for fear that we will be rejected. Rather than being straightforward, direct, and honest with others, and ourselves, we say what we think other people want to hear rather than what we really think and believe. Such behavior is seen most sadly in the person who, riddled with cancer, keeps smiling until the end of her life. When asked how she is doing, she replies, falsely, "Everything's great," keeping up the pretense that nothing is wrong. Indeed, such behavior may well be an important *cause* of disease, particularly cancer. More about that later.

Deception employs deceit. Deceit is the act of causing another person to believe what is not true. In our competitive world we often use deceit in our self-interested desire to get what we want. In short, we lie. Regarding this aspect of human behavior, Schopenhauer writes:

Just as our body is covered with clothes, so is our mind with *lies*. Our words, our actions, our whole nature are deceitful; and only through this veil can our true sentiments sometimes be guessed, just as the shape of the body is guessed through the clothes.

These are some of the reasons why people lie:

- To hide something that causes shame
- To evade responsibility
- To manipulate another person in order to get what one wants (such as the scam artist who cheats an old lady out of her life-savings)
- To attract attention
- To inflate one's importance (such as the politician who said that he had attended Oxford University when he had actually only been there as a tourist)

Manipulative charm is a valued asset in our culture—not only in our social life, but also in business and politics. We enjoy and even thrive on intrigue and deceit, as witnessed by our fascination with spies and the popularity of the kind of novels that are written by authors like John LeCarre and Robert Ludlum. (The names of these two authors are, appropriately enough, pseudonyms.) Politicians have their “hidden agendas” and spouses their extramarital affairs. Our social fabric is interwoven with deceit.

The inherently deceitful nature of our social fabric includes the commonly accepted social norm of politeness. Schopenhauer points out that *politeness*—having good manners and being indulgent with others according to social norms—is nothing more than a “piece of recognized hypocrisy.” He notes that it is both expected and commended because it conceals the more offensive, self-centered side of human nature. Politeness hides this aspect of our nature “just as people like to have repulsive objects hidden at least by a curtain.”

Politeness also has its manipulative aspects. My matriarchal great-grandmother, Mary Lyde Hicks Williams, would remind me, on our summer visits to her antebellum home in eastern North Carolina when I was a child, that “politeness is the key that opens all doors.”

She was a very special woman. Her father was captured in the Battle of Gettysburg, in a charge in which two-thirds of the North Carolina regiment he commanded was killed. He was released in a prisoner exchange and returned home

before the war ended. She was born in 1865, at the close of the Civil War. She studied art and became a portrait painter of some renown—she has 28 paintings titled “Plantation Scenes from Life” permanently housed in the North Carolina Museum of History in Raleigh. When her granddaughter, Charlotte (my mother), lost her mother at the age of eighteen months, Mary Lyde helped raise her. She had a large library in her home, where as a teenager I first encountered the works of Schopenhauer. She liked me, but repeatedly expressed the opinion—I never could tell whether she was serious or not with the straight-faced way she would say it—that, although I had a lot of potential and would eventually amount to something, as she put it, I needed to be sent to military school to learn some manners.

Doublespeak is a particularly pernicious kind of deceit that is widely practiced. *Doublespeak* employs inflated language, well-disguised euphemisms, obfuscating jargon and bureaucratic gobbledeygook. It pervades every aspect of our society, as evidenced by these examples: In the past, loans that were not paid were in default, but in order to look good, bankers and lending institutions now call them “nonperforming assets”—or they are “rolled over,” or “rescheduled.” People no longer go to jail, they are sent to a “correctional facility.” Used cars are “experienced cars,” or “pre-owned cars” and car mechanics are “automotive internists.” Doublespeak not only entails the use of such euphemisms and inflated language but also the use of bureaucratic gobbledeygook and jargon, such as an airline company calling the crash of one of its Boeing 727s an “involuntary conversion” on the financial balance sheet of its annual report. As is the case with lies, people use doublespeak for a variety of similar reasons: to mislead others, to avoid responsibility, and to make the bad seem good.⁶

Doublespeak is a favorite technique of deceit among politicians, who called the invasion of Grenada in the 1980s, for example, a “predawn vertical insertion,” term tax increases “revenue enhancement” or “tax reform.” More intrusive government regulation of health care is now known as “health care reform.” In its most socially and politically harmful form, doublespeak involves the use of language that is grossly deceptive, evasive, and confusing. Academic and professional people, particularly some physicians and sociologists, often employ doublespeak in their discourse to mystify the methods of

their particular discipline. They cloak relatively straightforward concepts with opaque words and use turgid prose in an effort to enhance their professional status.

Schopenhauer scathingly criticized his academic contemporaries, particularly Hegel, for doing this sort of thing in their philosophical discourses.

Allan Janik and Stephen Toulmin, in *Wittgenstein's Vienna*, point out another adverse consequence of this kind of deceit. They write:

Nowadays as much as in the years [in Vienna] before 1914, political dishonesty and deviousness quickly find expression in debased language, which blunts the sensitivity of the political agent himself to the character of his own actions and policies. So the intention to deceive others ends by generating self-deceit.⁷

Deception and pretense are fairly modern concepts. While deception has been practiced by humans—and other species of living things as well—for thousands of years, as Homer's *Iliad* and *Odyssey* attest, the “concept” of deception coupled with a new sensitivity to human deceit was first brought into clear focus by Machiavelli 500 years ago and then by Shakespeare. If we were living in the Middle Ages I would not be writing this book, and all of us would be viewing ourselves in an entirely different light.

To begin with, in the Middle Ages most people did not question their station in life. In the West their mindset was shaped by Saint Augustine's dictum, written four centuries after the birth of Christ, that God had assigned each person a fixed place in the community. It was a world of visions—of apparitions and dream messages from the dead—where the ultimate logic of existence was to be found in unquestioned religious truths. The average person in this era (before 1500 AD) lacked a substantial sense of an inner self, of having an identity separate from their social rank and status. Each individual was considered to be a link in the “great chain of being,” more a “We” than an “I.” This is why there is a remarkable scarcity of autobiographical writing in the historical record of our species up until quite recently. People had little if any privacy; it was not something one desired. As one cultural historian notes in regard to this period in human history, “nobody was ever left alone.”

By 1500 the political influence and intellectual control of the church had begun to wane, and the European feudal order was beginning to break up. Social mobility increased, along with increasing urbanization and the growth of a middle class. These historical developments all helped to bring about a new level of human self-awareness.

Indeed, in the 16th century, as cultural historians have shown us, something like a mutation in human nature took place. The mutation in human nature that took place at this time involved the concept of *self*, and it is reflected in the fact that the words *self-interest* and *self-consciousness* were coined only relatively recently, in 1649 and 1690 respectively according to the Oxford English Dictionary. People began to place increasing emphasis on the dichotomy between an individual's *true inner self*, with its underlying motives, and one's *observable outer self*. Machiavelli and Shakespeare were two key observers of the human condition who recognized and described how one's outward appearance can be misleading. Thus arose the concept of *sincerity*. To be sincere simply means that one's observable self and one's hidden, true self are an undivided, single entity. A person is sincere when his outward appearance and behavior are an honest and genuine reflection of his true thoughts, intentions, and feelings. As a good friend of mine, a retired diplomat, put it, referring to sincerity as it is practiced in American politics: "In life it is absolutely essential to be sincere, even if you have to fake it."⁸

Along with the increasing importance of sincerity in human affairs, people began to focus on its close cousin *integrity*.

My brother, Rody, is a social psychologist. His main area of study is on embarrassment, and he has written two books on this subject. In order to be embarrassed one must have a strong sense of self.⁹

Woody Allen focuses on the human characteristics of sincerity, integrity, and sense of self in his screenplays. He tells us, most importantly, that sincerity and integrity are absolute prerequisites if one wishes to attempt to fathom the true nature of life. Deceit, pretense, and devious behavior pose formidable obstacles to this endeavor. Zelig, in Allen's film of that name, recalls, under hypnosis, the following discussion with his Rabbi:

I'm twelve years old...I run into a synagogue...I ask the rabbi the meaning of life...He tells me the meaning of life...but he tells it to me in Hebrew...I don't understand Hebrew...Then he wants to charge me six hundred dollars for Hebrew lessons.

One path that people take to find happiness and meaning in life is via an overweening pursuit of pleasure. But following this path, instead, results in boredom, a loss of one's health, and the sacrifice of one's integrity. It is a wrong path to take for finding the true reality and meaning of life, or lasting happiness, for that matter. The pursuit of pleasure, as Sandy says in *Stardust Memories*, is "shallow." It lacks depth and insight. But if it is shallow and ultimately self-defeating, why do so many people make it the chief concern of their lives?

Lou Canova, the over-the-hill Italian nightclub singer in *Broadway Danny Rose*, is quite devious and deceitful in getting what *he* wants, notably, his girlfriend Tina (under the nose of his wife) and fame. When no other theatrical managers will handle him because of his drinking problem and his overbearing personality, Danny takes him on and works tirelessly to keep him sober and to help him make a comeback. When he starts to make it big, with an engagement at the Waldorf-Astoria and an important television contract in the offing, Lou decides to jettison Danny and go with a "big-gun" manager, one recommended to him by Tina. As they leave the Waldorf after a successful opening night show, Lou breaks the news to Danny that he is leaving him. Danny is shocked and stares at him in disbelief; whereupon Lou says, "Danny, naturally if anything comes out of this, you know you're gonna be in for a taste." Why, indeed, do people like Lou and Tina seem driven to obtain more sensual pleasures, possessions, and interpersonal recognition than other people? And why are some people much more devious, deceitful, and aggressive than others in getting what they want?

Schopenhauer believed that a person's character, or basic nature—manifested by one's temperament, disposition and personality—is inborn and unalterable. He believed that self-interest, malice, and compassion—in his view the three fundamental springs of human action— "are intrinsic to everyone in different and strangely unequal proportions." Some people, he said, are so self-centered and motivated by self-interest that they are not likely to sacrifice their interests to take vengeance on a foe or to help a friend. But another person, "whose nature is highly susceptible to malicious motives, will not shrink from doing great harm to himself, so only that he may injure his neighbor." In modern terms, Schopenhauer's view that a person's basic nature is innate

and ineradicable means that it is genetically programmed. More than a century before sociobiologists and other behavioral scientists recognized the importance of genetic influences on human behavior, Schopenhauer wrote:

It is possible to remodel what one does, but not what one *wills to do*... It is not possible to change the goal that the will strives after, but only the path expected to lead thither. Instruction may alter the selection of means, but not the choice of the ultimate object which the individual keeps before him in all he does; this is determined by his will in accordance with its original nature. It is true that the egoist may be brought to understand that, if he gives up certain small advantages, he will gain greater; and the malicious man may be taught that by injuring others he will injure himself still more. But Egoism [self-interest] itself, and Malice itself, will never be argued out of a person; as little as a cat can be talked out of her inclination for mice.

But we now know that a person's character and temperament are also influenced by environmental factors, to some degree at least. Behavioral scientists recognize that a person's character, temperament, personality, and behavior are derived from a complex interaction between *both* genetic influences and environmental experiences.

There is an ongoing debate among people who study these things whether our species is innately aggressive. Do human animals have a genetically programmed aggressive nature, a "beast within" us, as some call it? Or is aggressive behavior in our species mainly a response to various environmental factors that thwart the satisfaction of our needs and wants? In literature, the idea of a "beast within" is well drawn in Kurtz, the refined, artistic European intellectual in Joseph Conrad's *Heart of Darkness*. On a trip up the Congo River to collect ivory he becomes the godlike leader of a local tribe and regresses to a life of savagery and brutality. An optimistic assessment of the matter is that mentally healthy, well-loved human beings are not innately aggressive. From this perspective, aggressive behavior is a learned response generated by a variety of environmental factors, perhaps the most important being poor rearing conditions. Three other factors that promote aggressive behavior in otherwise healthy human beings are these: conflicts of interest; social disorganization; and envy, of another person's happiness, possessions and accomplishments.¹⁰

Most aggressive behavior is typified by Tina's motto, "Do it to the other guy first, 'cause if you don't, he'll do it to you." In most cases, aggressive behavior is not generated by malice, where one inflicts harm solely for the enjoyment of hurting someone. We are motivated principally by our own self-interest, which often comes into conflict with other people's self-interested desire to get what they want.

Thwarted desires and wants breed feelings of hostility and anger. In Allen's film *Interiors*, for example, Fredrick is given to writing scathing reviews of new books. His wife comments:

He's angry. He's teaching, when he really wants to be writing... Now he's taking his rage out in these critical pieces under the guise of high standards.

Also in this regard, Schopenhauer writes:

Ill will usually arises from the unavoidable collisions of Egoism [i.e., self-interest] which occur at every step... Everything that opposes the strivings of a person's Egoism awakens his dislike, his anger, his hate... If it were possible, he would like to possess everything for his own pleasure; as this is impossible, he wishes to at least control everything.

Perhaps the most crucial environmental factor that is related to aggressive behavior and the desire to possess and control everything is whether or not that person, as an infant and young child, received sufficient parental love and nurturing, particularly from one's mother, and in particular, *unconditional love*. Woody Allen provides us with a crucial insight regarding this important consideration. In *Broadway Danny Rose*, Danny says that Tina strives to have a good time and get what she wants, without hesitating to "do it" to the other guy first, because *she doesn't feel very good about herself*. Tina is quick to disagree and says, "Stop saying that. I like myself fine;" whereupon Danny replies, "Well, you know, I'm just saying down deep, I sense that you don't."

Allen's artistic insight on this subject, which is now being confirmed by behavioral scientists, can be summarized this way: People who make the pursuit of pleasure the chief concern of their lives and who are most given to deceitful, devious, and

aggressive behavior generally have a lack of self-esteem and consequently don't feel very good about themselves. Having to suffer through a loveless childhood is probably the most important factor that makes a person have a lack of self-esteem. A child needs a lot of nurturing and unconditional love from his or her mother during the first two to three years of life. As Thomas Verny points out in his book, *The Secret Life of the Unborn Child*, bonding between mother and child begins in the womb. He argues that a mother's thoughts and feelings can have an important impact on the emotional development of her unborn child. A mother's inability to provide enough love to her child may well be due to the fact that she herself suffers from a lack of self-esteem, perhaps as a result of having been deprived of a requisite degree of nurturing and love from *her* mother. A person who has been deprived of such love tries to compensate for his resulting lack of self-worth by seeking pleasurable experiences, acquisitions, and achievements. Such people, in particular, are given to pretense. They say what they think a person wants to hear rather than what they really believe, fearing that they will be rejected if their true feelings are revealed.¹¹

In this regard, psychologists at New York University have carried out some fascinating studies with a technique they term "subliminal psychodynamic activation" to treat obesity and alcohol and nicotine dependency. Subliminal messages are flashed on a special machine so fast (at about one-thousandth of a second) that they do not register on the conscious mind, but they are nevertheless perceived outside the normal range of consciousness, as evidenced by brain-wave changes which indicate that the brain is responding to these messages. Subjects who received the subliminal message MOMMY AND I ARE ONE on the machine's screen had a statistically greater success rate in overcoming their addictive behavior than a comparable control group who received a neutral phrase PEOPLE ARE WALKING.

Our lives begin in the dark, warm, watery environment of our mother's womb. Our species has only relatively recently, in the evolution of life on this planet, emerged from life forms that spent their first three billion years on this planet in the watery environment of the planet's oceans. Our artists can best bring to light our deeply felt, unconscious knowledge of this fact. Kate Braverman describes this touching scene in her

novel *Palm Latitudes*, where Marta Ortega is sitting in her backyard terrace rocking her newly born daughter Angelina to sleep in her arms. She writes:

Angelina's weight numbed her arms. Marta Ortega felt her flesh transmuted in wood, links of a tree. She merged with her daughter, their grain identical. Her daughter's feet brushed against her torso like wings or feathers or fins as Angelina rocked her infant asleep, still part creature of the ocean, with memories cyclic, unmolested, liquid.

We are soon thrust out of our mother's womb, exposed, into a brightly-lit world that becomes increasingly complex as we grow older. This aspect of life is movingly portrayed in the film *Round Midnight*, where Dale Turner, a famous jazz saxophonist (played by Dexter Gordon), is recovering from his heroin addiction during a sojourn in France. As he walks along a beach with a friend and his ten-year-old daughter, who is running up ahead and skipping along the edge of the surf, Dale says:

It's funny how the world is inside of nothing. I mean you have your heart and your soul inside of you. Babies are inside of their mothers. Fish are out there in the water, but the world is inside of nothing. I don't know if I like this or not, but you better write it down.

With regard to "getting what one wants," some psychoanalysts say that what all human beings want most, at the deepest unconscious level, is to be back inside their mother's womb. Otto Rank believed that our most basic desire is to return to one's original abode inside the mother. He developed the idea that the greatest single emotional shock in an individual's life is the trauma of birth. He postulates that the desire to re-enter the womb—the safest, most protected, most peaceful, most loving place on earth—is reflected in our dreams. For example, you dream that you are taking too long to pack and thereby miss a train. Rank interprets such an anxiety-provoking dream as a "primal repression of the birth trauma," where the departure of the train can be interpreted as meaning separation from the mother. Rank, initially a strong supporter of Freud, broke away from Freud's teachings by placing greater emphasis on the role of the mother and birth trauma than on the role of the father and the Oedipus complex in the psychological development of a human being.¹²

Another member of Freud's inner circle, Sandor Ferenczi, went even further. He suggested that fetal life in the amniotic fluid of the mother's womb is a reenactment of the existence of the earliest forms of life in the planet's oceans. He theorized that when vertebrates with newly formed lungs emerged from the sea to live on dry land they experienced a trauma akin to the trauma of birth. Our having to leave the security of our mother's womb is, in essence, a repetition of the original trauma that our animal ancestors experienced when they left the relatively secure environs of the sea. Ferenczi postulates that the unconscious wish to return to our mother's womb and the comfort of its dark amniotic fluids symbolizes an even more deep-seated wish to return to the origin of life, to our primeval existence in the sea. Anticipating the findings of 20th century evolutionary biology and depth psychology, the first Western philosopher, Thales, said more than 2,600 years ago that *water* is the origin and mother-womb of all things.

Our artists also consider the desire to return to the ocean, the womb of all life on the planet, in their poetry and novels. Jack London excelled in depicting the often violent struggles of elemental, hard-living men. In his novel *Martin Eden*, Martin is an acclaimed writer who has lost his zest for living, and he attempts to stir himself by taking a pleasure cruise to Tahiti. He can no longer find any delight in old familiar things, and he finds it increasingly difficult to endure the "white glare of life." He comes upon the cure for this profound unease in this stanza of poetry by Swinburne:

From too much love of living
From hope and fear set free,
We thank with brief thanksgiving
Whatever gods may be
That no life lives forever;
That dead men rise up never;
That even the weariest river
Winds somewhere safe to sea.

After reading this poem, Martin comes upon a way to end his life. He squeezes through the porthole of the steamer into the ocean and willfully drowns himself. The way I look at it, Martin's squeezing through the porthole into the sea reenacts his going back up

through the birth canal to his watery origins. London writes, “His shoulders stuck, and he forced himself back so as to try it with one arm down by his side.”

Woody Allen concludes his first serious work, *Interiors*, in a similar fashion. At the end of this film, Eve, having suffered through a depressive life of pretense and conditional love, walks from her beach house into the ocean to her death—back into the liquid, peaceful place of her species’ origin. Her daughter tries to save her and nearly drowns; but, at the last moment, she is pulled back onto the beach and revived by her stepmother, Pearl, her father’s earthy, sincere, direct, and nurturing new wife. In returning to their origins in the sea, Martin Eden and Eve can only *end* their lives there. We cannot return to the womb and we cannot return to the life of the ocean.

You can, of course, spend a limited amount of time submerged in the ocean, in the depths of the sea, if you use a self-contained underwater breathing apparatus, as in scuba diving. Part of the appeal of this sport, I think, lies in the contented feeling of weightlessness that one gets while underwater with correctly buoyant scuba diving gear. This feeling of underwater weightlessness harks back to life as a fetus in the watery confines of our mother’s womb. It is a sobering realization, however, to watch how quickly the nitrogen bar graph rises on one’s dive computer while one lingers 100 feet below the surface, as I recently did in the warm waters of the Caribbean, where the visibility is so good that at that depth one can still see the surface. This graph indicates how much nitrogen is being absorbed into the tissues at the higher atmospheric pressures that exist underwater. A safe stay at this depth is limited to less than 20 minutes without having to make a series of decompression stops.

In Henrik Ibsen’s play *The Lady from the Sea*, Ellida, who believes that human beings experience a nostalgia to return to their primeval existence in the depths of the sea, has this to say:

Once you have become a land animal, there’s no going back to the sea again--nor to the life of the sea.

We arose from life that lived in the planetary oceans for more than three billion years, protected and cradled by the rhythm of lunar tides. Only after this vast length of

time did our amphibian ancestors finally become land animals, about five hundred million years ago. Our species has spent more than 5/6ths of its biological history living in the sea. It should therefore come as no surprise that we humans harbor a deep-seated urge to return to our origins in the sea.

We have evolved from microscopic bacteria into a species that over the last 50,000 years has also undergone an accelerated cultural evolution. Consequently we need and desire a lot of things. With the motive of self-interest hard-wired into the genes of each living entity on the planet we are thrust out into a world where countless numbers of other living things also strive to fulfill their needs. In this world of separate, self-interested individuals our desires are often thwarted, and many people on the planet are forced to live in such a manner and with a degree of discomfort that affluent Americans would find very hard to endure. Even more perversely, as well-off people are finding out, when we do have the means to fully satisfy our desires then we fall prey to boredom, and other adverse consequences that damage our health.

The world of separate self-interested individuals seeking to get what one wants is a world, for many, of toil and suffering, a world that for all of us ends in death. And we find, when we look closely at the world, that it is filled with deception and pretense, where even politeness oftentimes turns out to be hypocrisy, and where things like fame, honor, power, and profit are not what they seem to be. These things are ephemeral and illusory and ultimately meaningless in the face of death; they have the “glitter of mere dust in the sunlight” into which they are dispersed, as one writer puts it.

How did all this come about? Through sex, the next subject of my musings.

Endnotes

- ¹ A lot of information has been published on mass extinctions. A very good introduction to this subject is: J. D. MacDougall, *A Short History of Planet Earth: Mountains, Mammals, Fire, and Ice* (John Wiley & Sons, 1996). See also "Extinctions: A Paleontological Perspective," by David Jablonski, in *Science*, vol. 253, pages 754-777, 1991; and this very nicely written article by James Trefil, "Stop to consider the stones that fall from the sky," *Smithsonian* 20 (No. 6): 81-93, (September) 1989. The June 1989 issue of the *National Geographic* (vol. 175, no. 6, pages 662-700) also has a very well done article on 12 mass extinctions (5 of them immense) that have occurred since the fossil record of animals began about 800 million years ago. *Science News* (vol. 141) has a nice, concise two-part article about the Chicxulub crater by Richard Monastersky: "Closing in on the Killer: The Caribbean gains favor as the scene of an ancient global catastrophe" (January 25, 1992 issue, pages 56-58), and "Counting the Dead: Did the dinosaurs and their contemporaries die out with a bang or a whimper?" (February 1, 1992 issue, pages 72-75).
- ² Richard Dawkins, *The Selfish Gene* (New York: The Oxford University Press, 1976) pg. 214
For an up-to-date view of human cultural evolution, see Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies* (Norton, New York, 1997)
- ³ From *On the Basis of Morality*, page 153.
- ⁴ See Ronald Seigel, *Intoxication: Life in Pursuit of Artificial Paradise*, (E.P. Dutton, 1989) and Martin Booth, *Opium: A History* (Dunne Books, 1998)
- ⁵ See "Boredom's Uses" by Joseph Brodsky, *Dartmouth Alumni Magazine* October, 1989, page 30.
- ⁶ See William Lutz, *Doublespeak* (New York: Harper and Row, 1989).
- ⁷ Allan Janik and Stephen Toulmin, *Wittgenstein's Vienna* (New York: Simon Schuster, 1973), page 269.
- ⁸ See Carolly Erickson, *The Medieval Vision: Essays in History and Perception* (Oxford University Press, New York, 1976) for a lucid discussion of this subject.
- ⁹ Originally given to me by my brother, Rody, for an excellent review article on the history of the self, see Roy Baumeister, "How the Self Became a Problem: A Psychological Review of Historical Research." *Journal of Personality and Social Psychology* 52: 163-176, 1987. See also his highly recommended book *Identity* (Oxford University Press, New York, 1986).
- ¹⁰ A good place to start on the subject of aggressive behavior in humans is John Klama, *Aggression: The Myth of the Beast Within* (New York: John and Wiley and Sons, 1988).

¹¹ See John Bowlby, *A Secure Base* (Basic Books, New York, 1986) and Lloyd Silverman's article, "Two Unconscious Fantasies as Mediators of Successful Psychotherapy," in *Psychotherapy: Theory, Research and Practice*, 16: 215-230 (No. 2 Summer) 1979.

¹² Otto Rank, *The Trauma of Birth*, (1924, tr. anon. 1929).