

P. IÑIGUEZ



SYMPTOMS  
OF A  
SICK CULTURE

A healing glance to culture, society,  
science, religion and human behavior

1997

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P. IÑIGUEZ

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To my wife:  
Without her love and devotion  
this book would have never  
been written.

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P.I.

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## INTRODUCTION

There is no agreed definition of the word "culture." It has been compared to a manifold that each one uses as he pleases. However, in general terms, culture may be accepted, as the sum of knowledge, values, patterns of behavior, abilities and skills, including history, philosophy, the arts, science, religion, beliefs, ethics and literature, common to a human conglomerate.

Peter Koslowski, has added that "Culture in the broadest sense is the organism of order and society's interpretation of itself and its relations with other societies and *cultures*. A society's culture includes forms of order such as constitution, institutions, customs and habits, and linguistic and (other) symbolic forms of human interpretation from oral tradition to written codes of law and the liberal arts."

Richard von Weizsäcker, former Federal President of Germany, has stated that, "Culture is a way of life. It is the real stuff of politics."

To establish how healthy is a society's culture we need to evaluate the people, their actual living conditions and their capacity to face the challenges of the future.

We, the people, describe ourselves as human beings.

But what is, indeed, a human being? Genetics, Sociobiology, molecular biology, neo Darwinism, and even the recent studies of Chaos and Complexities demonstrate how difficult it is to comprehend what a human being really is.

Yet, we have to confront the demands and promises of the arriving next millennium.

## Introduction

Today, the United States of America is the most powerful country on Earth, we can expect that scientific knowledge and the technological advances of the last decades, will be of great help, but there are stormy clouds in the horizons. We should look at ourselves and our society in the mirror of history to learn from the past and be prepared for the aftertime. The evolution of the American culture, the characteristics of the new American society, its historic, religious, socioeconomic, scientific and philosophical aspects should all be taken into account. Ominous conditions emerging from within, will have deleterious effects on the future American way of living. We must face the disruption of the traditional hierarchy of values, the ever expanding corruption, the unbalanced budget, the drug traffic and addiction, the enhanced tendency to violence, the fading tradition of family love and kin protection changed into child abuse and battered spouses; the disturbing racial antagonism, the monstrosity of Oklahoma's tragedy and above all this insanity, the inexcusable deficiency of the judicial system. This seems to be a long list, but if we look at it, carefully, we will agree that nothing can be excluded. Contrariwise, there is much more than these *endogenous* calamities. The demographic explosion, the destruction of the rain forest, the warming climate and the pugnacious, world wide, political and economical struggle are *exogenous* factors analyzed by Paul Kennedy in his superb book, "Preparing for the Twenty First Century." These facts, point to the dangers that the American society and, for that

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matter, the inhabitants of our plundered planet, will have to face. The presentation of endogenous and exogenous components is artificial, since everything is interconnected and enhanced by the intervention of an entity that, in my opinion, should be named International Econocracy, in which, the International Monetary Fund (IMF), the World Bank, the Paris Club and de Group of Seven, are the main participants.

According to Kennedy's data, in 1825, the human population was about 1 billion, today is 5.5 billion and will reach about 8.5 billion in the year 2025. Besides, 80% located in Africa, Central America, South America and Asia, will live in extreme poverty and ignorance, victims of famines, uncontrollable epidemic diseases, genocides and other causes of unbearable suffering. The disarray of the global natural environment may be appreciated by the simple facts, that in 1980 the rate of deforestation in the tropics was estimated about 11.4 million hectares, but another estimate raised the total to 20.4 million hectares equivalent to 50.5 million acres.

The ecological disaster created by the Soviet Union, before its collapse, from nuclear wastes, faulty schemes to divert the natural flow of water and pollution of the earth's atmosphere have had, already, lacerating effects in many countries of Europe and Asia.

In regards to Evolutionism, the struggle between the religious faction who are not inclined to accept science as the expression of truth and the scientifically minded has been stubborn. The first group demanded the introduction of religi-

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ous Creationism as a parallel option to Evolutionism. Finally, in October 1996, Pope John Paul II proclaimed that Evolutionism was a scientific fact properly demonstrated.

While it took four centuries to vindicate Galileo, Darwin was accepted by the Catholic Church after only one century.

On the other hand, biologist have to deal with the new ideas introduced by the study of Chaos and Complexities.

Stuart Kauffman, Professor of Biochemistry at the University of Pennsylvania, has postulated that *order arises naturally and spontaneously because of principles of self organization laws of complexity, that we are just beginning to uncover and understand.*

His books, "The Origins of Order" and "At Home in the Universe" are outstanding. With his approach a new paradigm for biological order has emerged beyond the reach of Darwinism, and yet, in regards to the existence of God, it does not make any difference since God cannot be proved or denied by any kind of scientific argument. Human intelligence has proved useful to study Nature; it has expanded our universe beyond the limits of our natural sensorial perceptions, but the image of God is above reason.

We may ask: Why is it necessary to exclude Evolutionism from the mind of God? Who could forbid God to introduce such a beautiful process in His wonderful Creation? Who decided that Evolutionism and Chaos are anti-religious because they are scientific subjects?

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Our ability to understand science and mathematics reflects on the mystery of whether there is a purpose and design to human existence. Therefore, it is no wonder that many scientists have been induced to proclaim the necessity of God. Scientists have learned that the most advanced knowledge may be useless and even dangerous in the absence of wisdom, prudence and justice. Guilty feelings were expressed by many great scientists, after Hiroshima and Nagasaki. Science has gone so far, that many laymen prefer to show disbelief and contempt to cover-up their lack of comprehension. However, telescopes, radiotelescopes, infrared telescopes, spectrometers, microscopes, electronic microscopes, computers, magnetic nuclear resonance (MNR), etc. have extended the horizons of our knowledge. Science has transformed man's life in a way that would have never been imaginable a century ago. As a rule, scientists pursue truth to discover the secrets of nature and in their endless search for truth they follow rigid natural laws which are not man made. Any attempt to violate these laws, would be foolish.

From Edward O. Wilson's, *Sociobiology*, we learned about the genetically encoded social organization of the Hymenopterous. Wilson, also postulated that religion may have genetic roots and some expect that man, being a social animal, should eventually improve his behavior.

Meanwhile, Evolutionism has gone even further under the title of Neo Darwinism and the followers of Evolutionary Psychology find no place for moral and virtue in hu-

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man behavior. Robert Wright, in his provocative book, "The Moral Animal," says: "It isn't only moral feelings that now fall under suspicion, but all of moral discourse. By the light of the new Darwinian paradigm, a moral code is a political compromise. It is molded by competing interest groups, each bringing all its clout to bear." He adds: "...Can morality have no meaning for the thinking person in a post-Darwinian world? This is a deep and murky question that (readers may be relieved to hear) will not be rigorously addressed in this book."

Doyme Farmer, adds: "Understanding the inexorable growth of complexity isn't going to give us a full scientific theory of morality ... "Religions try to impose rules of morality by writing them on stone tablets," he says. "We do have a real problem now, because when we abandon conventional religion, we don't know what rules to follow anymore. But when you peel it all back, religion and ethical rules provide a way of structuring human behavior in a way that allows a functioning society ... My feeling is that all of morality operates at that level. It's an evolutionary process in which societies constantly perform experiments, and whether or not those experiments succeed determines which cultural ideas and moral precepts propagate into the future."

It is undeniable, that Nature constantly shows selfishness and cruelty as dominant attitudes in the predatory animal and, man, besides being an animal, is the greatest predator of them all.

However, Frans de Waal, a brilliant zoologist and ethologist, in his very appealing book, "Good Nature," makes a compelling case that our morality is grounded in our biology, asserting that ethical behavior is as much a product of evolution as any physical trait. The cover of that book says: "He points out, a dog's guilty look, a gorilla self-sacrifice for its wounded mate, an elephant herd's frantic efforts to rescue a stranded calf and many other examples, to claim that animals subscribe to an ethical code. Primates obey social rules, they assist one another, share food, resolve conflicts to mutual satisfaction, and display a sense of fairness. De Waal highlights that natural selection, while mercilessly pitting life forms and individuals against each other, has led to symbiosis, mutualism, and sensitivity to others."

*Yet, man is a very special case .*

Who else, on earth, can perceive the universe projected by our brain on the wonderful screen of our imagination with the inconceivable dimensions of its macrocosms and the incomprehensible microcosms?

The human brain represents such an incomparable leap in the evolutionary process that the distance between any other brain and the human brain surpasses, by far, the great distance between ENIAC and WINDOWS in computer models.

It gave us the capacity to ask: Can moral and virtue represent just another way to compete in natural selection? Is it not logical that people with wisdom, knowledge, prudence

and justice should have much better opportunities to perpetuate their genes, than those living in ignorance, creating the demographic explosion, facilitating the transmission of deadly epidemic diseases, hunger and violence?

Our brain, allowed us to separate time from the continuous spacetime of physics, with which we have learned of past history and intend to prepare for the future.

Such a kind of temporal perception, acquired by the asymmetrical development of our cerebral hemispheres, is exclusively human and it represents the starting point for the acquisition of consciousness.

I have stated that **Consciousness is the capacity to evaluate experiences in the frame of our exclusive temporal perception of past, present and future.**

That capacity to evaluate experiences, implies knowledge and awareness acquired by brain functions. Notwithstanding, there are other more relevant aspects. It is more amazing, that previous to our knowledge and our intent to perform a "voluntary act," our brain has been engaged in the execution of that action.

The works of Benjamin Libet and Bertram Feinstein, demonstrated that our brain anticipates the future every time we do something in the present. These studies show that a subject's brain begins to generate waves and signals a full second and a half before the subject engages in the simple act of lifting a finger. It shows, how difficult it is, indeed, to understand what a human being really is.



Francis Crick, used this data as one stimulating subject of his book, "The Astonishing Hypothesis" and remembering Alice in Wonderland, concluded that we are nothing but a package of neurons. Meanwhile, the neo-Darwinians will say that we just follow the orders given by our genes.

With respect to the study of Chaos and Complexities, Christopher G. Langton, from Los Alamos National Laboratory, one of the brilliant innovators in the last scientific revolution which deals with *attractors, iteration, fractals, artificial life, artificial intelligence*, et cetera, and a witness of the collapse of communism in the former Soviet Union and its Eastern European satellites, has said, that the whole situation seems all too reminiscent of the power-law distribution of stability and upheaval at the edge of chaos. "When you think of it, -he takes on - the Cold War was one of these long periods where not much changed. And although we can find fault with the U.S.A. and Soviet governments for holding a gun to the world's head -the only thing that kept it from blowing up was Mutual Assured Destruction- there was a lot of stability... But now that period of stability is ending. We have seen upheaval in the Balkans and all over the place. I'm more scared about what's coming in the immediate future. Because in the models, once you get out of one of these metastable periods, you get into one of these chaotic periods where a lot of change happens... The possibilities for war are much higher -including the kind that could lead to a world war-. It's much more sensitive now to initial conditions... So these periods of

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evolutionary change can be pretty nasty times...This is the kind of era when the United States could disappear as a world power. Who knows what's going to come out at the end?"

Going further, it is worthwhile to mention Niels Bohr's postulate, adverting, that we will never know Nature itself and science represents, only, the explanation of our way to perceive Nature.

All these scientific and philosophical abstractions have to be seriously taken into consideration. Many of the endogenous calamities already mentioned, are related to the general disregard of virtues prevailing in this culture while wisdom, knowledge, justice and a different philosophical orientation are badly needed. But, as it was said before, we are still animals and, very often, our marvelous brain cannot prevent that, we behave as the most irrational of all creatures.

How difficult, indeed, it is to understand the human being (!)

The great majority of the population in developed countries is educated to make money one way or another and any activity considered as a not efficient moneymaking device is underrated. That happens with any philosophical orientation that promotes virtues and moral values. But, moneymaking, by itself, will not save a society.

The American Dream includes its religious traditions, as well as the positive feed back established between science, technology and economy, dominated by the last compo-

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ment. But the models related to dynamic systems and complexities, predict that the constant increasing power of that system will produce a cataclysmic crisis. That crisis may occur sooner than later. We are, already at the edge of Econocraziness. Who knows what can be next?

In the chapter dedicated to Virtues and Human Nature, it will be seen that man's dilemma in the present stage of our psychological evolution is to be in the middle of vice and virtue. These subjects, together with science, are treated rather extensively as predominant factors in the history and the present situation of the American society. Before getting into the future, brief historical notes are offered about the scientific, philosophical and political evolutions since the ancient civilizations that emerged in Mesopotamia, Egypt, the Indus valley, Greece and Crete to show the relationship with the present.

The historical evolutions of Judaism, Christianity and Islam are presented in separate chapters. Their different characteristics regarding science and religion are compared.

The chapter of the Black American shows, among other things, alarming aspects evolving toward an uncertain future that deserve special attention.

I would hate myself if I ever intended to write a book about O.J. Simpson. However, his criminal trial had to be included for obvious reasons. It has been called, at times, "the trial of the century" and the environment was "*contaminated*" by the media covering and their commentators.

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Some of the latter, were brilliant, but many were biased and even absurd. Others expressed their concern and protested at the overwhelming presence of the subject. However, the extravagant presentation demonstrated important negative conditions, rampant today in this society.

The whole process has been considered as an impudent presentation of legal prostitution and it has shown the necessity of fundamental changes to prevent catastrophic results.

The trial exposed, *beyond any reasonable doubt*, the increasing racial animosity and its unpredictable consequences, the shameless and unpunished violence in the battered spouse syndrome and the inefficiency of a system, that many lawyers still proclaim as "the best judicial system of the world." The best for them, that is.

Virtues and moral values are not obsolete decorative artifacts. They cannot be blinked away. There can be no justice without truth. There cannot be freedom without justice. Wisdom, justice, temperance, prudence, truth and courage are indispensable factors to explain human history, to preserve the future of the western civilization and probably of humankind. We may add Faith, Hope and Charity, that Saint Paul and St. Augustine considered supernatural virtues and Aquinas called theological virtues, as the only way to prevent a high dose of pessimism.

Injustice is very painful to man and it deeply hurts society. It generates frustration, anger, hate, rebellion, revenge

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and violence. The conscious and unconscious identification of black people with O.J. Simpson, was easily perceived when they expressed their opinions on T.V. It was not surprising that those with a limited education exhibited a fanatic attitude, but others with academic qualifications, behaved in the same manner. All of them reacted as members of a discriminated minority; a minority that is a victim of social injustice. Things may be much worse, when a considerable proportion of citizens with more resources to express their anger and rebellion, believe they are mistreated.

When injustice is associated to a paranoid delusion, it is even more dangerous. The Oklahoma disaster may be an example.

We may ask: Will the U.S.A. be able to evade these internal and external dangers when its own moral architecture shows so serious structural damage? Will it be possible to get over the slavery of crass materialism? Can this society afford the denial of virtues, the disregard for truth and the desecration of justice, as normal procedures? Would it be possible to prevent the crisis provoked by the dynamic system of International Econocracy. This example of insatiable greed that includes the greatest economical power on earth, owners of dominant banks associations and their lawyers, may never see the light.

Let's hope that humanity will survive and our highest values can prevail.

## Chapter One

### Society as a living organism

Syndromes with bad prognosis

## SOCIETY AS A LIVING ORGANISM

When we are healthy we are unaware of our body. Even our strong heart beats go unnoticed and it is difficult to imagine all the marvelous things that happen, simultaneously, during the whole process that we call life.

Each organ represents a wonder of harmonious interaction with all the others, and the whole organism is much more than the sum of its parts.

It is accepted that "family is the *core* of society."

"*Core*," (from the Latin, cor= heart), may represent:

1. The central or innermost part of a thing. 2. The *heart*, as of an apple containing the seeds. 3. The most important part of anything.

However, are we aware of how sick the *core* of this society is? The reports of mothers and fathers abusing and killing sons and daughters; of sons killing fathers and mothers; teenagers killing teenagers and adults; even children killing children and infants, there seems to be epidemic.

What does it all mean?

Is it a sign of genetic disturbance?

Is it the environmental influence?

Is the lack of love, genetically and environmentally, disturbing the new generation?

It is difficult to establish how love or the lack of love may influence the evolution of a human being, even before he is born. In 1985, it was reported in Science News, that premature children treated with love, receiving caresses and massages, gained weight twice as fast as the children that

## *Society as a living organism*

were not treated in the same manner. Besides, they were more active, more alert, could tolerate noises, were better orientated and easier to be emotionally adapted. It might be, that many children of the new generation having been deprived of love from the very moment they were conceived are acting accordingly.

The nervous system, after resolving the stimulus received by the sensorial organs (eyes, ears, touch, etc.) is constantly giving us information about the environmental changes, that is necessary to induce a proper adaptation.

The functions performed by the liver, are unbelievable. Though to obtain the synthesis of a protein molecule in the best equipped laboratory, under a group of highly qualified scientists, will require months of hard work, the liver cell (*hepatocyte*) is constantly and simultaneously performing different and even opposite biochemical reactions, as for example, reduction and oxidation, synthesis, hydrolysis, conjugation, etc. That happens at incredible speed, due to the enzymatic activity that takes place inside the hepatocyte.

Our immunological system is able to preserve the integrity of the organism by recognizing, locating and destroying any foreign molecule that penetrates into our body and which may have deleterious effects. However, the dynamic process of life, the wearing and tearing, the repairing and renovation, provoke the alteration of genetic structures responsible for the many characteristic changes of old age and eventually natural death.



## *Society as a living organism*

Occasionally, some factors produce the rupture of the harmoniously unified performances. Consequently, there will be sickness and its symptoms will make us aware of the abnormal functions of the different affected organs.

Today, humankind is suffering among other diseases, the aggression of different forms of cancer and the Acquired Immunological Deficiency Syndrome (AIDS) .

With regards to cancer, it can be said, that it shows a disordered behavior of cells related to its mechanism of growing with a tendency to immortality and a disruption of the necessary biochemical interaction with neighboring cells. We know, however, that the malignant cell, eventually, will destroy the organism to which it belongs and finally will die with it. It is not difficult to see the similarities between the cancerous cell and the behavior of the 1% of the population that controls 40% of the economy of the country. Mammoth corporations control almost all the wealth of the people.

The powerful are constantly snatching whatever is provided by the environment for its own and only benefit in detriment of everyone else. Executives of many corporations earn 200 times more than the workers. They have notoriously increased their income in the last ten years, yet managed to pay less taxes. They manufacture goods in China, Mexico and the third world to take advantage of slavery wages including the exploitation of children, and give away the jobs needed for American workers. Some of the remaining jobs, are often divided in part-time opportunities to escape paying the

## *Society as a living organism*

corresponding health insurance. Young couples are forced to take two part-time jobs each, to be able to survive. They often feel frustrated, insecure, without incentives, so very tired that they are unable to develop a normal family life. No wonder if divorce and the improper up-bringing of children are common results. Within this pattern, many middle class families acquire the characteristics of poverty.

The nonprofit Luxembourg Income Study is based in Walferdange, Luxembourg, and financed by the U.S. National Science Foundation and similar bodies in other countries. Its research group assessed the financial welfare of children by comparing household incomes including government benefits of families of four (that include children) and they found the average income for an affluent family of four Americans was \$65,536, a year, while the average for a poor family was \$10,923. The difference (\$54,613) represented a rich-poor gap almost \$14,000 a year greater than the country with the next largest difference, Switzerland. Timothy Smeeding, professor of economics at Syracuse University and Lee Rainwater, sociology professor retired from Harvard University, were co-authors.

Let's talk of AIDS, again. Very often, its first symptoms are respiratory infections and diarrheas. In these cases the treatments are useless and finally the whole clinical picture of AIDS, becomes unequivocal. Similarly, the unbalanced budget is one of the most important political issues, today, and it should be treated as a symptom of a serious social

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illness. It is equivalent to the diarrhea, already mentioned, in a patient that suffers AIDS. It shows that the unbalanced budget is related to the disruption of our hierarchy of values. In the American culture the dominant constituent is money, while other important values, as virtues, have been completely overlooked.

The U.S. News and World Report of October 2, 1995, offered a special investigative report about Tax Exempt. It said that many nonprofit entities look and act like normal companies running businesses and making profits.

Today, 1.1 million organizations claim tax-exempt status. Many of them, aid the poor and finance medical research, but others bear little resemblance to the pretended traditional charities .

The criminal conviction of the former director of the United Way of America increased scrutiny of nonprofit institutions. The American Association of Retired Persons (AARP), that is supposed to be a nonprofit organization which favors old retired citizens, has been on trial for improperly obtaining millions of dollars in benefits by deceiving the government and clients. Similar accusations have been made against incumbents of different high offices.

Allow me to state that the defensive reaction of society to prevent crime depends on the creation and application of the law following the dictate of virtues.

That represents the immunological mechanism of society.

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Lawyers are citizens with high academic qualifications, theoretically orientated to the creation and application of the law, to worship truth and justice. It would be ideal if they were examples of wisdom, temperance, and prudence. They should accept as their most sacred duty to protect the welfare of society. But that would be a perfect world and they are just human beings in the middle of vice and virtues.

Many of them use the law for their own benefits, as they do, when they receive big salaries from cannibal corporations and "non-profit" institutions, for helping them evade taxes. They exhibit as a great achievement, their capacity to help a rich criminal to get away with murder.

When in a trial, a lawyer uses his ability to distort truth with the only purpose of obtaining fame and money, he is committing a crime against society. His duty on behalf of his client, is to protect him against any denial of his rights and to make every effort to honestly demonstrate his innocence.

Regretfully, lawyers do not consider the preservation of justice as part of their responsibility. Contrariwise, personal benefits, professional privileges and advantages, are the main concern of a considerable percentage of lawyers that epitomize deception. Therefore, society must improve its mechanism of defense. Otherwise the perversion of legal procedures will be suicidal.

Very often, the defense presents the defendant as the underdog in an uneven struggle against a powerful establishment. They intend to divert the feeling of compassion

## *Society as a living organism*

from the victims to the defendant, and in so doing, they send the victims to oblivion. It is necessary to point out that the antagonistic parts in a trial are the society and the defendant, who is considered innocent until his guilt is proved beyond a reasonable doubt. But to accuse any one of a crime, there must be enough indicia of culpability and he is not the underdog. Just the opposite, the defendant has all the advantages in the court of law. Very often, the burden of proof is too rigorous for the prosecution and a "brilliant lawyer" can easily help a criminal get away with murder. The defense only has to create some doubt that many times is just an unreasonable doubt, but enough to be successful.

The real underdogs are the victims and the families that have to endure the pains of the crime.

Very often, the trial is a sordid struggle in which, unscrupulous behavior and shrewdness are dominant factors and in the meantime, society is being badly damaged and offended.

## Chapter Two

### History in a nutshell

#### *The quantum leap*

## HISTORY IN A NUTSHELL

In the middle East, the region located between the rivers Tigris and Euphrates, historically named, Mesopotamia (from the Gr. mesos=middle+potamos=river) corresponding today mainly to Iraq, supported important civilizations. Here, Babylon and Nineveh, ancient capitals famous in the Bible, were traditionally recognized, although, the course of the Euphrates has changed, notoriously, in modern geography.

Iran, represents, today, the western part of the old Persian territory.

These civilizations, emerged about 4,000 years B.C. and were oriented toward a rather pragmatic political organization; men were concerned with their everyday problems, with their personal interests and with collectivism, as well. They were aware of the risk involved in the possibility of a violent decrease in agricultural production together with an ever increasing population in the cities. But they learned the importance of accurate astronomical observations and the corresponding climatologic variations. Therefore, they were able to prepare a useful calendar based on lunar months with approximately 29.5 days of duration and solar years that originally had 354 days. Until today, Muslims keep this kind of solar years. But the Babylonians knew that such a lack of precision in the lunar month produced an accumulated error representing 11 days at the end of the year.

### *History in a nutshell*

Eventually, that situation would make the calendar useless for agricultural purposes, since the climate of May would correspond to the month of December. To make the necessary corrections, they used their astronomical observations of the sun rising with regard to the zodiacal constellations and established the solar year of 365 days.

The zodiac [from the Gr. zoidiakos (kyklos) = (circle)] is an imaginary belt of the heavens, which permits us to divide the path of the sun, the moon and planets around the heavens into 12 equal parts, each named after a constellation of fixed stars. The first sign of the zodiac is Aries (the Ram), which the sun enters on or about March 21, corresponding to the spring or vernal equinox (aequus=equal and nox=night); then follow Taurus (the Bull), Gemini (the Twins), Cancer (the Crab), Leo (the Lion), Virgo (the Virgin), Libra (the Balance), Scorpio (the Scorpion), Sagittarius (the Archer), Capricorn (Capri=goat and Cornu=horn), Aquarius (the Water bearer) and Pisces (the Fishes).

Since long ago, man believed that the planets and the stars had important influence in the lives of human beings and even Johannes Kepler (1571-1630), one of the greatest scientists in human history, earned his life, making horoscopes for the nobility and the rich people of his time. Nowadays, many mortals fanatically believe the predictions of horoscopes published in magazines and newspapers



### *History in a nutshell*

and will not miss the opportunity to introduce the signs of the zodiac as their main subject in social conversation. They misidentify Astronomy and Astrology and take the latter as a real science. But we could ask: can these people reconcile the enormous difference in the lives of those that were born in the same hour of the same day and the same year?

Going back to Babylon and astronomy, let's explain that the equinoxes are two opposite points at which the sun crosses the celestial equator, when the days and nights are equal. Opposite to the vernal equinox, already mentioned as the beginning of the zodiac, is the autumnal equinox, on Sept. 21. The time of the year when the sun is at its greatest distance from the celestial equator, either north or south, is named solstice (sol=sun, sisto=cause to stand), because at this moment, the sun seems to pause before returning on its path. The summer solstice is about the 22 of June in the northern hemisphere and the winter solstice occurs about Dec. 22. The improvement of the solar year, did not provide an exact correction but reduced the difference to one day in four years, which is the reason for our leap years. It is worth mentioning that the Babylonians were the first to use the week with seven days. Other modifications of the calendar have been necessary, including the Egyptian calendar related to the Nile's floods and the astronomical observations of the star Sirius, the most brilliant star in the sky, that they na-

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med Sothis. We will find this, again, when describing Egypt. Our calendar is originally related to the Egyptian but it was modified several times to reach its actual condition beginning in February 1582, when Pope Gregory XIII issued a bull by which the Jesuit astronomer Christopher Clavius (1537-1612) worked out a solution for the problems of the calendar. The task was accomplished with suggestions made by the astronomer and physician Luigi Lilio Ghiraldi and since Oct. 15, 1582 we use the Gregorian calendar.

The first great conquest of humanity related to the use of energy was the control of fire by the primitive Homo sapiens; the Babylonians obtained the second when they introduced the use of the wheel and the axle, which embody an infinite number of levers (each diameter as one) with a common point at the center of its circumference. With this achievement a new technology was developed in that period of ancient history. Moreover, their knowledge of algebra was superior to that of the Greeks and they practiced psychosomatic medicine.

As ever, wealth and knowledge were important assets to obtain political power. Wealth, provided the capacity to keep many unconditional followers that eventually could organize an army. Knowledge, was the main source of power for the priests. They used the contemplation of the sky as the first scientific observation of man and, because of

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that, Astronomy was the first science developed by human intellect. Since the heavenly bodies were related to the deities, it is no wonder, if priests were attracted to the subject. They often dedicated their lives to study the secrets of the heavens and used the acquired knowledge to control common people by fear and credulity in supernatural powers.

Kings, used the priests to control the masses, while the priests enjoyed a privileged official position. Those governments were autocratic and no one should expect, so early in history, the idea of civil rights or any democratic representation. However, we have to mention the period of Hammurabi, who was the sixth and best known ruler of the first (Amorite) dynasty, (reigning c.1792-50). Besides being engaged in the construction and restoration of temples, city walls, canals for irrigation and public buildings, as well as extending his military power, he counted as his most memorable achievement the establishment of a system of law and justice, known today as the **Code of Hammurabi**. It included regulations of public and personal health care, commerce, inheritance, and other interesting aspects. Some scholars claim that its importance has been exaggerated, but its historical value is undeniable. The main source of knowledge about the Hammurabi's Code is the stela discovered by the French Orientalist Jean-Vincent Scheil, at Susa (1901). It is in the Louvre.

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The typical structures built by the Babylonians were the *ziggurats*, which could not be compared in size and extension with the Egyptian pyramids (300 feet high against the 481 feet of the Great Pyramid). Moreover, the ziggurats, were covered with vegetation, they were not tombs, but symbols to bring mankind into relation with the gods. Normally, there were two temples associated with each one of them.

It has been postulated that the basis of the biblical tradition of the Tower of Babel, was a ziggurat.

The existence of the famous Hanging Gardens of Babylon, has never been archaeologically demonstrated.

With all its greatness, Babylon fell to the Persian ruler, Cyrus the Great, in 539 B.C.

In a similar way, although, with important differences, Egypt depended upon the Nile as south Mesopotamia upon the Euphrates and the Tigris. As it is explained in H.W.F. Saggs, "Civilization Before Greece and Rome," normally, these two rivers are at their lowest in early autumn, and then begin their rise. The Tigris is usually highest in March or April, and the Euphrates a month later; which implies the risk of damaging the ripening crops. The Euphrates formed natural canals in which variations were less dangerous. Consequently most early major settlements in south Mesopotamia were concentrated around them. Somehow, the Nile floods in a very regular, predictable and generally benign pattern,

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between late summer and autumn. Because of that, it was possible to have a harmonious continuation from harvest to the next sowing and agricultural efforts were usually rewarded with good productivity.

Before 3000 B.C. Egypt had coalesced into two kingdoms, Upper Egypt and Lower Egypt. The first, comprising the Delta region from Memphis northwards. Between 3100 and 3000 Menes the King of upper Egypt, conquered the Lower Egypt, and unified the kingdom. When he showed he could divert the sacred life-giving Nile, he acquired the status of divine being and initiated the First Dynastic Period.

The political organization was very strict; the vizier, as it is shown in the case of Rekhmire, who held that office in the fifteenth century, ranked second only to the king who was also an active ruler and undertook specific functions in the kingdom. As it was mentioned before, the High Priest, could anticipate the Nile floods by observing Sothis, and because of that, common people believed he was able to communicate with the gods.

Rekhmire, prided himself on his administration of justice and claimed *to judge rich and poor impartially, to rescue the weak from the strong, to defend the widow and relieve the aged, to establish a son in his paternal inheritance, to give food and drink to the hungry and thirsty and clothing to the destitute.* It is astonishing to see the rulers of ancient ci-

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vilizations, as Hammurabi and Rekhmire, so concerned about law and justice, while thousands of years later, our judicial system, proclaimed as “the best judicial system in the world,” allows lawyers to openly disrespect truth and to make a mockery of justice in murder trials.

The third and most extensive of the three earliest civilizations emerged somewhat after in the Indian sub-continent. This urban culture has been nominated as *the Harappan or Indus valley civilization*. Here, very important philosophical ideas were originated and, later on, were extended to become what is called today “Indian philosophy.” Compared to the western way of thinking, it presents surprising points of affinity as well as illuminating differences. They studied the relation between the body, the mind and the self; the nature of knowledge; the nature and origin of truth; the relation of realism to idealism and other interesting subjects. Eventually, a cosmogonic conception was developed, in which, man was immersed in a totality where everything was inseparably united and the expression, “I am” had no meaning. Individuality was inconceivable. The similarity of this philosophical approach with the Greek and even with the modern description of the universe, will be seen soon after. We should learn from the everlasting message that past civilizations sent to the future. Many important aspects of human nature related to our western intellectual tra-

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ditions, as the analysis of virtues, the search for truth and knowledge and our philosophical inquiry, stemmed from the ancient Greek culture. About 500 years B.C. Xenophanes, Parmenides and Zeno of Elea, led a philosophical movement which postulated the existence of a "true reality," timeless and immutable. Change and succession would be simple appearances perceived by our senses. This philosophical conception is known as the "Eleatic Tradition" because of its geographical origin. It was opposed to Heraclitus of Ephesus, who was recognized as the "obscure or dark philosopher," simply, because his abstractions were unreachable for the common people; he used common words with many different meaning. Heraclitus, however, seems to be the source of different modern philosophical ideas. Some authorities relate him to Hegel, Marx, Engels and Lenin; others find a clear relation between Niels Bohr's Principle of Complementarity and Heraclitus system, in which the unification of opposite tendencies is established. It seems interesting to quote the following expressions: "We step and we do not step into the same river," "we are and we are not." "All is one: the divisible and the indivisible, born and unborn, mortal and immortal, Logos and eternity, father and son, God and justice." "Heeding not to me but Logos, it is wise to admit that all is one." The Eleatics, in spite of their opposition to Heraclitus developed the same concept of "All is One" to a gre-

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ater extent. Heraclitus disliked the Eleatic contentions and said about Xenophanes that “much learning does not teach understanding.” However, Xenophanes, not only apprehended that All is One, but he added that the One is immobile. He was followed by Parmenides who predicated that “all reality is one.’

In his poem, *On Nature*, he says:

“What is unborn is imperishable;  
whole and unique, and immovable,  
and without end (in time)  
nor was it ever, nor will it be  
since it is now all at once  
one continuous.

For what birth of it wilt thou look for?

Zeno, the third great Eleatic, invented the *Dialectic*, that has been used with different meanings. Sometimes depreciatory and sometimes with deep philosophical implications. In the first case, it is taken as a mechanism of reasoning that seems to be correct, but is misleading. Scientists have used it to denigrate philosophers; philosophers to defame theologians and theologians to indict those who argue against Faith. Luther and Francis Bacon considered dialectic as “empty medieval teaching.” Contrariwise, Gibbon says: “Human faculties are strengthened by the art and practice of dialectic.” Sophists corrupted dialectic since they did not



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want to find the truth, but to win in forensic debates. That procedure is named *sophistry* and it has been perpetuated for centuries. Lawyers use it every single day of the week and, many of them, mistakenly believe it is equivalent to rhetoric. The Eleatic tradition was cultivated by Plato, Plotinus, Spinoza (1632-1677), Kant (1724-1804), Laplace (1749-1827), Schopenhauer and other more modern thinkers. Not surprisingly, we find it alive today and animated by new contributions. Continental Greece and Crete are the cradle of the western civilization and democracy. There, man began asking himself: who am I? and, emerged from the environment searching, philosophically, for his own identity. The Greek named that complex and extended environment: *physics*, which is equivalent to our representation of *nature*. Since then, man has been the only conscious observer of the Creation. Science is the result of that observation and scientific knowledge has grown faster and faster intending to understand the mind of God. We have been able to obtain a reasonable perception of Nature, but we are learning that our use of reason does not allow us to describe Nature itself. Likewise, we may perceive God, but we cannot comprehend God. God is above and beyond reason.

Today, we enjoy the privilege of the amazing Theory of Relativity and Quantum Electrodynamics, two wonderful abstractions of the human mind that have transformed the

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universe with unexpected and sometimes staggering answers which create new and more uphill questions. It is difficult, for instance, to reconcile the reality of our sensorial perceptions with the reality of the relativistic continuous spacetime. If we accept Einstein's proposition, the notion of past, present and future would be a delusion created by our sensorial organs without real physical meaning.

Therefore, we have on the one hand, that the Theory of Relativity has been confirmed so many times that it would be foolish to disbelieve its postulates and, on the other hand, "we know" we were born, "we know" we are alive and "we know" we will die. Can we deny the reality of our own existence?

Since Einstein introduced his theory, time lost its classical meaning and its absolute value disappeared.

When we think today, about the meaning of time our position is more strenuous than the one maintained by the Greeks.

Stephen Hawking, although invalid, unable to speak or to write, victim of the cruel disease *amyotrophic lateral sclerosis* (ALS), also known as the Lou Gehrig's disease, is probably the greatest scientific genius alive. He holds Newton's chair as Lucasian Professor of Mathematics at Cambridge University and among many other important contributions, he has stated that there never was a  $\text{time}=0$ .

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Ilya Prigogine, who received the Nobel Prize for Chemistry in 1977, contemplates that time existed before the universe came into being. To evade the uncomfortable singularity implicit in the Big Bang, he has postulated that instability allowed an irreversible transformation from one physical state to another. The whole process is explained by non linear equations with different possible solutions one of which may represent the vacuum with no matter and no gravitation. Here, instability has the capacity to produce particles with considerable mass. When that mass reaches a value in the order of 50 times the Planck's mass ( $2 \times 10^{-5}$  gram) the vacuum is converted into a system matter-gravitation equivalent to the universe. It is obvious that these conceptions are not easily graspable for the general public, but the effort is worthwhile to acquire, at least, a general idea of its meaning, instead of the simple denial of the value of science just because it cannot be understood. This happens when people with high education in other fields, but without scientific knowledge, intend to discredit scientific accomplishments. Then, science itself is the only answer. The extraordinary human achievements of this marvelous 20th century are based on that kind of scientific abstractions.

David Bohm of London Birkbeck College stressed the necessary wholeness of the quantum world: "...The inseparable quantum interconnectedness of the whole universe

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is the fundamental reality.” The same concept has been expressed in other words even more explicitly: “ The universe is a unity forming one all-encompassing organic pattern where no parts of that pattern are really separated from it or from each other.”

Fritjof Capra, in “The Tao of Physics” intended to reconcile Eastern Mysticism, in particular Taoism, with the western scientific knowledge and others have pointed the similarity between the cosmogonic conception originated in the civilization of the Indus valley and the unity described above. The English mystic poet Francis Thompson (1859-1907) beautifully expressed that idea in the following lines:

“That thou canst not stir a flower  
without troubling of a star.”

Finally, allow me to present my own “poem”:

God: Universe, Galaxies, Stars.

Man: Man’s Space, Man’s Time.

Past, Present and Future.

Relativity: Continuum Spacetime, Energymatter.

Quantum: Uncertainty,

Duality, Complementarity, Particlewaves,

Interconnectedness,

Wholeness.

Parts and Total; Total and Parts

ALL IS ONE.

## Chapter Three

### Judaism

RELIGION, SCIENCE, ECONOMY.

## JUDAISM

The Bible shows how Jews endured slavery and bondage. Through the ages, they have suffered all kinds of injurious treatments, including the horrendous holocaust in modern times.

Yet they have shown the rest of the world the strength of their faith, wisdom, knowledge, tradition, discipline, dignity, self esteem, courage and compassion.

Their contributions to the welfare of humanity are unsurpassable. Let's give some examples: Monotheism and The Ten Commandments. Public and personal health. Literature. Arts and Philosophy. Philanthropy and Science.

Monotheism, is the result of a powerful abstraction that allowed man to perceive God as a unique Eternal Being with no material representation.

Although, the Egyptian pharaoh, Akenaton, had introduced some ideas with the obvious tendency towards monotheism, he never came close to Judaism, from which, Christianity and Islam came into being.

The Ten Commandments, also known as THE DECALOGUE (Gr. deka logoi=10 words), were divinely revealed to Moses on Mt. Sinai and were engraved on two tablets of stone.

The rendering in Exodus, appears as follows:

1.- I am the Lord your God, who brought you out of the land of Egypt, out of the house of bondage. You shall have no other gods before me.

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2.- You shall not make for yourself a graven image, or any likeness of anything that is in heaven above, or that is in the earth beneath, or that is in the water under the earth; you shall not bow down to them or serve them; for I the Lord your God am a jealous God, visiting the iniquity of the fathers upon the children to the third and fourth generations of those who hate me, but showing steadfast love to thousands of those who love me and keep my commandments.

3.- You shall not take the name of the Lord your God in vain; for the Lord will not hold him guiltless who takes his name in vain.

4.- Remember the sabbath day, to keep it holy. Six days you shall labor, and do all your work; but the seventh day is a sabbath to the Lord your God, in it you shall not do any work, you, or your son, or your daughter, your manservant, or your maidservant, or your cattle, or the sojourner who is within your gates, for in six days the Lord made heaven and earth, the sea, and all that is in them, and rested the seventh day; therefore the Lord blessed the sabbath day and hallowed it.

5.- Honor your father and your mother, that your days may be long in the land which the Lord your God gives you.

6.- You shall not kill.

7.- You shall not commit adultery.

8.- You shall not steal.

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9.- You shall not bear false witness against your neighbor.

10.- You shall not covet your neighbor's wife, or his servant, or his maidservant, or his ox, or his ass or anything that is your neighbor's.

Traditions differ in numbering The Ten Commandments in Judaism and in different Christian Churches, as well. The totality of 10, however, is always preserved. The Ten Commandments had no particular importance in Christian tradition until the 13th century, when they were incorporated into a manual of instruction for those coming to confess their sins.

Many authorities have stated that the real meaning of "you shall not kill" is "you shall not murder," since some killings, as in self defense, are not condemned.

The Ten Commandments reflect a morality common to the ancient Middle East, and have been related to the Code of Hammurabi, perhaps improperly. It would be possible, however, to see them not as laws to obey or otherwise be punished, but as rules of wisdom to be followed in the pursuit of happiness.

In that case, the fear of punishment would be avoided and wisdom would decide our conduct. It is worth mentioning the so called, "Eightfold Way" taken from an aphorism attributed to Buddha: "Now this, O monks, is noble truth that



## *Judaism*

leads to the cessation of pain; this is the noble Eightfold Way; namely, right views, right intention, right speech, right action, right living, right effort, right mindfulness, right concentration." Buddha did not include punishment in the search for happiness.

But, would human beings exhibit a proper behavior just for the sake of goodness?

The Bible shows that the people of Israel, even after having the Tablets of the Law reverted to worship a golden bull and because of that, Yahweh was ready to disown them.

This is equivalent to the common modern attitude of ignoring religious teaching and examples of virtues while worshipping the false idols of crass materialism and infamous celebrities.

It is not a matter of race or religion, it is simply the product of human nature.

On regarding public and personal health, in the history of Judaism, it is worth mentioning the importance of the prohibition of work during the sabbath. The Nazis, in the second world war, decided to labor during the seven days of the week, and within a few months their system crumbled down.

The rules of diet and personal hygiene established by Judaism, thousands of years ago, are of great value in the prophylaxis and treatments of many diseases, even today.

## Judaism

About literature, arts and philosophy, it would be just impossible to mention the most outstanding Jewish contributions. However, it seemed proper to mention Maimonides (1135-1204), born in Córdoba, Spain. His name was Moses Ben Maimon, also addressed as, RaMbaM, well known because of his efforts to reconcile Judaism and Aristotle. This attempt can be appreciated in his greatest philosophical work named, the "*Morah Nebuhim.*"

Besides being a philosopher and mathematician, he achieved deep talmudist knowledge and was decoder of Judaic laws. Some of his books are still preserved for religious services in orthodox synagogues. His major contribution to codify Judaic laws was the *Mished Torah* (Second Law), also known as "*The Strong Hand.*" He practiced medicine to make a living, was Saladin's private physician and it has been said that Richard the Lion-Hearted, offered him a similar position, that he declined.

Philanthropy will be of first importance to save humanity when 80% of the population will not be able to survive by themselves. The old Greeks, distinguished Eros, Phylia and Agape as forms of love. The Romans translated them in the same order as, Amore, Amicitia or Dilectio and Caritas, meaning, sensual love, friendship and charity. Spinoza, the celebrated Jewish philosopher, so admired by Einstein, stated that "Nothing like charity makes us feel closer to God."

## *Judaism*

It is well known the long list of Jewish philanthropists in the U.S.A. and in the world, as well. On regarding Jewish scientific contributions, it can be stated that, at present, the two greatest representations of scientific knowledge are the Theory of Relativity and Quantum Electro Dynamics (QED).

Both made possible the outstanding technological advances of this century. Everybody knows that Einstein, the single handed creator of the Theory of Relativity, was a German Jew, but it is not so well known to the general public, that the father of Quantum Mechanics, the starting point of QED, was Niels Bohr, a Danish Jew.

The final touch to QED was accomplished, by the following American Jews: Julian Schwinger, Steven Weinberg, Richard Feynman, and Sheldon Glashow. We also must mention, Abdus Salam, Muslim; Freeman Dyson, English and Sinitiro Tomonaga, Japanese, who made important contributions.

Although Einstein and Bohr could never reconcile their different scientific ideas and followed different ways to search for the truth, they admired each other and loved each other, until the end of their lives.

There will be a lot more said about them, later on.

# Chapter Four

## Islam

**RELIGION,**  
*science and economy*

## ISLAM

It means "To surrender to the will of God."

Only Allah is God and Muhammad His Prophet.

Muhammad was also a warrior, at age 40, while on retreat, he saw a figure, whom he later identified as the angel Gabriel, who forced him to repeat these words: "Recite; In the name of God, the Merciful and Compassionate.

Recite: And your Lord is Most Generous. He teaches by the pen, teaches man what he knew not."

The sacred book is The Koran, which means The Recital. Except in the opening verses and some few passages in which the Prophet or the Angel speaks in the first person, the speaker throughout is God.

The Islamic faith continues to expand, by some estimates, faster than any other major religion.

There is no sacrifice, including life itself, that a good Muslim would not do, gladly, to conquer after-life with Allah.

Muslims predominate in 30 to 40 countries from the Atlantic to the Pacific; it should be stated that less than one fifth of the Muslims are Arabs and not all the Arabs are Muslims. There are over two billion Muslims in the world, however, for many years their presence in the United States was not very conspicuous. Only the constant tension in the Middle East during the last decades, made the common American conscious of their presence, and so, it is easy to perceive a poor understanding of their culture and its meaning.

Islam dominated the world for many centuries, politically, scientifically and culturally.

They were responsible for the recovering of a good part of Greek knowledge that had been practically lost after the fall of Alexandria.

Muslim art has some peculiar characteristics; its beauty has the touch of down to earth, perishable beauty; it does not have the mystic orientation of the European Renaissance. There is not much literature dedicated to Islamic art and sometimes, the religious restrictions to reproduce human images, are not taken with rigid severity.

With regards to science, things have changed. Muhammad advised his followers "to look for knowledge even if they had to go to China." "He, who leaves his house to look for knowledge follows the way of Allah." Their achievements in mathematics, astronomy, architecture, medicine and philosophy were outstanding. In mathematics, al Khwarizmi, from whose name the word *algorithm* is derived, combined Hellenistic and Sanskritic concepts. The word *Algebra*, derives from the title of his major work, *Kitab al-jabr wa al-muqabalah* (The Book of Integration and Equation).

In Astronomy, some stars are still known by the names the Muslims gave them. Alpha Tauri, for instance, is Aldebaran="The Follower," because it rises after the Pleiades. Beta Persei, is Algol, the "Demon Star" (Arab: al-ghul=destruction) or "mischief maker," because of its condition of eclipsing variable that produces periodical changes in its brightness. The Arabs, may have observed those changes, even before the invention of the telescope.

Muslims, conquered the Arabian peninsula, Syria, Palestine, and extended Islam, into sub-Saharan Africa, Egypt, Iraq, Iran, Afghanistan, Transoxania, Turkey and northern India. The capital of the Abbassid Caliphate was Baghdad. In Andalucía (southern Spain), Córdoba was founded in 756, at first, as an Emirate and later, in 929, 'Abd ar Rahman III declared his independence from the Abbasids and created a second Caliphate.

They occupied Andalucía for 700 years, which means an era 200 years longer than the time elapsed since Columbus discovered America until today.

But Spain, was able to suffer their domination without giving away its own identity. Conversions to Islam were relatively small in numbers and Muslims never became a majority. Meanwhile, the Muslims changed the austerity of their way of living to enjoy the luxurious palaces of Alhambra and Generalife, in Granada. Here, architecture and decorative art developed what is known as, "*mudéjar*" style, in which human faces can be seen against the Muslim's religious restrictions.

Through the centuries they had to compete against the expanding European culture and the fast development of western industrialization. Progressively, the majority of their population was left behind in the competition to acquire scientific and technological knowledge. As it usually happens, the lower the educational level in science and humanities, the more man depends upon religion, superstition and "supernatural powers" to face his everyday problems.

Today, Westerners are beginning to accept that science and religion are not antagonistic forces. In fact, they simply exclude each other's field of action. It should be easy to understand that religion is based on faith and, by definition, faith does not take intellect into account to perceive God. Meanwhile, science must depend on reason to solve the puzzles of nature, but it does not deny that God is intellectually unreachable. The elusive mysteries of Creation will be an eternal challenge.

Muslims consider themselves, as religious men with a high level of morality, but to the eyes of the occidental culture, their conduct may pass the limits of fanaticism and irrationality. In reciprocity, all the characteristics of the American youth, already mentioned, are in Muslim's eyes, not only amoral but an insult to God. Nowadays, the greatest ideological confrontation in the world is represented, without any doubt, by Islamic fundamentalism against the western civilization, mainly the U.S.A. Too much misunderstanding, too much fear and suspicion are increasing the cultural gap in dangerous dimensions. It is very difficult for people without a proper education, to understand scientific achievements.

Radio, television, computers, space travels and the atomic bomb, should convince any reasonable person, of the truth that emerges from mathematical equations and scientific abstractions. However, religious fanatics dare show disbelief in science and they may even identify all its advances as satanic instruments.



In April 1995, Iranian police seized some 30,000 satellite dishes antennas whose owners violated a government ban on the equipment, to combat a Western "cultural invasion" and its evil influence. Unofficial estimates put the number of antennas around 200,000. At the same time, Reza Amrollahi, director of Iran's Atomic Energy Organization, confirmed that his country intended to build about 10 nuclear power plants in the next two decades, but denied charges by the United States that Iran is trying to develop nuclear weapons. He also said, that the year before he signed a contract with China for two nuclear power reactors and that Chinese experts had begun to draw up blueprints and engineering reports for a site in southern Iran. The country has already made a down payment for the project, which will cost \$800 million to 900 million. These enormous expenses are in contrast to the poverty in which the great majority of the Iranian population are living. Moreover, there is an increasing index of inflation that even makes the whole situation more difficult to understand, especially, when it is known that in addition to its oil sources, Iran has the second largest natural gas reserves in the world, and natural gas is much cheaper to develop than nuclear energy. This makes many U.S. officials believe that the interest is not the acquisition of energy for pacific purposes but that Iran wants nuclear power as part of a weapons program. They believe the Iranian government is determined to become a nuclear power or, at least, to confront the western civilization with nuclear terrorism.

The United States has led a campaign to prevent Iran from receiving any nuclear technology because of its suspected weapons program. Amrollahi's statements suggest that the agreement with China is more advanced than was previously known, and that Iran is planning a vast long range nuclear energy program.

At the summit meeting in Moscow, celebrated in May 1995, President Clinton tried, without success, to persuade President Yeltsin to abandon a nuclear energy program with Iran, arguing that its Islamic government had embarked on a crash nuclear weapons program and that even peaceful nuclear cooperation was dangerous.

During a meeting celebrated in New York, on April 1995, Secretary of State Christopher Warren, was similarly rebuffed when he made the same point to the Chinese Foreign Minister Qian Qichen. However, on September 1995, the Chinese government accepted the American proposition.

### **Islamic Philosophy.**

In the same way that Maimonides was mentioned in relation to Judaism, it seems fair, to mention Averroes as his Islamic equivalent.

His real name was, Abu'l Walid Muhammad ibn Ahmad ibn Rushd (1126-1198), he came from a wealthy family. His grand father and his father had been Judges of Córdoba and so was he. But because of his great success in the practice of medicine he became physician to the court and enjoyed the best relationship with Caliphs and notorious people.

He wrote several works about science, grammar, laws and philosophy. As it was mentioned before, he made great efforts to reconcile Islam with Aristotle's ideas, which produced very controversial results among Muslims. However, his work was highly appreciated by Christian and Jewish intellectuals who gave him the name "The Commentator."

Regretfully, due to the extreme sensitivity of Muslims in regards to their religious feelings, he was ostracized and his teachings did not have much influence in the Islamic world. Only before his death, was he accepted and commended by Islamic authorities.

After the Oklahoma bomb, Islamic leaders in the U.S.A have expressed that law enforcement officials and the media should avoid stereotyping which could lead to crimes against Muslims.

"This kind of broad characterization needs to be stopped immediately," said Abdul Mushin, spokesman for the Council of Mosques of South Florida.

"This religion is based on the principle of peace. We do not in any way, shape or form condone any acts of violence against innocent people."

Similarly, others have said there is no such thing as "Islamic terrorism" and claim that Islam and terrorism are diametrically opposed as far apart as light is from darkness. They claim, "true Islam, basically teaches the oneness of God, peace, respect for creation, tolerance and social order and complain that 'Islamic fundamentalism' is portrayed as

some sort of crazed, malevolent force responsible for fanaticism and mayhem. Real Islamic fundamentalism is pure beneficence, perfect law in original form. Its tenets are declaration of faith, prayer, fasting, pilgrimage and charity. Of course, defense against aggression (as in martial arts) is done. In these modern times *jihad* (holy war) is not by the sword, but by the pen."

"Anything else regardless of label, is not Islam. But whatever happens any place in the world they just put the blame on Islam and they don't wait until they know the facts."

Nevertheless, in spite of these claims, it is undeniable that Islamic governments like Iran, Iraq, Libya, Sudan and many militant organizations in the Arab world, as well, have engaged in terrorism as their most effective weapon against western civilization.

After the episode of the World Trade Center, in New York, and other aborted activities, it is only natural for people to associate Islamic fundamentalism to terrorism.

It was really a big surprise that the tragedy of Oklahoma was perpetrated by a group of outcast Americans.

Fanatics of any kind and, especially, when psychopathic personalities or paranoid schizophrenics are involved, have no idea of the value of human life, and are unable to feel pity or remorse. The sensation of guilt that a normal person, should feel at the act of murdering innocent victims, including children, has no place in the conscience of a sick fanatic.

Very probably, that was the case in the tragedy of Oklahoma.

The masses of people, suffering oppressive and tyrannical governments, who have no idea of the meaning of freedom and civil rights, but who are looking for any reason to vindicate themselves, can be easily moved when their repressed feelings are manipulated.

Many young Muslims go eagerly to register as volunteers to sacrifice their lives in acts of terrorism, to meet Allah. The great majority have not had a rational education, scientifically or humanistically oriented.

They totally depend on their great religious fervor and cultural values related to religion.

From the occidental point of view, the real problem is lack of knowledge and disturbed feelings.

They are considered ignorant and senseless fanatics. At the same time, from the Islamic point of view, occidental powers, in general, and Americans in particular, are arrogant infidels, who show contempt for their faith and their culture and should be punished.

With the cultural gap between Islamic countries and the Western civilization ever expanding, the difficulties to obtain a peaceful climate in the Middle East have to be equally aggravated. However, the "peace with honor" treaty signed in Washington at the end of Sept. 1995 by Israeli Prime Minister Yitzhak Rabin and Chairman Yasser Arafat, although full of uncertainty, may be a meaningful step to re-

duce the above mentioned gap between the Islamic countries and the Western civilization. There was hope that the assassination of Rabin, by Jewish religious fanatics, could make him a martyr and help the search for peace in the Middle East. Even Syria, that has been always reluctant to participate in the common effort, seemed to be willing to negotiate. However, the election of Binyamin Netanyahu, as Prime Minister, has created a different situation.

Netanyahu, is member of a family of war heroes who follows a harder line to defend Israel.

## Chapter Five

# The American Dream

**ECONOMY and SCIENCE.**  
**Religion.**

## THE AMERICAN DREAM.

This is a country which was founded by immigrants with strong religious traditions. In Europe, after the Reformation, the environment was dominated by political tension and religious intolerance.

When Martin Luther, (1483-1546), the main figure of the Reformation, nailed on the eve of October 31, 1517, on the door of the Wittenberg Church, the Ninety Five Theses relating to the indulgences and other improprieties attributed to the Catholic Church. he wrote: "I, Martin Luther, Doctor, of the Order of Monks at Wittenberg, desire to testify publicly that certain propositions against pontifical indulgences, as they call them, have been put forth by me...I implore all men, by the faith of Christ, either to point but to me a better way, if such a way has been divinely revealed to any, or at least to submit their opinion to the judgment of God and the Church. For I am neither so rash as to wish that my sole opinion should be preferred to that of all other men, ..."

But, eventually, Luther, the great man that wanted to be free from the Church authorities, did not want the same freedom for other men. He associated himself to the princes of Germany and protected by their power became a dictator acting in the name of God.

As it will be seen in regarding "Virtues and Human Nature," this behavior deeply disappointed Desiderius Erasmus, one of the greatest scholars of his times who had been an inspiration for Luther, himself.



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A generation later, in Geneva, the French theologian John Calvin (1509-1564) introduced, his own movement. It, was based on a refined and logically arranged system of morals, polity and dogma. At first, his followers did not tolerate the intended rigid discipline and Calvin was turned out of the city for three years.

Later on, they decided that the method could be good for their children. Calvin returned, on his own terms, which were comparable to the Spanish Inquisition. Those who objected to his ideas, had to leave the city, otherwise, were jailed or executed.

To give an example, Michael Servetus, was burned alive in Geneva. He was born in Spain, about 1511; his original name was Miguel Servet or Serveto. He had a turbulent life, as physician and theologian with unorthodox teachings that led to his condemnation as heretic by both Roman Catholics and Protestants.

About 1534 a rendezvous was arranged with Calvin in Paris to discuss theological questions, but Servetus failed to arrive. In 1546 he sent Calvin a manuscript of his *Christianismi Restitutio* and expressed his desire to meet him. In this book, Servetus **almost incidentally, made known his discovery of the pulmonary circulation of blood.** Calvin kept the manuscript but would have nothing to do with him. He declared to his friend, the French preacher Guillaume Farel, that if Servetus ever came to Geneva he would not allow him to leave alive.

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About 1,000 copies of a rewritten version of Servetus' manuscript were secretly printed in Vienna in 1553. When some of his letters to Calvin fell into the hands of Guillaume de Trie, he exposed Servetus to the inquisitor general of Lyon. He was put on trial but was able to escape and the Catholic authorities had to be assuaged with burning him in effigy. But, as a good Spaniard, he quixotically appeared in Geneva. He was recognized, arrested and tried for heresy from August 14 to Oct. 25 1553.

Servetus, was found guilty of heresy, mainly on his views of The Trinity and Baptism. Although Calvin's voice heavily gravitated on the trial and he wanted Servetus executed by beheading the "heretic" was burned alive at Champel on Oct. 27.

Among other things, Calvin required from his followers three important conditions: 1.- Strict religious up-bringing; 2.- High educational level to be able to serve God; 3.- Practical economical orientation (he permitted them to charge interest on money loans).

If we ask: Are these conditions equally present in American culture? We have to admit that the first one has been left quite behind the others.

To aim towards a high educational level has been rewarded with the outstanding scientific and technological development of the U.S.A. The positive feed back, so common in complexities, seems to operate between science, technology and economical development.

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The scientific and technological advances have created significant strongholds in Macro economy and Micro economy, as well. They have been important factors to establish the existent Econocracy.

The majority of the immigrants that came from England and Northern Europe, were looking for political freedom, religious tolerance and better opportunities to make a decent living. A great variety of protestant churches proliferated and people learned to accept each other's preferences, notwithstanding, the hard lines of conduct exhibited by some leaders of the Reformation.

However, in spite of that tolerance among the different branches of Protestantism, the symbolic distance between Boston and Brooklyn was difficult to span. A Jew, though being a genius, had a hard time to be accepted in Harvard.

Irish, Polish, Italian, Spanish, Oriental and many others may be included in the long list of discriminated victims. But the conditions of the black American communities have been much worse and even today their plight should be everybody's concern.

So far, the extreme right organizations, as the Ku Klux Klan, the Neo Nazis and different "militias" that are anti Semitic and anti black, are demonstrating their aggressive reactions, directed "against the government and the establishment, including the judicial system."

The car bomb in the Federal Building of Oklahoma, on the 19 of April, 1995, has been related to the deaths of the

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Branch Davidians in Waco, Texas, which occurred on the same day of April in 1993. This horrible tragedy seems to have been perpetrated by a group of psychopaths. Additionally, the ethnic intolerance may produce violence, with tragic results, whenever and wherever.

For instance, after O.J. Simpson was found not guilty, it has been said, that some right extremists could take revenge against him and some of his lawyers. The Nation of Islam provided bodyguards to protect them shortly before the end of the trial.

Modern militias have been defined as "formed by angry white men, armed to the teeth, that hate federal government, worship God and rant against gun control, abortion, taxes and crime." They are basically white supremacists, Christian fundamentalists that can be easily compared to the Muslim fundamentalists. The Michigan Militia is supposed to have over 100,000 members in 24 states and there are others of similar sizes throughout the U.S.A.

The suggested possibility of high incidence in psychopathic aberrations, should be taken into account as an important factor that makes these groups even more dangerous. Discrimination and bigotry, have always been everywhere. Race and religion have been very sensitive sore spots in human history. Religion and moral values have obviously declined in the make up of the younger generation. The old religious foundations of this country cannot be, in any way, related to the exhibited behavior of the crowds at-

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tracted to a Pop “concerto,” where the filthy, vulgar, and grotesque aspect of the performing “stars,” very often under the effect of drugs, display unequivocal gestures of sexual depravation. Sorrowfully, those so called “celebrities” are admired and imitated by our youth. The enormous amount of public in their performances surpasses, by far, what is regularly seen in any artistic presentation. Movies and TV are other examples of the same aberrations, plus crime and violence. It makes everything more disturbing, to know the opinion of certain critics and academics, looking for values behind this nation’s pop culture. American popular culture, some say, “is undisciplined, colorful, noisy, artistic. It is everything that is American; the history people live every day. And it is more than the sum of its parts.”

More than 2,200 academics meeting in Philadelphia in April 1995 tried to make sense of different corners of the American experience, presenting hundreds of papers directed to winnow an explanation.

Ray Browne, a Bowling Green State University professor who 25 years ago founded the nation’s first academic department to study mass culture, said: “Popular culture is the *driving machine of all that we are*. It is what has developed democracy through the ages. It is the culture of the unfranchised.” But, if we ask, for goodness sake: Where is that driving machine taking the American culture? It would be very easy to find the right answer if we just look back into history. We could see, then, that this celebrated behavior is not new.

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It existed, long ago, in Sodom and Gomorrah.

All my life, I have tried to keep away from politics, but I wonder how significant the following could be. Senator Robert Dole has introduced the subject of promoted sexual depravation, violence and crime as an offensive activity against the American family.

He mentioned by their names, aggressive movie industries, which have no other concern than making money, and said on May 31-95: "A line has been crossed, not just for taste but of human dignity and decency. It is crossed every time sexual violence is given a catch tune. When teen suicide is set to an appealing beat. When Hollywood's dream factories turn out nightmares of depravity."

Ergo, it is not surprising to find in a report of political contributions which covered the first nine months of 1995, that the entertainment industry, the media, lobbyists and lawyers were the most supportive groups for President Clinton. Lawyers and lobbyists donated \$2.6 million; entertainment industry over \$300,000, (more than they gave to all Republican candidates combined). On the other hand, Senator Dole has been reported to receive the support of the tobacco companies, held responsible of a horrible genocide, and the gambling companies with similar amounts. Obviously, virtues cannot afford that kind of money to support a candidate(!!)

It should be known that violence is a painful part of life. Animals kill and are killed in obedience to the genetic code written in the DNA molecule.

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It is understood that very often, **genes** prevail, and they do not carry information for individual goodness, happiness or even survival, their aim is the successful preservation of the specie.

The proud *Homo sapiens* shares the same DNA, although, the extraordinary development of his brain and *epi-genetic* factors related to culture and environment may influence human behavior in different ways. Therefore, we can find instinctive animal reactions sometimes minimized by conscience and morality, but they also may be enhanced by hate, prejudice and fanaticism.

As a result, *Homo sapiens* has become the greatest predator on earth and, violence, has been a permanent and notorious factor in the historic evolution of this country, **as it has happened elsewhere.**

To conquer the West, a horrible génocide was perpetrated against the Indians. Their population was reduced from about 2 million to 300,000. The heartbreaking history of the American West narrated by Dee Brown in his memorable book "Bury My Heart at Wounded Knee" can give you a heavy heart.

The American Civil War offered the bloodiest episodes in the history of the U.S.A. In the "Battle of Gettysburg" from the 1st to the 3rd day of July, 1863, the Northern troops lost 23,000 men out of 88,000; while the Southerners lost more than 20,000 out of 75,000.

Famous bandits and criminals emerged after the war.

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Gun fighting, bank robbery and killing innocent victims became expected daily occurrences in the West.

During the Prohibition, criminal gangs in Chicago and other big cities, forced the American population to live in terror.

Today, drug traffic and intolerable environmental conditions maintain an astonishing level of violent crimes. Child abuse and spouse battering painfully proliferate in different stratus of the American society.

Besides all these sorrowful experiences, we find, as a concomitant phenomenon the promotion of despicable scoria into "idols" and "celebrities." This has happened through all the American history. The names of Jesse James and his brother Frank; Bonnie and Clyde, Capone, Dillinger and many others, are just examples of glamorized infamous outlaws.

Books, newspapers, movies and T.V. programs change the image of the worst public enemies and create a myth around them, mainly to make money.

We should ask: Does it have to be that way or can we do something about it? May be, biology, anthropology, sociology, economy, Chaos and Complexities, will provide interesting and unexpected answers.

Genetics, Darwinism, and Wilson's Sociobiology, have offered the necessary foundations for the new science of Evolutionary Psychology, presented by Robert Wright's in his incisive book, "The Moral Animal."



At the same time, a new paradigm for evolutionary biology has been introduced with the works of Christopher G. Langton, from Los Alamos National Laboratory, Norman Packard, from the University of Illinois and Stuart A. Kauffman, from the University of Pennsylvania, who postulated the *theory of the self-organization in complex adaptive systems*.

Although the concept of self-organization with spontaneous emergence of order is observed throughout nature, so far, no systematic effort has been made to incorporate that mechanism into Darwin's Evolutionism.

Kauffman, in his provocative book, *The Origins of Order*, claims that Darwinism cannot explain other sources of order based on the internal genetic and developmental constraints of organisms and on the structural limits and possibilities of general physical laws. He says: "The growth of complexity really does have something to do with far from equilibrium systems building themselves up, cascading to higher and higher levels of organization. Atoms, molecules, auto catalytic sets, et cetera. But the key thing is that once those higher level entities emerge, they can also interact among themselves. ...So you get a hierarchical cascade from lower-order to higher-order things- each going through something like this autocatalytic phase transition."

It is quite possible, that in the near future, with a better understanding of Chaos and Complexities, these new ideas will expand the horizons of Evolutionism.

## Chapter Six

# The Black American

The epigraph is mine

## THE BLACK AMERICAN

From bondage  
to the dream of freedom.  
Uncharitableness and bigotry  
in between.  
With the shame of ignorance,  
and the pains of poverty,  
Where is the dream?

The disregard of virtues and the ominous inter ethnic hostility converge to create one of the most difficult problems in American society. The racial factor is more important in the evolutionary process of this country than many different ideological attitudes. Ideologies are intellectual abstractions with emotional implications, but being a black American includes: economical, educational, social and human aspects, associated to frustration, rebellion, anger, bitterness, hate and a high incidence of crimes. A problem, which is waiting for an acceptable solution, since long ago. Black men compose only 6% of the general population but about 50% of the imprisoned and even if we admit that they are put in jail easier and faster than white men, this is just another condition associated to the absence of family values, rude socioeconomic environment and a low level of education.

Similar conditions prevail around the world as a result of the International Econocracy that dominates governments of almost any country from the poles to the equator.

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Fat corporations, bureaucratic institutions of bankers and lawyers, with power to impose whatever Economical Model they dream of, take human beings as guinea pigs to please their insatiable greed. They should know that in the models of dynamic systems such as the positive feed back constantly increasing their power, the emergence of cataclysmic crisis is unavoidable. Econocracy is going to Econocraziness.

The symbolism of economical status, must be revisited. This is the richest country in the world and it has 40% of its economical reserves in the hands of 1% of its population. Therefore, we have the widest gap between the wealthy and the poor, among all the industrialized nations; a fact that affects all races but specially the black Americans.

The ostentation of luxury and the ever increasing ways of spending money, promoted by thousands of TV commercials and other sources, stimulates an obsessive moneymaking attitude, united to the ambition of power and the pursuit of deceiving pleasures. In one breath it increases the discomfort of those who suffer extreme poverty, cannot afford the same dissipated way of living and do not have the same kind of justice, either. In both cases, the very rich and the very poor, are lacking an inner life and the essence of real happiness. Consequently, they are easy prey to narcotraffic and drug consumption, associated with ever increasing crime and violence.

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Before going any further, let me say that I do not like the euphemism "African American." It seems to involve a lack of identity or a substitution of identity to overcome the tensions of accumulated painful experiences. In many cases, as in The Nation of Islam, the process includes a supposed conversion to Islam and the acquisition of a new Arabian name. But there are, for instance, Arab-Americans, that could be described as African American Muslims who are not black. The meaning of a word depends, very often, on the intention with which it is used and received. I admire black Americans, sure of themselves, not embarrassed by the word "black". It reminds me of the old "Ebony" magazine and its slogan: "Black is Beautiful."

In the last sixty years, although slowly and still inefficiently, there have been important changes favorable to the black Americans and, without any doubt, these changes must continue and should be accelerated. Among other things, a new leadership and a coherent program is badly needed.

Some black activists claim that the changes obtained in the 1940 and 1960 decades reached a stand still situation. But never before have so many black people been admired and respected, and have occupied so many important positions in public offices, in prosperous private businesses and brilliant independent professions, as

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can be seen today. However, resentment and belligerence can be noticed in every group of experts related to the Simpson trial, and on every TV program. Not only people with a low level of education, but even some with academic status, show the above mentioned feelings, with fanatic passion. They alienate many white people that are on their side and want to improve the inter racial relationship.

Yet, it was in 1954, when the Supreme Court rejected "*separated but equal*" in *Brown vs Board of Education*.

During the last two generations there have been a quadrupling of the number of black professionals and managers as well as an increase of families with incomes over the \$50,000 in the same proportion. That has been the greatest economic advance for any group in American history in the shortest period of time.

But the constitutional elimination of segregation and the improved economical status of a group, is still a far cry away from achieving equality and the end of racism. There are more people in poverty today than there were before the application of the last rules for improvement. At the same time, the number of impoverished white families has increased and as a result many whites are resentful of affirmative action and other similar programs. Washington Post columnist, William Raspberry, has stated that civil rights movement was a successful battle against "the external enemies of

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black progress." It is time now, he adds, "for a full-scale movement against the internal enemies of our progress. A movement in which blacks have to be led by blacks although society in general can play a supporting role."

The absence of an effective leadership offers an incredible opportunity for demagogism, which explains The Million Man March successfully organized by Louis Farrakhan in Washington.

After a period of uncertainty under the leadership of Wallace D. Muhammad and the assassination of Malcolm X, Farrakhan, became the first figure of the Black Muslim Movement, preserved the name of The Nation of Islam and sustained its founding principles. He is known as a hate filled demagogue ready to exploit sexism, anti-Semitism, anti-Catholicism, and anti-white feelings. Although, on this occasion he advised the public to go to church, to look for spiritual and family values, to keep away from drugs, not to kill except in self defense and expressed he is ready to dialogue with Jewish leaders, his main objective seems to be the moneymaking device. It has been said that he offered his political influence to Muammar Gadaffi for 1 billion dollars. But it is well known that the Libyan is not easy to deal with and for that amount of money Farrakhan may be forced to commit intolerable acts against this country or be severely punished for not delivering what was expected.

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But why can't someone organize a movement founded on No More Hate. No White Hate. No Black Hate. No Color Hate. No Race Hate? A plea for better education, better opportunities to make a decent living, a stress for family values based on virtues to prevent crime and violence. And above all, a better judicial system able to provide justice for all and no more justice for sale.

Right now, General Colin Powell is a new black star with undeniable ascending trajectory. However, the strongest criticism against him has come from Rev. Jesse Jackson, a notorious civil right activist who considers himself a member of the counterculture pressing for change. He tried to be the first black presidential nominee, but has yet to be offered a relevant position in any administration. In an interview for the *New Yorker* he said, Gen. Powell is a member of the dominant culture "capable of being a conduit for racist positions." "There is always a tendency to try to position people they feel comfortable with, and what is amazing about Powell is he has created a comfort zone among the guardians of the culture." Colin Powell considers, and rightly so, that what has been pointed as a negative aspect is, indeed, an asset. He says, he is accepted by whites because he does not shove race in their face, "bring any stereotypes or threatening visage to their presence," nor make whites uncomfortable around him. He takes pride in his interracial social



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skills while he has never denied his African ancestry. It should be about time that we accept the possibility of a unified culture without being opposed by a counterculture. It would be ideal if everybody could feel the same comfortable sensation when blacks and whites are together. Let's try, for a change, to be closer to each other as parts of the same American culture. Is it naive? It may be. But it does not have to be necessarily unreachable.

Demagogism and political interests do not really help. For instance, although many black Americans still favor Affirmative Action, others, have expressed their opposition. Hispanics and other minorities have followed suits and in California it was legally abolished. In the South-East, The Mason-Dixon Florida Poll found in a statewide survey, strong opposition to affirmative action.

Aggressive and incendiary speeches are not the best way to conduct an impatient youth ready to revolt.

They need no help to increase their anger.

Wisdom is the strength of a leader and irrational fanaticism is a weakness. No one should forget the greatness of Martin Luther King Jr. Rights must be conquered and defended. Problems should be faced with integrity.

There must be endurance and responsibility to meet the challenges of adversity. Let's teach our youngsters that going after easy money, risking their lives in gang fights and

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breaking the law, cannot be the answer. Many black Americans have succeeded because they tried very hard and so they are respected and admired. It is undesirable to expect solutions coming from somewhere or somebody else.

Pride and self esteem are very often associated to a sense of responsibility and education; they cannot be built on their dependency from the government or any other political institution. Black Americans have relished the black lawyers of the defense in the Simpson trial and have enjoyed the overwhelming majority of black people in the jury. This has been a great advance in civil rights, something that older generations would have never thought possible. But at the same time, there should be concern with the possibility of a set back. The credibility of black people as mature citizens engaged in the search for justice, has been at stake. Did each and all of them perform the sacred duty of making justice? Were they able to evaluate the meaning of the convoluted scientific evidences presented by the prosecution? Did they believe their loyalty to O.J. Simpson should prevail in their decision? Were the jurors afraid to face their families, friends and neighbors if O.J. Simpson was convicted?

It is regrettable that this trial has ignited dangerous confrontations between black and white Americans when such episodes should have been conquered, long ago.

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Traditionally, lawyers and politicians have developed the mastery of being untruthful with impunity. They learn how to use part of the truth embellished and disguised in such a way that easily deceives the unwary. Many cultivate this behavior to the point that it becomes a professional second nature and are proud of it. Professors of Law, shamelessly advise their pupils to lie whenever it helps win a trial. Their only objective is to win. It means money and fame. Truth and Justice do not count. A society cannot afford that behavior.

On a TV program, a lady said that in the courtroom, the only difference between God and a lawyer is that God does not believe He is a lawyer.

I regret I did not write down the name of that lady.

It has been said that regardless of whatever evidence presented by the prosecution in the Simpson's criminal trial, that jury would have never convicted the defendant. If that is the truth, what have the black Americans gained? How long can this elation last? Will they realize they deceived themselves? The majority of black Americans are convinced Simpson is not guilty and complain that white Americans do not believe a black jury is able to act consciously and objectively. But the majority of the white people are equally convinced, this jury did not pass the test and acted improperly, disregarding evidences of guilt beyond any

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doubt, following only the instructions coming from the defense to send a criminal free. A verdict should never be the product of irrational fanaticism. It should be rendered after a thoughtful analysis of evidences and serene dialogue in careful deliberation. That was not the case. One juror, in spite of the instructions of the judge, said that espousal abuse was a waste of time and had no place in a criminal trial. With great emphasis added that *somebody had planted the glove and there was not enough blood*. Obviously she had only paid attention to the defense. She did not care what the prosecution's closing arguments were. She did not hear Nicole's imploring voice. Another juror showed the fist of Black Power and said: We won. (!!).

Enough is enough.

It is really disturbing to see many lawyers enjoy the possibility of a defendant, declared non guilty even if he committed the crime. They exhibit their cynical smiles and do not care if their attitude is offensive to those who revere truth and justice. They claim that in the Simpson trial, the defense was able to create "reasonable" doubt and that's all they needed. They seem to ignore that *reasonable* means *the proper use of reason supported by wisdom and knowledge*. Sorrowfully, neither was a deciding factor in the analysis of all the evidences presented by the prosecution. But the day in which advanced forensic science provides

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that amount of scientific evidences to a scientifically minded jury, there will be no doubt to convict the guilty. Then, everybody will be happier except the criminals and the defense lawyers, who will not be able to celebrate the desecration of justice to obtain fame and money.

The idea of playing the ethnic card in the Simpson trial, has shown the enormous tension building up because of racial attitudes. It seems, that the black American jurors guided by ancestral experiences and lacking the necessary scientific knowledge, were unable to project the image of wisdom and probity that the black community deserves. We must remember that justice excludes all but one decision.

We may hope that the trial will open new roads to a better understanding between Americans of all races.

If the the jurors did not render the right verdict, it would not be fair to put all the blame on them. The system, to say the least, is inefficient. In this case, the truth of the matter is that black people cannot identify themselves with a society that has neglected and rejected them. Therefore, they could not care less for the pains inflicted on that society. They have endured too much pain of their own. After suffering chronic injustice they have a different perception of what justice is. They did not see the victims from the society's perspective. All their lives, they have been victims surrounded by victims. Some black people even rejoiced and

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felt the pleasure of revenge. Some said: "Now you know how it feels." And on bearing that heavy emotional charge, a misled jury rendered a pay back verdict.

Before the trial, many white people seemed oblivious to the existing racial tensions; they paid no attention and looked away. Today, most white Americans are disappointed and offended. From now on, they may be more conscious and less tolerant of the pugnacious black attitude. New confrontations might jeopardize the accelerated social progress, so badly needed.

It may not be a simple coincidence that the Bureau of Alcohol, Tobacco and Firearms (ATF) has investigated 51 church fires since 1995, mainly at black churches in the South. The burning of black churches has created an "epidemic of terror." In the first four months of 1996, 24 churches were reported to the Justice Department and 17 involved largely black congregations.

However, can white Americans be magnanimous enough, to rise above the painful frustration and finally realize what black Americans have suffered for centuries, swallowing the bitter taste of injustice? If so, the actual animosity could subside.

There is much to be done to break the existing vicious circle and it seems the right moment to quote President Truman's words right after World War II had ended:

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“What we have achieved in liberty, we will surpass with greater liberty.” But, also, black Americans should make better use of the liberty already obtained.

They should admit, at least, the possibility of being wrong, although at times, it seems very difficult for many of them to do so. They should argue with less excitement. It is not necessary to be so bellicose and obstinate to state their case. Obviously, they do not have to reject O.J. to appease the white main stream, but they do not have to embrace him just because he is “a brother.” Something he had never alleged to. He should not be embraced to show rebelliousness either. It does not help and it may back fire. To take a stand it is unwise to be guided by blind emotions. A proper hierarchy of values based on virtues gives the best orientation. Blind emotion is the enemy of self-criticism while self-criticism may help to solve many difficult situations. It should be known that in the end, if truth and justice prevail, minorities should receive the greatest benefits. Black Americans should realize how significant it is to protect the environment in which their children grow up. Their language is frequently copied from the lyrics of Pop music and Rap songs in which the “singing stars,” who very often look dirty, are wildly dressed and display grotesque gestures with vulgar insinuations such as middle fingers up, wide open mouths and protruding tongues. Those are the false heroes and ce-

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lebrities that children and youngsters constantly watch on popular TV programs to eventually, imitate them. Consequently, they acquire this unconventional aspect and behavior. It seems fair to say that, recently, common white people were not so aggressively anti black. Their greatest sin may have been indifference and a keeping away attitude. However, even this, was not due to racial antagonism, but mainly, to the above mentioned, unconventional aspect and behavior, many blacks display.

Without any doubt, if the same common white Americans, were to see a group of blue eyed, blonds, long, dirty, uncombed hair, earrings, exposed hairy chest, tat-tooes on their arms and speaking in a loud rude manner, they would also keep away, just to be prudent.

Let's hope that the Simpson trial, after having exposed the increasing racial tension may open new roads to mutual understanding and bring both sides closer to each other.

Let's pray that historical bitterness and rhetorical madness do not add unnecessary suffering.

Let's dream that Schiller's "Ode to Joy" and the notes of the Ninth Symphony find a place in the heart of humanity with the immortal message that "All mankind are brothers plighted."



## Chapter Seven

### Virtues and Human Nature

**The Homo sapiens seems to evolve towards a Moral Animal,  
but he is, still, the most dangerous animal.**

## VIRTUES AND HUMAN NATURE

In agreement with Buddha's Eightfold Way, it could be said that virtue is the habit of thinking, feeling and acting in the right way to enjoy happiness.

Spinoza declares that "the good which everyone who follows after virtue seeks for himself, he will desire for other men; and his desire on their behalf will be greater in proportion as he has greater knowledge of God."

According to Kant, "the connection of virtue and happiness may be understood in two ways: either the endeavor to be virtuous and the rational pursuit of happiness are not two distinct actions, but absolutely identical... or the connection consists in this, that virtue produces happiness as something distinct from the consciousness of virtue, as a cause produces an effect."

In his conception of the *summum bonum*, Kant says that "Morality is not properly the doctrine of how we should make ourselves happy, but how we should become worthy of happiness." Kant insists that "Virtue is its own end, and by deserving well of men is also its own reward."

Plato and Aristotle give somewhat different enumerations of virtues, but both of them do agree that courage, temperance and justice, are fundamental.

Aristotle divides all virtues into moral and intellectual. Wisdom, science and "intuitive reason" which Aquinas later calls "understanding," represent the intellectual virtues.

Plato, in the Republic also adds wisdom to the previous three. Meno, in the corresponding Plato's dialogue asks the following question: "Can you tell me, Socrates, whether virtue is acquired by teaching or by practice; then whether it comes to man by nature, or in some other way? Socrates, explains that, first, some other questions should be faced: what virtue is, how virtue is related to knowledge, whether virtue is one or many, and if many, how the several particular virtues are related to one another. It seems that neither practice nor teaching may explain how men become virtuous, and even less why virtuous fathers should so often fail to produce virtue in their sons."

Socrates does not dismiss the possibility that "virtue comes to the virtuous by a divine gift."

Since this dialogue punctuate that inheritance cannot be related to virtue, we should mention the works of Gregor Johann Mendel, Johann Miescher and Oswald Avery as pioneers in genetics to explain the essence of inheritance.

Sir Francis Galton (1822-1911) had introduced the concept of Eugeneticism, before Mendel's works. Its original meaning was: "good breeding," with the implication that intelligence and virtues were much easier to obtain by arrangement of marriages between well to do families.

In 1865, Mendel, a catholic priest, published his paper, "Experiments on Hybridization of Plants" that was ignored until 1900. In it, he introduced a quantitative system to determine the transmission of inherited characteristics. He per-

ceived the existence of “unities” which he denominated “elements” and were able to combine and recombine transmitting specific characteristics from one generation to another in a predictable way. It is really amazing, how his description of those elements corresponds to our concept of “genes.”

In 1868, three years after Mendel's paper had been published, Miescher, a brilliant, 24 years old student from Switzerland, went to Tübingen to study under Ernst Felix Hoppe-Seyler, the man that gave hemoglobin its actual name. He was particularly interested in the chemical study of the cellular nucleus; it is worthwhile to point out that, even today, it is very difficult to separate the cytoplasm from the nucleus. He obtained a “substance” that he called “nuclein,” which later, was identified as deoxyribonucleic acid (DNA) associated to a protein, commonly found in the nucleus of highly developed animals. In 1870, he was able to obtain DNA, practically, purified. The term “nucleic acid” was introduced by Richard Altman, in 1889. Miescher pointed out that some of the large molecules encountered in biology, composed of a repetition of a few similar but not identical small chemical pieces, could express all the rich variety of the hereditary message, “just as the words and concepts of all languages can find expression in twenty four to thirty letters of the alphabet.” But the similarity between his description of those big molecules and our genetic code, was mostly coincidence, since he was talking about protein molecules and aminoacids, instead of nucleic acids and nucleotides.

It was Oswald Avery, working in the Rockefeller Institute of New York, who reported in *The Journal of Experimental Medicine*, (1944) that nucleic acids were the real molecules related to genetics and not the proteins.

Finally, the scientific basis of genetics and inheritance were firmly established since April 25, 1953 when Francis Crick and James Watson published in *Nature* a paper of 128 pages under the title "A Structure for Deoxyribose Nucleic Acid." They obtained the tridimensional double helix structure of the marvelous DNA molecule, opening the door to understanding its function. In December of 1962, they received the Nobel Prize for physiology or medicine together with Maurice Wilkins. Soon after, Jacques Monod and François Jacob, from the Institute Pasteur deciphered the "Genetic Code." They received the Nobel Prize in 1965.

However, when Edward O. Wilson, the great American entomologist published, in 1975, his celebrated book, "Sociobiology: The New Synthesis" controversies emerged. Wilson worked with insects of the order Hymenoptera, (hymen=membrane, pteron=wings) including ants, bees and wasps that live in communities of complex organizations and have a caste system within each group. Termites are the only insects with a similar organization which are not hymenopters but apterous (no wings). At first sight, it would seem a long shot to extrapolate from ants to man. But, as it so happens, all living beings, animals and vegetables, have in common the same DNA molecule, although with relatively small

variations that show the difference from one specie to another and from one individual to another, as well. Wilson, also postulated that our religious, moral and ethical values are the product of our genetic components.

For people like Adams Sedgwick and his followers this would be unacceptable because "changing God's design by a strictly material process is equivalent to denying morality its fundamental nature."

People from the left wing of politics, attacked Wilson. In those days, any support to genetics was taken as pro-Nazi, since they proclaimed the theory of the super-race. In Russia, Trofim Denisovich Lysenko, one of Stalin's favorites, intended a total exclusion of inheritance from soviet biology. Whoever followed the genetic approach of inheritance, was accused of being anti-revolutionary, pro-western bourgeois or pro-Nazi, which could have been enough to outcast any one from the party and from academic life.

In 1963, William D. Hamilton, designed the theory of *kin selection* which, at a glance, seems to imply that from the Darwinian point of view, selection may be applied to the family. *But it means, indeed, that it is the gene itself that really counts.*

The final objective is the preservation of the encoded information it contains, which is shared with several members of the family. If one of the member sacrifices his life to protect the family, a greater number of their genes will be saved. The prairie dogs are a good example of this behavior.

Going back to Greece, we find in the *Corpus Hippocraticum*, the concept of *khymos*, that was translated into Latin as *humor*, a fluid present in the normal changes that occur inside the organism. That was the starting point of the so called "humoral doctrine." In the early Western interpretation of physiology, still current in the Middle Ages, there existed four cardinal humors: blood, flegma (lymph), cholera (yellow bile) and melancholy (Gr.melanos=black+chole=bile) black bile. The variant mixtures of these humors in different persons determined their "complexions," or "temperaments," their physical and mental qualities and their dispositions. The ideal person had the theoretically proportioned mixture of the four humors. A predominance of one produced a person who was sanguine (Latin sanguis=blood), phlegmatic, choleric or melancholic. That approach has some similarity with the association of personality traits, related to three main spheres: Intellect, Consciousness and Emotion. The three spheres interact with each other to produce several different personalities, although they keep a certain degree of independence. The intellectual sphere relates to the acquisition of knowledge and, obviously there will be variations depending on the genetic make up of the individual, in that capacity. We can improve the acquisition of knowledge by education, but nothing can change the level of intelligence with which each person was born. Likewise, some people may develop the sensation of guilt with almost insignificant stimulus, while another person can commit a crime without

remorse. And there is no way to teach that person how to feel guilt, remorse or compassion. It is well known that some people, even without real motivation, react with a high emotional pitch, while others stay calm in similar situations.

Emotions play the most important part in human behavior. "Feelings are more powerful than reason" said the Spanish philosopher Miguel de Unamuno. Moreover, as it was explained before, God is perceived only by emotion, we may feel Him by faith, but without any intellectual implication.

Animals facing danger react either by running or attacking. It is an instantaneous instinctive response to fear. Man, instead, has the opportunity of deciding what to do, after intellectually analyzing the situation.

By the same token, love in animals is purely instinctive, while man has extended the meaning of love to reach new emotional dimensions. It also happens with hate. Sexual characteristics are added and the enormous extension of ranges for each one of the spheres and the keen interaction among them may create an infinite variation of individuals, but it is always possible to establish several patterns, to obtain a limited group of consistent personalities.

For instance, there are people with normal or higher than normal intelligence, with low consciousness awareness and variable emotional reactions. These people may be successful leaders, they use good logical reasoning and their conscience does not create obstacles to attain their goals. These traits define the so called, psychopathic personality.



In another case there is the history of a child that looked very intelligent and psychologically advanced for his age, although with a tendency to keep to himself without even playing with other children. The family had great expectations for him, thinking that the child could even be a genius. But in the middle of his teens, he began to look awkward and to do unconventional things until he behaved in a completely abnormal way. That could describe the schizoid personality. More common is the case of people, with normal intelligence and with a very high emotional pitch, afraid of many things specially of being sick, with a tendency to feel guilty without real justification. They are commonly defined as "very nervous." That would describe the psychoneurotic personality.

Each one of these cases, may stay in precarious balance but able to interact as acceptable normal individuals until the equilibrium is broken in a crisis. Then, each personality develops its proper clinical picture and is not supposed to show symptoms of another personality. It means, that the psychopathic personality **may commit a serious crime that he believes is justified because the victim deserved it.**

The schizoid personality will develop an open schizophrenia and the psychoneurotic personality will have a neurotic crisis with anxiety, psychosomatic syndromes, etc.

It is obvious that to obtain knowledge it is necessary to be born with a minimum of intelligence, but the possessi-

on of knowledge does not guaranty the acquisition of wisdom or any other virtue. Courage can never be taught to a neurotic and, by the same token, the interpretation of justice, will not be normal in the psychopathic personality. It can never be taught, either.

In the opposite side of eugeneticism was the Freudian school. Sigmund Freud (1856-1939) was, originally, an organicist and therefore, closely related to the concept of genes. But he progressively oriented his work toward the more abstract field of psychology. To facilitate its understanding, the main subjects of his conceptions will be presented in a simple way. One of his postulates was the existence of the preconsciousness that may be represented as a storage room, for emotions expelled from consciousness because they are painful, unpleasant and intolerable. However, not all emotions in the preconscious have been repressed.

Freud described the *preconscious*, the *unconscious* and the *conscious*, plus two forces acting upon them: *repression* (directed from consciousness to unconsciousness) and *resistance* (to prevent the entrance into consciousness). Nowadays, the term subconscious is a colloquial expression. Freud offered one sketch to explain the basic components of the mind:

1. The **Ego** in the middle of two forces:
- 2.- The **Id** deep unconscious and
- 3.- The **Super Ego**.

The instinctive reaction is pure unreasonable desi-

re, including the worst and most amoral. The function of the super ego is to control those impulses to obtain an ideal, by telling *what should be done* and *what should not be done*. The character of the ego would be the result of the interaction of the other two. Freud described the newborn as a sexually perverted creature. Psychosexual development and its complicated stages were paramount in psychoanalysis. Freud introduced the famous Oedipus's complex and its feminine counterpart, the Electra's complex, in psychopathology.

He established the method of free association and the sexual symbolism in the interpretation of dreams to study the material that has been expelled from consciousness by repression. Freudian psychoanalysis was more successful philosophically than in clinical practice and it worked much better in the treatment of neurosis than in schizophrenic or psychotic patients.

Obviously the last two conditions are genetically dependent above external factors. While, in neurosis, the problem is fundamentally emotional and therefore much more related to environmental stimulus.

Modern psychiatry has departed from orthodox Freudian conceptions, however, Gerald M. Edelman, who obtained the Nobel Prize for Physiology, has stated in his book "Bright Air, Brilliant Fire" published in 1992, that the existence of the subconsciousness and other Freudian concepts have received new organic substantiation from the new mapping of neuron's distribution, recently introduced.

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Carl Gustav Jung (1875-1961) and Alfred Adler (1870-1937), should be mentioned. Jung introduced the concepts of introverted and extroverted personalities, the archetypes and the *collective unconscious*. All of them have been influential in psychiatry, philosophy and anthropology. Adler, introduced a very effective method of individual psychotherapy and the term "inferiority feeling." This, however brought into fashion the expression, "inferiority complex" that created confusion in the layman's mind. It may be useful to say that a repressed inferiority feeling may be expressed by an overcompensated reaction that shows all the opposite. This has been translated by the known expression: "Let me know what you are bragging about and I will know what makes you suffer." Let's hope, these comments may help to understand how genetics and environment may work to develop human behavior and the meaning of virtues in "human nature."

Man, could be taken as a good example of Bohr's Principle of Complementarity: *Contraria non contradictoria sed complementa sunt.*"

Opposite concepts are not necessarily contradictory and complement each other.

Man stands in the middle of vice and virtue; between weakness and temperance, with a brain able to separate time from the continuum spacetime of physics, to project an exclusive image of the universe, that exists just for him and because of him.

Blaise Pascal, (1623-1662) French mathematician, physicist and religious philosopher, founder of the theory of probabilities, said that human beings live their lives midway between the infinitely large and the infinitely small, meaning that man is nothing in comparison to the infinite, and everything in comparison to the infinitesimal; a mean point between everything and nothing. "Man is but a reed" he said, "but a thinking reed."

Although we may never know whether somewhere else in the universe, another process, similar to what we call life, has developed with a mechanism equivalent to evolution, so far, only the human brain has the power to separate time as a fourth dimension with which our exclusive notion of past, present and future is obtained. But, as it was already mentioned in the Introduction of this book, sometimes, our marvelous brain cannot prevent that we behave as the most irrational of all creatures. Man is the greatest predator on the planet, responsible for the extinction of many species and, one day, he could provoke his own extermination.

With an extraordinary immunological system he is, already, intending to colonize other worlds, but he, persistently, shows his incapacity to preserve the one in which he came into being. He is convinced that he is the only conscious observer of the Creation and believes his presence in the universe has a special meaning, which he relates to God. But, as it was beautifully expressed by Lucretius, since man learned there is an eternity before his birth and another after

his death, he knows how ephemeral his existence really is, and he has not been able to cope with it. His fear of death produces anxiety and other forms of neurosis and intending to escape, he has invented life after death, with resurrection and reincarnation. He created gods and attributed them the immortality he wanted for himself. He built pyramids, and statues and has even pretended to be a god. But he usually fails when he has to face the reality of his final moments. The more, if he has not been a virtuous man. Contrariwise, those who found happiness in their own wisdom, devoted to justice and immersed in the serenity of their inner lives are not afraid to die.

Unfortunately, to be a virtuous man is a very rare privilege. Many great scientists, artists and religious leaders, have been proved responsible for non virtuous acts.

*The convergence of virtues and vices is a dominant characteristic of human nature.*

Leonardo, Luther, Giordano Bruno, Galileo, Newton, Darwin, Schrödinger, and many others could be taken as examples.

Leonardo da Vinci (1452-1519), is one of the greatest models of privileged intellect in the history of mankind. He was, indeed, "the personification of the belief in the native genius of man" and the highest representation of the Renaissance. He accumulated an almost incredible amount of knowledge and wrote before Copernicus: "The sun does not move." He transformed the art of painting, invented machines

that would work in the future and was the discoverer of many secrets of nature that no one had been able to see before him. However, he had no wisdom nor temperance and was all but a virtuous man. Leonardo was one astonishing and exceptional product of our complex human nature.

Martin Luther, (1483-1546), was the driving force of the Reformation. With a firm belief in the rightness of his purposes, he changed the world's way of living, forever. Early in his life, he had an inner struggle between his big Ego and his search for faith that induced him to be a penitent. It is known by his own statement, that he was "struck by the omnipresent hand of God when he took refuge from a thunderstorm in the countryside." He joined the Augustinian order of hermit monks, was ordained a priest and continued with his theological studies. In 1510, he made a trip to Rome and climbed the steps of St. Peter's on his knees; but the immoral life of the priests and cardinals, with their cynical attitude to the church's rites they themselves performed, shocked him. As it was mentioned before, on Oct. 31, 1517, the eve of All Saint's Day, he made public his act of protestation at Wittenberg. He received support from German nationalists and humanists including Erasmus. However, most of non German humanists turned their backs on him, later on. The German princes, put their military and economical power to back him as a leader, but eventually they were the authority and he had to please them. During the infamous Peasants' Revolt, in 1526, over 100,000 peasants were killed after Luther advis-

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ed the princes to “exterminate, slay; let whoever has the power use it.” Therefore, Luther, in spite of his religious image, is not the best example of a virtuous man. No wonder his personal relations with Erasmus ended so sourly.

Desiderius Erasmus (1469-1536), recognized as the greatest European scholar of his time and better known as Erasmus of Rotterdam, was the second illegitimate son of a priest and the daughter of a physician. He became an Augustinian monk at age 21, but soon after he was expressing his disgust about the monastic life and the false pretension of Christianity inside the Catholic Church. He insisted in looking for real Christianity in the classic works of the Greeks and learned their language with that purpose. Once, reading Cicero and other moralists, he was carried away: “A heathen wrote this to a heathen, and yet his moral principles have justice, sanctity, truth, fidelity to nature, nothing false or careless in them...When I read certain passages of these great men I can hardly refrain from saying, St. Socrates, pray for me.”

He was a great traveler from northern Europe to Italy and England. While in Rome he showed total disregard for the art of the great painters. His emotional sphere seemed unmoved in that direction as it was his sensuality, as well. His sharp sense for satiric writing can be appreciated in his famous book, *The Praise of Folly*, in which he attacks the formalism of churchmen and the greed and stupidity of monks. Erasmus conceived this work while he was crossing the Alps



and it took him a week to write it, in England, during a visit to his dearest friend, Thomas More. He was a humanist who believed in the goodness of man, in justice, peace and freedom. His work inspired Luther and Calvin, but they could not appreciate his wisdom and prudence. Once, Luther wrote him a letter asking for his support and calling himself, brother in Christ. Erasmus' answer was smooth but clearly negative: "Dearest brother in Christ, your epistle showing the keenness of your mind and breathing a Christian spirit, was most pleasant. I cannot tell you what a commotion your books are raising here (he was at Louvain). These men cannot be by any means disabused of the suspicion that your works are written by my aid and that I am, as they call it, the standard-bearer of your party...I have testified to them that you are entirely unknown to me, that I have not read your books and neither approve nor disapprove anything... I try to keep neutral, so as to help the revival of learning as much as I can. And it seems to me that more is accomplished by civil modesty than by impetuosity."

Erasmus was very much concerned with the possibility of a violent confrontation between Luther and the Catholic Church, that could destroy the intellectual advances obtained by the humanists. Eventually, Luther was declared heretic by a papal bulla and he burned the bulla in public. He went in hiding and many people believed he was dead. Erasmus, insisting on his intended peaceful position, commented: "All men have not strength for martyrdom."

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But it was not only his temperament which made Erasmus keep away from Luther. He found Luther's opinions more and more disgusting. Finally, he was forced to write a book against Luther and he selected the topic of Free Will, because it could allow him to disagree without using harder terms. But Luther answered in such a way that Erasmus, finally, decided to speak his mind out and wrote the following: "Your letter was delivered to me late and had it come on time it would not have moved me...The whole world knows your nature, according to which you have guided your pen against no one more bitterly and, what is more detestable, more maliciously than against me...The same admirable ferocity which you formerly used against Cochlaeus and against Fisher, who provoked you to it by reviling, you now use against my book in spite of its courtesy. How so your scurrilous charges that I am an atheist, an Epicurean, and a skeptic help the argument? It terribly pains me, as it must all good men, that your arrogant, insolent, rebellious nature has set the world in arms..You treat the Evangelic cause so as to confound together all things sacred and profane as if it were your chief aim to prevent the tempest from ever becoming calm, while it is my greatest desire that it should die down... I should wish you a better disposition were you not so marvelously satisfied with the one you have. Wish me any curse you will except your temper, unless the Lord change it for you." In the meantime, Erasmus failed in mollifying the Catholic Church; he had to leave the University of Louvain to

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go to Switzerland. He was accused of "having laid the eggs which Luther hatched" although he protested that he "laid a hen's egg but Luther hatched a bird of a different breed." The *Praise of Folly* was placed in the index of forbidden books; the work on the New Testament was expurgated and Erasmus was condemned as "an impious heretic."

Today Luther's work is recognized at all levels of mankind, notwithstanding his non virtuous character; while Erasmus, being an example of wisdom and prudence, is only known by a minority of people who have a high education. However, we should pray that this country may find many Erasmus, successfully preaching moderation.

Giordano Bruno (1548-1600). His real name was Filippo Bruno, but later on, because he was born in the city of Nola, near Naples, he was called Il Nolano. Philosopher, astronomer, mathematician, early humanist and occultist. He introduced the theory of the infinite universe and the multiplicity of worlds in which he rejected the traditional geocentric criteria and intuitively went beyond the Copernican heliocentric theory, which still maintained a finite universe with a sphere of fixed stars. He anticipated Galileo by maintaining that the Bible should be followed for its moral teaching but not for its astronomical implications.

He entered in 1565 the Dominican convent of San Domenico Maggiore in Naples and assumed the name Giordano. Because of his unorthodox attitudes, he was soon suspected of heresy.

However, he was ordained as a priest in 1572. A trial for heresy was prepared against him and he fled to Rome in 1576, where he was unjustly accused of a murder. He abandoned the Dominican Order and went to Geneva in 1578 and earned his living by proofreading. Formally embraced Calvinism but soon found out that this Church was as intolerant as the Spanish Inquisition.

He moved to France and was appointed by the King, as "*lecteur royaux.*"

In 1583, he went to London and wrote about his theory of the universe. Eventually he had to return to France where the political environment had changed and soon he entered into a polemic and had to leave Paris.

In 1591, he went back to Italy, invited by Giovanni Mocenigo, a Venetian patrician. He looked for an academic platform to project his theories and intended to obtain the chair of mathematics at the University of Padua, but the vacancy was offered to Galileo in 1592. He returned to Venice, but somehow, Mocenigo was disappointed by his private lessons and resentful of Bruno's intention to go back to Frankfurt, denounced him, in May 1592, to the Venetian Inquisition for his heretical theories. He was arrested and tried. Later on, the Roman Inquisition demanded his extradition and on Jan. 27, 1593 he entered the jail of the Roman palace of the Sant'Ufficio (Holy Office). His trial lasted seven years and finally he was sentenced as an impenitent and pertinacious heretic.

On Feb. 8, 1600, when the death sentence was formally read to him, he addressed his judges saying: "Perhaps your fear in passing judgment on me is greater than mine in receiving it."

He was burned alive in the Campo de'Fiori with his tongue in a gag. His theories influenced 17th century scientific and philosophical thinking and since the 18th century, have been absorbed by many modern philosophers. Giordano Bruno has been a symbol of freedom of thought and inspired the European liberal movements of the 19th century. His cosmological vision anticipated some fundamental aspects of the modern conception of the universe and his ethical ideas appeal to modern humanistic activism.

Galileo (1564-1642), one of the greatest scientists in history, was a difficult person. He was described, at times, as selfish, arrogant, nasty, dishonest and opportunist. He presented himself as the inventor of the telescope, until it was known that the credit belonged to Dutch craftsmen.

He never offered Kepler one of his instruments while he gifted them to rich people without any scientific interest, looking for retributions and favors. Galileo treated Kepler disdainfully, notwithstanding, the latter could have been a great help to support his ideas.

Isaac Newton (1642-1727). On different occasions, it has been scrutinized who should be acknowledged as the first scientist in human history. Almost regularly, the results will have Newton first and Einstein second, or else, Einstein

first and Newton second. However, Newton was an egocentric, distrustful paranoid, with a tendency to fall into very deep depressions. More than once, he wrote offensive and defamatory letters to his best friends. He discovered calculus simultaneously with Leibniz, but he invented an esoteric system of notation in order to prevent other people from taking advantage of his discovery. Consequently, England was left behind, as continental Europe went ahead with the help of Leibniz method. He believed in occultism, disliked music, paintings, sculptures and even poetry. He scornfully rejected interviews to men like Franklin (although he was still very young at the moment) and Voltaire. He never knew love and probably died virgin.

Newton was, really, an unpleasant person.

Aldous Huxley said: "Newton, as a man was a failure, but as a monster, was magnificent."

Charles Darwin (1809-1882) is introduced as a very special case. The word, *vice*, seems to be out of context regarding his personality. But he showed the instinctive animal reaction that we have encoded in our DNA, when he had to face the possibility of forfeiting the paternity of his beloved theory on natural selection. Alfred Russel Wallace had sent him a letter in which he enclosed a paper ready for publishing. Darwin was astonished when he read it. That paper contained, practically, all the ideas he had developed during two decades. Being a gentleman he could not act, consciously, in an improper way. But he was unable to accept the fact

that someone else, could take from him, the credit he thought he deserved. However, although he had worked so hard and for so long on those ideas he had never found the courage to publish the theory because of the expected reaction of the establishment, the religious condemnation and even the reproach from his own wife. Perhaps, if Wallace had not sent him that disturbing letter, he would have imitated Copernicus and would have kept silent until the last minutes of his life. Pretending to be neutral in such a difficult situation, he presented the problem to his good friends, Charles Lyell and Thomas Huxley and asked them to find a solution. He was really asking them to save him. But he had to deceive himself, as not being a participant in their decision. However, how could they ever act against the interest of a good friend to favor an unknown competitor? He knew that whatever they would decide had to please him.

Allow me to quote from Robert Wright's already mentioned book "The Moral Animal," the following: "It is true that Darwin was as gentle, humane, and decent a man as you can reasonably hope to find on this planet. But it is also true that he was fundamentally no different from the rest of us. Even Charles Darwin was an animal." "... Beneath Darwin's pangs of conscience lay moral positioning. Beneath his reverence for men of accomplishment lay social climbing. Beneath his painfully recurring self doubts lay a fevered defense against social assault. Beneath his sympathy toward friends lay savvy political alliance. What an animal!"

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This example shows how easily we can deceive ourselves when we wish to keep a honorable position intending, at the same time, to defend our personal interest.

Erwin Schrödinger (1887-1961), was a brilliant scientist; his equations were of first importance in the development of Quantum Mechanics. But his morals and ethical values were far from acceptable. Wherever he was invited, he shamelessly exhibited his mistress and demanded she receive the treatment of a legitimate wife. He had no scruples to show off love affairs with the wives of his close friends. On one occasion he organized an international press conference to make public some pretended discoveries, with which, he claimed to have refuted Einstein's ideas. But the whole thing was just trickery to get some needed economical support for his academic program. Obviously, these episodes show that scientists are human beings with great intellectual faculties, but able to exhibit the fragility of our human nature. Notwithstanding, they are, as a rule, respectful of truth in their search for knowledge and when they are conscious of their human weakness they do much better than those who, *a priori*, disregard the value of truth, scientific or otherwise, and shamelessly introduce misleading and spurious arguments to obtain personal benefits.

Although, keeping a distance, I have included the case of Kary Mullis, as an example of the scientific innovator, left behind, unable to follow up the advancements derived from his own discovery.



Mullis spent the first week of August observing Dr. John Gerdes' testimony during the Simpson trial. He exhibited his peculiar demeanor, smiled and waved his hands to the TV camera. He had been announced as a witness for the defense, but eventually his name was dropped from the list. Obviously, they did not want to take the risk of his presentation. Mullis devised what has been called, *polymerase chain reaction*, (PCR) which represents a great achievement in the study of genetic material. He received a share of the 1993 Nobel Prize in Chemistry, together with Michael Smith. But, Mullis, is a rather controversial person inside the scientific world and outside, as well. For instance, he denies the importance of HIV virus in the etiology of AIDS and he has had a very dissolute life. Among other things, he was exposed as a frequent user of lysergic acid diethylamide (LSD), which is a powerful hallucinogen with deleterious effects on the brain. Schizoid and psychotic crisis may appear even after the drug has been suspended.

In the heat of legal debates during the Simpson trial, the prosecution minimized the value of his opinion because of his way of living. The possibility of cerebral damage due to frequent use of LSD and other toxic substances has been mentioned to assume that his brain may not be working today as it worked three years ago.

On the other hand, the defense claimed that his behavior could not take away the merits of his Nobel Prize and insisted he should be accepted as the main authority on PCR

because of paternity rights. This attitude, however, shows lack of knowledge. To my mind, he deserves recognition and even gratitude for the benefits the scientific world has obtained from his work. He will be, forever, the pioneer. However other researchers in the same field have added new knowledge, expanding the horizons of his discovery and they should receive credit for their contributions.

Nevertheless, it must be established, that there have been more important examples in the history of science, in which the authors of transcendent works were unable to follow the steps of those that came after them and pushed forward their original ideas.

That happened with Max Planck, Albert Einstein and Niels Bohr, as protagonists, in the fascinating evolution of Quantum Mechanics and Quantum Electro Dynamics. This is, indeed, a beautiful story. Its meaning is such, that it cannot be compared with the above mentioned example.

It will be presented, soon after, with moderate scope.

## Chapter Eight

### Science

**In Science, the search for Truth is paramount and restricted by Natural Laws that are not man-made.**

**Meanwhile, in "good lawyering" Truth and Justice are dispensable under the "legality" of lawyer's arguments.**

## SCIENCE

To say that science is an important factor in our way of living, is an understatement. However many people are unaware of all its meanings. Moreover, the enormous difference in personality traits, between scientists and persons dedicated to other important human activities, must be taken into account to understand the actual hierarchy of values related to the previously mentioned Econocracy.

Most scientists are obsessed by the pursuit of truth and their dream is to learn the secrets of nature. They are a rather peculiar breed that, very often, consider moneymaking a secondary issue.

Many students, on selecting their major subjects, shy away from mathematics, physics and chemistry and become well educated and successful in other activities, but they resent science. Unfortunately, the main reason to maintain this attitude is their limitation to cope with the rigorous disciplines of science. *Science is universal, impersonal and detached from banal issues.*

Science and technology have been fundamental in the development of America's economical power. But the fast growing commercial activities, the proliferation of big enterprises, corporations, insurance companies, the interaction between the many financial entities, including international commerce and the participation of the government's Internal Revenue, made necessary a system of regulations and many complicated legal mechanisms.

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Lawyers were needed everywhere and, as a result, this country with about 5% of the world's population has close to 40% of the lawyers practicing in the planet. They represent the most powerful profession with 866,000 members of the Bar in the U.S.A. They make the laws and, it is no wonder, they protect themselves and the many privileges of their lucrative profession.

The cover of "U.S. News and World Report" magazine, of January 30 1995, had the image of Justice being eaten by rats. There was a title in black letters that read: "How lawyers abuse the Law" and another in red letters: "The death of common sense in America."

They mention Professor Lester Brickman, of Cardozo School of Law, in New York who argues that "Americans are furious that law has assumed an all-prevailing role in society, and they sense that 'enormous amount of outright fraud are committed by lawyers.' The legal system for all its worthy principles and for the good it does in safe-guarding American rights and righting wrongs is out of whack in ways far worse than even conventional wisdom has it."

Lawyers have transformed many important aspects of the American way of living. For instance, years ago, a physician was relatively independent, respected, and admired. The practice of medicine used to be one of the most gratifying human endeavors, dedicated to health care, to prevent

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unnecessary suffering and, when possible, to defeat death. There was a very especial relationship between physicians and patients that, at many times, lasted for several generations. Love and compassion used to be the heart and soul of the medical profession. Not many physicians became rich, but nothing else would allow one person to accumulate so much love and affection in a life time.

Regretfully, such praise worthy conditions have disappeared. Today, although medicine has obtained undeniable benefits from science and technology, it has lost a great deal of its human flavor. Only big institutions can afford the very expensive equipment necessary to apply modern technology in medicine. Because of that, physicians have relinquished their independence. They are, practically slaves, working for a financial monster with board of directors integrated by lawyers.

The malpractice and health insurance, also managed by lawyers, destroyed the symbolism of medicine and changed its spiritual value into unpleasant business. It is difficult to explain the moral and physical detrimental effect that a man who loves his profession feels, when he receives an unexpected and undeserved malpractice accusation. The more when it comes from a patient that he deeply cares for. But that patient acted because his lawyer put the idea of profit in his mind and made malpractice arraignment.

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It is well known that some physicians deserve to be charged with malpractice, but life was less unpleasant before these legal accusations became fashionable. The recent notorious case of New York City's lawyer Morris Eisen and his associates, "having potholes enlarged with pickax to bolster personal injury claims, has been taken as an example of the part that lawyers play in fomenting bad or even fraudulent litigations for their own profit which ranges from subtle to flagrant, from billing for dubious items or coaching witnesses to dramatize their injuries."

The participation of lawyers in serious public health problems has been pointed out in the Editorial page of the Journal of the American Medical Association of July 19, 1995, under the title: The Brown and Williamson Documents, from which we quote: "There is a massive body of evidence, derived from many scientific disciplines, that tobacco is addictive and kills smokers. Up to half of those who continue to smoke cigarettes will die prematurely from diseases caused by smoking, half of these deaths occurring in middle age."

"Peto et al have calculated that of the 1.25 billion people now living in developed countries, 250 million will, if present tobacco consumption patterns are maintained, die from tobacco. With 3 million deaths worldwide each year currently due to tobacco use, the consequences of tobacco to the public health have been, and will continue to be, stagge-

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ring, and the importance of bringing this hazard under control is correspondingly great." "Stanton A. Glantz Ph.D., professor of medicine in the Division of Cardiology at the University of California, San Francisco, and a scholar interested in the field of tobacco and public health, has accumulated thousands of pages covering a 30 year period from the Brown and Williamson Tobacco Corporation (B&W) and its parent company, the British American Tobacco Company (now BAT Industries)." Different sources have added similar amounts of important information. The following statement is taken from the Editorial:

"That research conducted by tobacco companies into the deleterious health effects of tobacco was often more advanced and sophisticated than studies by the medical communities."

"That executives at B&W knew early on that tobacco use was harmful and that nicotine was addictive and debated whether to make the research public."

"That the industry decided to conceal the truth from the public."

"That the industry hid their research from the courts by sending the data through their legal departments, their lawyers asserting the results were immune to disclosure in litigation because they were the privileged product of the lawyer-client rela-



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onship and that despite their knowledge to the contrary, the industry's public position was (and continues to be) that the link between smoking and ill health was not proven, that they were dedicated to determining whether there was such a link and revealing this to the public, and that nicotine was not addictive."

It is obvious that even the possibility of endangering the lives of millions does not stop the greed of big business nor the help provided by tortuous legal procedures and corrupted legislation.

Gerry Spence presented in a brilliant and courageous TV program, the names of Congressmen, Senators and politicians that have received thousands of dollars from the tobacco companies. These monsters have a pay roll of many millions to be used against the creation of inconvenient laws. Spence exposed what he called a conspiracy between lawmakers and tobacco industries to perpetrate a genocide at universal levels. To guarantee an increasing amount of consumers, these horrible pushers have programmed the induction of our children into the deadly tobacco addiction. Tobacco kills more people than AIDS, cocaine, heroine, and automobile accidents put together.

The disarray of our hierarchy of values based on money is horrendous.

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When people with high education, in positions of power and supposed to be responsible for the welfare of the country, as politicians, lawyers, physicians and other professionals disregard the most elemental principles of decency to grab dirty money, what can you expect from the poor and ignorant?

The income of a ball player, sometimes with poor education and using drugs is astronomical; a boxer with a criminal record, just getting out of jail, received the incredible amount of \$25,000,000 to fight for 89 seconds. In a second fight he obtained \$30,000,000 and complained because he had not received what he deserved.

To make things even more painful, scientists and philosophers are really underrated and very often are not taken into account. Many scholars in the highest academic position and Nobel Prize winners together, can never get close to such incomes. Of course, it is inconceivable to attract thousands of fans at a ball park or arena to see a scientist writing equations. However, mankind benefits from them, much more than many people can imagine.

If Americans enjoy such a high standard of living which allows them to spend millions and millions of dollars on leisure, entertainment and drugs, it is due to the many scientific and technological contributions which are taken for granted by the public.

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Although, science in itself, is closely related to virtue it has been, at the same time, an important factor to maintain the sins of Econocracy. Mammoth corporations have perverted the positive feed back between science, technology and economical development and have produced a negative influence in modern societies. As a result, the many controversial aspects regarding the meaning of science, throughout history, are still alive in this marvelous 20th Century. The general public and many people with high academic status, do not have a clear view of the intendment of science.

### **Science and Religion.**

Science and religion have been historically considered as antagonistic to each other. Just to give some examples, it is worthwhile to take a glance at the lives of Copernicus, Giordano Bruno and Galileo. Even today, in the western civilization, science, humanities and religion can only be reconciled, at a high level of education. Many scientific authorities have declared that the more science advances the greater is the necessity of God.

The best example to explain the role of authority is Aristotle. His name gravitated in such a way over human thoughts that, science, philosophy and religion were related to his words. It has been mentioned before, that Aquinas intended to reconcile Christianity to Aristotle, Maimonides did the same with Judaism and Averroes with Islam.

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Aristotle's influence was so dominating that it prevented the advance of science for millenniums. For instance, his opposition to Democritus and the conception of the atom, retarded, until recently, the introduction of such powerful ideas, accepted today as fundamental in the structure of the universe. However, that does not mean, that any claim may tarnish Aristotle's colossal image.

In modern times, after the theory of relativity was confirmed, Rabbi Reubenstein, sent Einstein a telegram with a prepaid answer, asking whether he believed in God. He responded: "I believe in Spinoza's God who reveals himself in the harmony of all that exists, not in a God who concerns himself with the fate and actions of men."

That is, without any doubt, a deeply religious answer and many scientific oriented people would accept it as their own, but, probably, many religious fanatics will not be satisfied with such a God.

It is worth mentioning, Paul Davies, an Australian physicist, professor of natural philosophy at the University of Adelaide and author of more than 20 books, including "God and the New Physics" (1983); "The Mind of God," (1992) and "The Last Three Minutes," (1994).

On receiving the \$1,000,000 Templeton Prize for Progress in Religion he said: "The prize is a recognition to my belief that scientific research illuminates theological issu-

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es, and that no religion that ignores these advances can remain credible." "By affirming that science and religion can engage in a constructive dialogue, the Templeton Prize serves to remove one of the abiding myths of our age: that science is dehumanizing and that scientists peddle a message of despair." "I for one will continue to teach my message of hope."

In the U.S.A., science has obtained an enormous development while religion has obviously declined. The predominant economical interest in the American way of living, has reduced some "Christian" churches to profitable businesses, with infamous preachers living in luxury and traveling in private jets. Some have been convicted of enormous frauds against their followers, others have been protagonists of scandals with prostitutes and some have been accused of sexual molestation of children. Nowadays, the religious marketers have become a rising force in American society who say, churches are too sanctimonious and poor competitors against popular culture. The Rev. Tom Slack has said: "The churches are starting to use marketing language, and they are using it unashamedly ... People who don't get out there and sell it don't get the constituencies." In one ad there is a picture of Elvis Presley and the image of Christ side by side and it reads: *"Elvis may have risen to the top of the billboard charts, but it is Jesus who rose from the dead. Join us*

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*this Sunday as we celebrate his resurrection and the gift of everlasting life.*" No wonder, religion has declined in the United States.

Israel is a country with the deepest religious foundations and yet, at the same time, it has emerged as a scientific power. To say that religion plays an important part in every public and private aspect of life in Israel, is an understatement and, at the same time, its scientific development may be represented, among other things, by the capacity to use nuclear energy and to put artificial satellites in orbit.

In Islamic countries the presence of religion is overwhelming while science has been left behind. Therefore, it seems reasonable to admit that regarding the equilibrium between science and religion, Israel, has been able to preserve this privileged position much better than the United States of America and Muslim countries.

One of the marvelous things about science is to see people with different nationalities, races and religions, all working together in the search for truth, without thinking of making a profit. That was accomplished by Neils Bohr, in Copenhagen, when he introduced the foundation for Quantum Mechanics. Great men, some extremely young, came from everywhere; inspired with much higher values than money and changed the whole universe, forever.

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### The story of the Quantum.

Just about a century ago, Lord Rayleigh, a very meticulous English physicist, worked out an equation which showed, exactly, that the radiation emitted by a black body augmented steadily as frequencies increased.

However, in actual practice, a frequency peak was reached, after which, in spite of producing higher frequencies, the quantity of radiation decreased again. Physicists referred to this prediction of the Rayleigh equation as the "Violet Catastrophe." See Appendix.

The equation was worked out according to the best founded theoretical principles, but the catastrophe did not take place. No one could find a proper explanation until 1899, when Max Planck, proposed that radiation ought to decrease as frequency decreased. He was able to work out an equation that described black body radiation very nicely, in the low frequency and in high frequency range, as well. But to do that, important innovations were necessary.

First of all, energy was not radiated continuously, but in packages equivalent to "energy atoms."

Those "atoms" had different sizes proportionally related to the frequencies. Since the issue was: How much energy did each atom contain? The "energy atom" was named, a *quantum*, which, in Latin, means, *how much*.

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Planck presented, in 1900, the equation  $e=hf$ . Here  $e$ =energy,  $f$ =frequency of the radiation and  $h$  a constant of action that was named, after him, as *Planck's constant*. **This was the starting point of Modern Physics.**

In 1905, Albert Einstein, a hardly known theoretical physicist, at age 26, took over Planck's revolutionary ideas with great enthusiasm and was able to explain the "*photoelectric effect*." Until then, it had not been possible to find such an explanation and because of that paper, Einstein received, in 1921, the Nobel Prize, for Physics.

As an incredible example of productivity, Einstein wrote in the same year of 1905, four other papers, of which, the last two, contained what would be known as "The Special Theory of Relativity." This will be seen, again, later on.

In the meantime, Planck was very concerned because Einstein was pushing Quantum ideas much too far. He even regretted, to having written his theory and, in a letter he wrote on behalf of Einstein, claiming that the young physicist should be forgiven for his immature enthusiasm. To understand Planck's worries, we must go back in history. It so happens, that in the seventeenth century there was a sharp dispute concerning the nature of light. Christian Huyghens and his followers believed that light was a wave phenomenon similar to sound. But Newton, whose name meant so much, believed it was a stream of very small and fast moving



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particles. Different experiments supported each point of view and in 1801, Thomas Young, an English physicist, obtained an image of "interference" that seemed to be quite convincing in favor of the wave theory.

Finally, in 1873, James Clerk Maxwell, developed his revered and untouchable equations, with which he unified Electricity and Magnetism. He predicted that electromagnetic waves could be generated in a laboratory and established that, in fact, light represents a little window of visible frequencies in the electromagnetic spectrum.

In 1887, Heinrich Hertz confirmed his predictions and the industry of radio communication was born.

After this explanation, we can appreciate Planck's concern about Einstein's work. He did not want to have a confrontation with Maxwell's equations, but since Einstein treated light as a stream of particles, he was running fast in that direction. Interesting enough, Einstein himself, worshipped Maxwell's equations, as well, but he was extremely self confident and a rebel. He would not dare say Maxwell was wrong, but he knew, he was right. Gilbert Lewis, in 1926, introduced the name **photon** for Einstein's light corpuscle.

Eventually, Niels Bohr, offered an unexpected solution: Light could be both things, wave and particle, depending on the experiment with which we observe it. This was a brilliant example of his already mentioned, Principle of Com-

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plementarity and one of the many anti intuitive ideas characteristic of Quantum Mechanics. Ironically, Einstein treated Bohr in the same way Planck had treated him. He could not follow Bohr's steps in the development of Quantum Mechanics and Quantum Electrodynamics. They went in opposite directions in their search for truth till the end of their lives. Einstein was always looking for simple, elegant and harmonious equations to explain the secrets of nature. His exceptional esthetic feelings could not accept a scientific theory without a rigid demonstration of an objective truth.

The whole conception of quantum mechanics could not be reconciled with Einstein's perception of physical reality.

The so called "Copenhagen Interpretation" of QM, introduced by Niels Bohr and his followers, admitted no objectivity and its corner stone was the celebrated, Heisenberg's Uncertainty Principle.

It should be explained, however, that there is no such thing as a written statement to define what is, indeed, the Copenhagen Interpretation.

It so happens, that in the nineteen twenties Niels Bohr created, by disposition of the Danish Government, a scientific paradise at the *Universitetets Institut for Teoretisk Fysik*, (today named *Bohr's Institut*) under the *Royal Danish Academy of Science*.

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Scientists from all over the world came to study under the guidance of Niels Bohr and it may be pointed out, as an amenable detail, that many of the students enjoyed fellowships sponsored by the Carlsberg Brewery.

From George Gamow's evergreen book, *Thirty Years that Shook Physics*, the following: "Bohr's Institute quickly became the world center of quantum physics, and to paraphrase the old Romans, 'all roads led to Blegdamsvej 17.' ... "Many theoretical physicists from Europe and America went to Copenhagen for a year, two years or more and then returned again and again. In the later years: P.A.M. Dirac and N.F. Mott from England; H.A. Kramers and H. Casimir from Holland; Wolfgang Pauli, Werner Heisenberg, M. Delbrück and Carl Weizsäcker from Germany; L. Rosenfeld from Belgium; S. Rosseland from Norway; O. Klein from Sweden; George Gamow and L. Landau from Russia; R.D. Tolman, J.C. Slater and J. Robert Oppenheimer from the U.S.A.; Y Nishina from Japan, etc. One of the more colorful visitors was Paul Ehrenfest, a professor at the University of Leyden, born in Vienna 1880, etc. etc."

Bohr postulated that science can only intend to offer reasonable subjective explanations of nature but will never explain nature itself. In any scientific experiment the observer has to be considered as a determinant factor involved in the obtained result.

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Since then, it was understood that it is not possible to obtain an objective truth. According to the Copenhagen Interpretation, the microscopic properties of a quantum particle must be viewed against the total macroscopic context.

Bohr insisted that In the quantum world two distant but correlated accomplice particles, subjected to measurements, forms an inseparable part of the quantum system. There is an implicit and inviolable " quantum wholeness"

Although no direct signal or influence can travel between A and B, that does not mean, according to Bohr, that you can ignore measurements carried out on B when discussing the circumstances of A. So, although no actual physical force is transmitted between A and B, they seem to cooperate in their behavior in a sort of conspiracy.

Einstein compared Bohr's explanation with a "ghostly action at a distance." He wanted his objective reality to be localized on each particle, and it was this locality that was eventually to bring his ideas into conflict with quantum mechanics.

To expand the horizons of the scientific world introducing new paradigms, rigid scientific rules must be taken into account, new sophisticated equipment which allows confirmative methods are necessary and a constant renovation of the scientific lexicon to explain the emerging new ideas.

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After the Bell's Theorem (John Bell 1965), A. Aspect , J. Dalibard and G. Roger published in Physical Review Letters (1982), a definite solution to the problem. Modern technology allowed them to prove, experimentally, that Bohr was right. See Appendix.

### **DNA and Enzymes.**

#### **The life carrier molecules.**

The layman will have difficulties to understand this subject since it requires, at least, some knowledge about biochemistry, physiology, molecular biology, genetics, statistics, etc.

Even the most elemental introduction, will demonstrate that he, the layman, should not have the last word regarding this type of scientific evidence in the courtroom.

It seems advisable to start with some basic concepts about the chemical structure of common organic compounds before presenting DNA. The chemistry of living organisms (organic chemistry or chemistry of Carbon) includes carbohydrates (sugars and starches) lipids (fats and oils), proteins and nucleic acids.

Sugars, starches and fats contain Carbon, Hydrogen and Oxygen. Compared to proteins and nucleic acids, they are much simpler compounds that provide the necessary energy for the cells to perform their functions. Proteins represent almost the whole cellular body (Cytoplasm), also con-

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tain Carbon, Hydrogen and Oxygen, plus Nitrogen and, very often, Sulfur and other elements. They are very big molecules (macromolecules), formed by long twisted chains folded many times. Occasionally they may take a globular aspect. The links of the chain consist in smaller molecules, named *aminoacids*. In total, 20 different amino acids are involved.

There are various types of proteins, but the most important and, at the same time, more numerous, are the enzymes. These are natural catalysts that control all the different biochemical reactions that make life possible. There are important differences between combustion in general and the same process with the participation of enzymatic activity. If we take a piece of sugar cane to make fire, we will obtain heat and flames. Combustion means oxidation, which in this case, is the combination of oxygen with sugar. But when we eat sugar, oxidation takes place in a very different way due to enzymatic control, with which, there is a step by step process that allows the cell to use the energy, slowly and selectively. Some intermediary products are formed and they will combine with other molecules to perform other functions.

We will find enzymatic activity working with other very different purposes. Urea, for instance, is a by product of protein catabolism. One important chemical reaction, called *hydrolysis* (destruction by water), takes place to break urea's molecular structure.

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If you let hydrolysis happen by itself, it will take a very long time. But with the participation of an enzyme (*urease*) the hydrolysis of urea is accelerated  $10^{14}$  fold (which means one hundred million of millions). Other enzymes produce acceleration  $10^{20}$  fold and even higher.

Among the main characteristics of enzymatic activity, the following must be mentioned: 1. Its specificity and the Fischer's lock-and-key relationship between the enzyme and the substrate in the so-called "active site" of the enzyme's molecule. 2. The lack of chemical alteration of the enzyme during the process. 3. The enormous acceleration of the reaction without increasing the amount of energy in the system.

There is no way for chemistry to explain the acceleration of a reaction billions of times, by the presence of a molecule that does not interact and stays unchanged during the process. It is equally striking that such an enormous acceleration is not accompanied by any increase of energy in the system. However, since chemistry and quantum physics cannot be separated any longer, it is necessary to take another step further to look for an answer at subatomic level.

The electron is the best known quantum particle and it is responsible for every chemical reaction. However, none of its physical properties can explain the enzymatic activity, either. It seems obvious that this remarkable quantum parti-

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cle is able to exhibit unknown characteristics at the level of molecular biology. New research should be oriented to study the behavior of the electron in enzymatic reactions which are probably associated with a positive feed back and other situations frequently observed in the study of Chaos and Complexities. I presented a conceptual model of enzymatic activity based on these premises. It was published in Spanish, by the Universidad Nacional Pedro Henriquez Ureña (UNPHU) in Santo Domingo, Dominican Republic.

To conclude let's add that each enzyme is the product of a particular gene. DNA and RNA,originate inside the nucleus and consequently they have been named nucleic acids. They represent the genetic material. DNA, is a macromolecule, although not as large as many proteins. It is a double helix with two strands formed by separated pieces of four different molecules named *nucleotides*. The strands are interconnected by bridges that may be broken, leaving (with rare exceptional mistakes) two independent complementary offsprings. This is fundamental in obtaining perpetual reproduction and transmission of the molecule as each separated strand is able to reproduce the original DNA.This is the essence of heredity. Different arrangements of the nucleotides included in each DNA molecule will define the genetic make up of an organism or group named, the **genotype**, as distinguished from its physical appearance or **phenotype**.



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Here, personal characteristics due to environmental influence, will be found. The genotype is fundamental to establish inherited traits by the transmission of genes contained in the DNA of each parent. As it was already mentioned, the molecular structure of the gene is included in DNA and each gene is responsible for the synthesis of an enzyme.

**Epigenetic** factors must be taken into account. For instance, the birds do not sing right after birth, they have to learn by imitating the adults. All this is telling us the importance of education and environmental conditions as a complement to the inherited genetic factors. It is worth repeating that the synthesis of each molecule of protein (above all, enzyme molecules) is performed by a gene.

*Ribozymes*, are molecules of ribonucleic acids with enzymatic activity on other nucleic acids. They were discovered by Sidney Altman and Thomas Cech. Both obtained the Nobel Prize of Chemistry, in 1988.

Since Kary Mullis introduced his technique, scientists could pick out a tiny DNA fragment from a complex brew of genetic material and repeatedly copy it, amplifying its amount, enormously, in just a few hours. The procedure includes the use of special synthetic "primers" (short pieces of DNA tailored to bind the target DNA that is to be copied) and a bacterially derived enzyme (DNA polymerase), that can assemble new DNA from its nucleotides, while using the target

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DNA as a template. The use of the PCR has been extended to different branches of scientific research beyond any previous expectation. If the fascinating episodes presented in the Story of Quantum, are taken into account, the dispute about Mullis during the Simpson trial should be easily settled. There, we saw that much greater innovators were left behind in the development of their own ideas.

Other awkward situations occurred during the trial, as the experts intended to explain the statistics about DNA and genotypes selectivity. The numbers presented on that occasion were so enormous that many people were reluctant to believe them. But scientists are constantly dealing with such numbers containing 20 and more digits. In astronomy, to reduce the number of digits, distances must be expressed in *light years*, which means the space covered by light traveling at 300,000 km (equivalent to 186,282 miles) per second. The highest possible velocity in the universe.

In subatomic physics, particles may travel at considerable percentages of the velocity of light and, as it was just mentioned, in biology, acceleration of enzymatic activity is expressed in similar figures.

Therefore, it is no wonder if common people, cannot easily grasp its meanings. Consequently, their negative reaction regarding the mysteries of science, is enhanced.

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### **Science in the courtroom.**

Many lawyers would rather prefer to keep scientific evidence out of their landed property. To begin with, they do not understand much of the essential mechanisms involved in scientific arguments, which means, they are forced to relinquish, at least, part of their authority in the hands of experts. In response, some lawyers have intended to become, experts in different scientific fields, as it has been observed during the Simpson trial. However, this position creates for them, difficult situations, when they step beyond their knowledge and are rebuffed by real scientists. Besides, scientific evidences create more problems for lawyers, because science is not vulnerable when attacked with sophistry.

The only hope for the lawyer is that jurors be kept further away from the comprehension of the arduous scientific implications, allowing them, to create confusion and, as a result, to claim a doubt, that properly speaking, would only be an unreasonable doubt. Since the jury cannot appreciate what the debate is all about, a lawyer may ask, during cross examination, meaningless questions with great emphasis and body language, with which, he makes the jury believe that he is scoring important points to impeach the witness. And yet, to make it complete, a simple answer from the witness, with no great meaning, either, is followed by a "Thank you," jumping, to give the false impression of "I got you."

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As a result, we may hear, that a scientific evidence is good, only, if the jury wants to accept it, without understanding its real meaning.

A common reaction from many lawyers is to minimize the importance of any scientific evidence and, even, to show disbelief in science. The great problem for these lawyers, is that in human history, nothing has been able to stop the advance of scientific knowledge. The Spanish Inquisition prosecuted, tortured and killed many scientists; similarly, we have already seen, the death of Servetus in the hands of Calvin; Hitler and Stalin, as it was seen when Lysenko denied the role of inheritance, could not stop scientific progress in spite of their horrendous repressive systems.

Forensic science is growing fast and because of this, the judicial system will need radical changes, more sooner than later, to improve the actual results obtained in criminal trials. It is no excuse to say that the Simpson trial is an aberration and an exception to the rule because, usually, things do not happen as it has been exposed in this particular case. It is deplorable enough, to see that the judicial system allows such a prostitution of justice and, to know that something similar has occurred in several high profile cases.

Many lawyers repeat that this is the best judicial system in the world; that it has worked for two hundred years and it should be kept unchanged.

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But in fact, it seems to work better for the lawyers than for society. As a rule, lawyers benefit from the accumulated failures. Let's accept, that in the past it was good for the defendant to be judged by his peers. But what does it mean, today, in this complex society, that the defendant should be judged by his peers? Who are my peers?

Things that were good two hundred years ago, are not necessarily good today. It is unreasonable, to keep a backward position, when the world has been so radically transformed by scientific knowledge. Who would prefer, today, to reject the computer to keep counting with his fingers?

Life has changed in this century. Forensic science and high technology have invaded the courtroom with new concepts that are incomprehensible to the layman.

The phrase so frequently formulated by lawyers: "I have faith in the jury system," should be taken, with benevolence, as wishful thinking translated into a self indulgent expression.

We need Faith to perceive God and to accept religious dogma. However, when dealing with terrene weaknesses, it seems advisable to depend on knowledge, prudence and wisdom.

Is it prudent to put the highest power of the court of law in the hands of a group of people, that have been selected by specialists in jury behavior, psychologists and lawyers

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looking for convenient bias? Should justice be in the hands of people that cannot understand the meaning of the most compelling evidence presented to them?

In this regard, the debate about EDTA (*ethylenediamine tetra acetate*) in the Simpson trial, was as dramatic as the presentation of DNA testimonies. Famous trial lawyers and professors presented as commentators in the excellent programs Rivera Live and Charles Grodin, accepted unanimously their absolute lack of understanding of the technical terminology used by R. Martz, the FBI agent who performed the EDTA tests on O.J.'s socks.

Geraldo Rivera, presented to the public part of the testimony, took his glasses off and looking towards the ceiling asked: Did any one of you understand a word? And everyone just laughed.

But the tragic side of the story emerges when you ask: What happens to justice when the jurors are absolutely unable to understand the meaning of the most overwhelming evidence presented to them in a horrible double murder?

That is not a laughable matter, it may represent the difference between justice and injustice.

It would be enlightening if somewhere along their prized education, lawyers learned that the sovereign value of Science, Truth and Justice is indisputable.

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### Science, Truth and Justice.

#### Voices inside the Judicial System.

Thank Heaven, there are many honorable lawyers dedicated in good faith to the practice of law in pursuit of justice. But not all lawyers accept as their most sacred duty to protect not only the rights of a client, but the welfare of society, as well. For instance, Akhil Reed Amar, Yale University law professor, said about the O.J. Simpson trial: "I am hoping the magnification of the case will help us see the architecture of the criminal system, and make us see if it is as good as it can be." Professor Amar is a proponent of a judicial reform movement known as the "Truth School." For him, it is obscene that society rewards criminal lawyers who, knowing their defendant is guilty, manage to win jury verdicts or throw out cases on technicalities. Amar and his followers think American justice can be improved by admitting more physical evidence in court even if the police collected it improperly; by eliminating most peremptory challenges; by simplifying the selection of panelists, even by just sticking to the first 12 people, as Britain does. But according to Bruce Winick, a specialist in criminal law at the University of Miami, altering the way juries are selected *could just further the skepticism of the entire criminal process, particularly, by many black Americans.* "A possible result, could be, more riots such as those following the Rodney King jury verdict in Los Angeles or the Arthur McDuffie case in Miami."

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But should we give up our pursuit of truth and justice because we fear riots and misconduct? Could we reconcile this attitude with the American traditional position against terrorism?

There must be an intelligent answer and a new leadership should emerge among black Americans, able to teach the black and other minorities, that the pursuit of justice is good for everybody and specially for those in disadvantage.

Other critics of the Truth School have said that loosening rules on presenting evidence violates constitutional guarantees against illegal search and seizure.

Amar answers that the Constitution demands only, reasonable grounds for a search and that the police would still have to answer to a civil court if they violated the procedure.

Chuck Morton, who heads the homicide trial division at Broward County's State Attorney's Office, says: "We tell the jurors that a trial is a search for the truth, but most lawyers will say their job is to put the state to the test to show that their client is guilty beyond a reasonable doubt and their job is to create doubt, no matter how true it is."

This country can reduce the unbearable pain that many parents, children, brothers and sisters of the victims suffer, when criminals are declared innocent in the name of



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justice and most of the time, once they are free they commit more and more crimes. Do the reluctant lawyers believe their obligation to their clients is above their obligation to justice and society or are they simply looking for their own financial convenience?

To repeat that it is better to have a thousand guilty defendants going free than an innocent declared guilty is a poor excuse. Should we free all the defendants because one of them can be innocent? The real answer is to improve the system to obtain the right verdict.

It is revolting to see justice dethroned and desecrated by indecorous conduct with the help of sophistry, fallacy and spurious adaptations of ethical standards.

It is a perfect example of the use of a self-serving moral code, based on lies, cynicism and greed.

As it was said in the Introduction, regarding the O.J. Simpson trial: to ask whether the defendant should have been found guilty or innocent, represents a secondary issue. The whole process has been considered as an impudent presentation of legal prostitution and it has shown the necessity of fundamental changes in the system, to prevent catastrophic results.

Allow me to quote Hillel B. Zobel, a Massachusetts Superior Court Judge, writing about the deficiency of the jury system in the July-August 1995, cover story of American He-

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ritage: "The woes of the jury hearing the evidence against [and for] O.J. Simpson are but the most recent, most widely publicized example. In England, the jury's birthplace, has largely abandoned the practice...The abolitionist pressure is mounting equally on this side of the Atlantic. Besides *the apparent foolishness inherent in asking the ignorant to use the incomprehensible to decide the unknowable*, recognition seems to be growing that jury justice is *delayed, inefficient, and tinged with unfairness*. Jury trials last twice as long as evidentiary hearings before a judge. Moreover, because judges have to give written reasons for their decisions, irrational conclusions are less likely to come from bench 'findings' than from a jury's terse, anonymous verdict." (italics mine)

I do believe that the burden of a final decision is too much for only one person to carry, not because of any moral implication, but because of the different aspects of knowledge that should invade the courtroom with the growing forensic sciences.

Of course it is much better to have a judge, with wisdom and probity than a group of people with less knowledge that were selected, mainly, on the possibility of bias.

Stephen J. Adler, in "The Jury; Trial and Error in the American courtroom," says: "A jury system that works as badly as this book shows it does, simply shouldn't, and won't

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survive....Through the deceptive, frequently cynical process of jury selection, lawyers can and often do steer some of the least capable and least fair minded people on to some of the most important cases... But it will certainly erode, a process that is already well under way. The real question is whether the jury system is worth saving in principle and, if so, whether we can improve it sufficiently to make it worth saving in practice."

He adds: "We need only look around us to see that a jury system isn't necessary to a well ordered society or even to a representative democracy. Japan had a jury system for a while and dropped it. Israel has never had one. Germany, France, and most of the rest of Europe use a different system of justice, one that relies on small panels of *professional and lay judges*. India inherited the British jury system from its former colonizers and then dropped it altogether in 1961. Gandhi explained: 'I have known juries finding prisoners guilty in the face of no evidence. We must not slavishly copy all that is British.' And what of Britain, the cradle of the modern jury? There the system has been slowly disintegrating. Today only 1% of civil trials and 5% of criminal trials are decided by juries." Besides the great efforts by the contenders to select the most favorable jury for its side we have to add that well educated people, who could make excellent jurors, very often prefer to escape from the unpleasant duty.

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The flight from jury service is as old as the jury system itself. Both attitudes can only produce the worst possible selection of panelist as far as justice is concerned.

I have already mentioned Gerry Spence, a brilliant lawyer, extremely likable who proclaims the importance of being truthful. Although he successfully defended Imelda Marcos, we saw, already, his gallant attitude against the tobacco genocide and he has said that after reading Oliver Goldsmith about how the big money works against little people, he decided he would never again represent any insurance company. Moreover, he has said he would not accept criminal cases in which the defendant is a known drug trafficker. But by emulating the Darwin-Wallace episode, he seems unable to avoid some self-deceiving expressions to defend the legal system.

It is hard to argue against Mr. Spence, who has written, among other books, "How to argue and win every time." Therefore I will limit myself to make brief comments about some of his presentations.

Obviously, some statements that he has made about science and scientific truth, seem to stem from his "sub-conscious," due to his indoctrination as a lawyer. For instance, he has said about scientific truth, that science is imperfect and we should treat scientific evidence the same way we treat any other evidence.

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Granted, Kant said: "so far as the content (as opposed to the form) of a cognition is concerned, it is impossible to discover a universal criterion of truth." Also, William James adverted that the definition of truth as *the agreement of the mind with reality*, is not totally efficient. Moreover, today, with regards to *reality*, we have to face new possibilities out of the reach of common logic, due to the profound implications of Quantum Electrodynamics (QED). Furthermore, Scientific truth is not permanent. It has changed and it will do so throughout the centuries as a guaranty of progress.

What a desirable imperfection, indeed (!!)

Many egregious names have provided, one after another, important innovations that changed a former image of nature. Paraphrasing the positivist philosopher Otto Neurath: "They were like sailors who must always rebuild their ship on the open sea without ever anchoring in dry dock."

God forbid, the finding of a complete, permanent and perfect scientific truth, because it would be the end of science and it would impose the limits for future human achievements. The renovation of truth that makes science so fascinating, has been wielded by non scientists to create an "unreasonable doubt" against the real value of science. Because of this, it is necessary to explain why the scientific truth stands above all the misconceptions and the attacks of its detractors.

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It may happen that a well established scientific criteria has to be changed as a result of new technological advances, although, the same line of reasoning may be preserved. Occasionally, the innovations drastically surpass the previous way of reasoning. But, for a new scientific theory to be valid, it should explain some facts that cannot be accounted for, by any precedent theory. Furthermore, it should make unexpected predictions not included in any previous model. For instance, Einstein's Special Theory of Relativity, was able to explain the deviation of Mercury's perihelion (the point closest to the sun in the orbit of a planet or comet). No other theory, including Newton's Mechanics, could explain it. Similarly, we already saw, how Planck's Quantum theory, offered the solution for the "Violet Catastrophe" that had profoundly disturbed the scientific world at the end of the last century. See Appendix.

Moreover, to confirm a theory, It is desirable to perform a proper experimental demonstration of its postulates.

However, when Einstein introduced the special theory of relativity its predictions were so far ahead of the existing technology that it was impossible to perform any experimental confirmation. We had to wait, until more recently, when laboratories dedicated to the study of subatomic particles, consistently showed that Einstein's predictions were precisely correct.

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The confirmation of a well known prediction derived from the General Theory of Relativity, was even more dramatic. Einstein had proposed that the presence of mass produces deformation of the space and predicted that a ray of light coming from a star and passing near the sun before reaching our eyes, would be bent. This was confirmed by Sir. Arthur Eddington, during a total eclipse observed in South Africa.

Today, it is more difficult to introduce new paradigms since it is necessary to consider the increasing amount of knowledge and the formidable technological progress. These two factors have improved the experimental capacity to confirm or deny new theories.

The positive feed back of science and technology will attain unimaginable results and, as it has happened before, the accelerated rhythm of scientific advances, are creating the necessity of a new lexicon.

When Priestley discovered oxygen, in the eighteenth century, he named the new gas, "dephlogisticated air" because of the "phlogiston" theory, then in fashion. Lavoisier, put away the phlogiston, introduced the names oxygen, hydrogen, azote (no life) for nitrogen, and the new paradigm of Modern Chemistry was born.

Today, studies on Chaos and Complexities offer unexpected possibilities in different scientific fields. It has given

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many words, like attractors, iteration, fractals, et cetera, new different meanings. The increasing capacity of computers, can be credited with many of the recent advances obtained. When Benoit Mandelbrot said: "Clouds are not spheres, mountains are not cones, lightning does not travel in a straight line," he showed a different universe that is rough and scabrous, not rounded and smooth as we had learned throughout the centuries, from Euclidian geometry.

On several occasions, science has had to change the apparent truth obtained by our sensorial perceptions. When Aristarchus of Samos, stated that the earth was moving around the sun, how could anybody admit that idea if man's daily experiences "proved" the opposite? Even after Copernicus, many philosophers did not accept it. Moreover, today, people cannot cope with Einstein's proposition that our notion of past, present and future is a delusion created by our sensorial perceptions and has no physical meaning. It is possible that, tomorrow, a different scientific truth will emerge but that does not mean we can deny the value of the truth accepted today. And it should not be overlooked that whoever follows the truth, today, will not be considered deceptive, tomorrow, because scientific knowledge changes. When Aristotle said that a ball of iron had to fall faster than a feather, he was wrong, but he was not deceiving any one. He was convinced he was right. Later on, Galileo, by using



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inclined planes, proved he was wrong. *But it is an abominable act to make statements, with an implicit intention, offensive to the truth.* In a scientific discussion, within the proper academic environment, this behavior would be seen, if ever, very seldom, because being untruthful would bring, only, irreparable discredit with no benefit at all. Nature is not a juror that can be persuaded by a lie.

But, unfortunately, things occur very different during legal arguments in the court of law. Alan Dershowitz, professor of law who participated as a member of the O.J. Simpson's defense, very often, while on TV, displays an ability to present his arguments, in such a way, that you get lost in looking for the truth. It seems part of his professional attitude to spawn confusion; for if whatever he says helps to create a doubt in the mind of a juror, he has obtained his purpose.

Talking about juror's comprehension, Mr. Spence has also said that when a juror does not understand the testimony of scientific experts and lawyers, we should not put the blame on the juror, but on the experts and lawyers who fail to present their ideas with clarity. He has claimed that Einstein explained his Theory of Relativity so clearly and so accessible that a teacher could make it easily understandable for his or her students.

Sorrowfully, I have to disagree, because it is not possible to find such an explanation of Einstein's theory to

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make it understandable to those who do not have a basic scientific education. To appreciate the encumbrance it would be enough to mention, again, the disturbing discrepancy between our space and time perceptions and Minkowski's relativistic continuum spacetime. The confusion created by the famous "twin paradox" in the minds of common people is a good example. See Appendix.

Other relativistic concepts, such as causality and simultaneity would go even further. As it was mentioned before, the theory was written in 1905 together with four other scientific papers, and many famous scientists, were unable to understand its profound meaning and implications. So much so, that Einstein received his Nobel Prize because of the explanation of the photoelectric effect, while, the theory of relativity was considered an obscure work not to be taken into account.

There is no easy way to explain science.

Euclid (c.300 B.C.) is known as the teacher par excellence; his text book, the "Elements," has been in use, without any changes, for over two thousand years. Proclus, the Greek philosopher, told the story of Euclid's reply to Ptolemy II Philadelphus, king of Egypt, who asked whether there was any shorter way in geometry than that of the Elements. The answer was: "Your Majesty, there is no royal road to geometry."

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On regarding Quantum Mechanics, it seems very difficult for the layman to accept that, depending on the experiment we use to observe it, any object, including macroscopic objects, may be treated as a particle or as a wave. But all these disturbing conceptions have been proved to the best of our knowledge, "beyond any reasonable doubt." To support this affirmation we may ask: How can we deny the reality of radio and television; the new understanding of astronomy, cosmology and space travel; computers, the prevention of some congenital diseases, the addition of LASER (Light Amplification by Stimulated Emission of Radiation) to natural light and, unfortunately, the atomic bomb? All these things are closely related to the incredible postulates of science, previously mentioned.

Concerning justice, Mr. Spence has quoted some authorities, to explain how difficult it is to find a good definition for truth and justice. But he went too far when he said that what is truth and justice for the Brown family may not be truth and justice for the Simpson family.

We have to agree that it is very difficult to define truth and justice as abstract entities detached from human experience and ethical values. We would find the same difficulty if we try to describe any scientific experiment without including the observer, which according to QED is impossible. Furthermore, Gödel's theorem has settled that certain *true state-*

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*ments cannot be proved to be true. See Appendix.* But this has nothing to do with intentional lies and sophistry. Truth may be proved by dialectic or by physical evidence and when there is justice, dialectic should prevail over sophistry, while physical evidence should speak by itself. The use of sophistry in the courtroom can be properly explained by the following quotation from Galileo: "*E forse dire che gl'ingeni poetici sieno di due spezie: Alcuni, destri ed atti ad inventar le favole; ed altri, disposti ed accomodati a crederle.* "

Loosely translated, Galileo is adverting that there are two kinds of poetic imagination: there are those people able to invent fables, and those who are disposed and accommodated to believe them. Since the jury will have the last word in a trial, the final result will depend on their disposition to believe the fables.

About jurors selection, Mr. Spence has also said, he would not like a jury comprised of retired judges or anything else, but common people like his next door neighbor, because a judge is accustomed to look at you from above with an ever severe expression, etc. It is not surprising that a lawyer may react against the idea of introducing changes in the actual jury system. But we have to admit, in Mr. Spence's favor, that to explain juror's conduct he has given a reason consistent with other opinions of his own. He has said that

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accumulated experiences in one person's life are able to produce certain patterns of reaction as do black people against the police. Therefore, it is easy to understand that even a brilliant and truthful lawyer with high ethical standards may see the image of the judge as he has described it: Looking at you from above, ever severe, etc. To the lawyer, the judge represents some authority above him and some restriction against his otherwise unlimited power in the courtroom. No wonder that they prefer the next door neighbor who may look at the lawyer with admiration. But if you think of the witnesses that have suffered character assassination in the hands of the lawyers, without any reason nor substantiation, it will be obvious that many people will see the judge as a neutral representation of justice, and perhaps, as a refuge in the middle of such vituperation.

Moreover, in his book, "With Justice for None; Destroying an American Myth" the chapter dedicated to the judges has the following title: "Judges, Priests in the Marketplace" and in the first paragraph he says: "Who are these judges who wield such power over us, a power reserved to God? Who are these mere humans with the power to wrest children from their mothers and to condemn men to death or cage them like beasts in penitentiaries? who possesses the power to strip us of our professions, our possessions, our very lives? The judges have more influence over the course of

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the nation than the Congress and the president. They interpret the laws, apply them, change them to match their private vision of the world, and extend their collective nose into every manner of private or government business." Nevertheless, the great majority of the population is convinced that the last lines of this quotation can be properly applied to the lawyers, as well. The only difference would be that lawyers are advocates with a particular interest, while the judges, at least theoretically, are supposed to be in favor of justice.

Later on, he asks: "To whom have we so carelessly granted that power? Are they the kind who would understand you, who from their experiences would know something of the fears and struggles you have faced? Will they care about you or about justice? The profile of the typical American judge is a white Protestant male of about fifty years of age from an upper middle class family, who has labored without stellar success as an attorney. He has been in politics but there he was not a rising star either."

I would say that judges are, first of all, human beings. Therefore, they cannot be perfect. But who would take the responsibility of making justice? Who would control the limitless personal pretensions of the lawyers?

God is not available to perform the task and we cannot get help from outer-space.

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The solution should be to improve the mechanism to select judges and jurors. By the way, the fact that somebody was not brilliant enough as a lawyer or a politician, should be considered an asset, to deserve being a judge. Very often, brilliant lawyers and successful politicians, depend on their capacity to disrespect truth and evade scruples.

Due to the frustrating behavior of the jury in the Simpson trial, some computer experts prepared programs able to perform the sacred duty of the jury. They claim that the computer can, at least, eliminate from the panel, ignorance, bias and emotional immaturity. But as of today, nothing can be better than human consciousness. A jury composed of people with knowledge, wisdom, prudence and probity is more desirable for whoever is in search of truth and justice.

It is unavoidable, that to enjoy the benefits of forensic science in the pursuit of justice, there must be some scientifically minded jurors in the panel. Otherwise, the risk of jurors being deceived and misled, one way or the other, turns out unacceptable.

The prosecution has the burden of proof beyond a reasonable doubt and very often it is difficult to establish the limit between what is reasonable and what is unreasonable. The defense, instead, only needs to create a doubt, with the hope that a juror can believe or wishes to believe, it is reasonable. Accordingly, each member of the jury may apply his

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or her own parameters and the lawyer must show his ability to create doubt against the truth, to be successful. As a rule, such a lawyer is commended and congratulated just because he is able to manipulate lies.

The benefits of the proper use of science and technology in the courtroom are equivalent to the benefits obtained in public health when the polio vaccine and antibiotics were introduced. However, many lawyers will reject the adoption of necessary changes in the judicial system.

To give an example, let's go back to DNA. The human genome contains between 60,000 to 100,000 genes and, very probably, with the formidable technological progress, the increasing knowledge in genetics, molecular biology and computers, it will be deciphered in less than 10 years. The many implications of this scientific achievement are practically unimaginable, not only for the general public, but even for scientists, humanists, legislators and religious leaders. It is absurd to pretend that the legal, moral and economic aspects that will be related to this chapter of forensic science, can be decided by jurors not scientifically minded and without high levels of education. The government-financed Human Genome Project, thoughtfully set aside a small fraction of its budget to study related moral and ethical questions. There are, already, expert groups and advisory committees and a stream of scholarly papers.



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But this is far away from any solution for the many problems we will find in the near future. And we must ask: will the court of law ever be the temple of justice that we want to believe in? Should the search for justice receive modern scientific support in the best possible way? Or has the court of law to remain as a stage where a lawyer, protected by his own laws, displays his ability to profane justice?

**Did Science, Truth and Justice prevail in the Jury during the Simpson Trial?**

Christopher Darden, in his best seller book, *In Contempt*, says: "Of all the overblown and destructive aspects of this case, none was as bizarre as the battles inside and over the jury." And, without any doubt, the prosecution lost its case in those very battles. Some selected jurors had a disturbed perception of justice. Based on the study of their questionnaires, prosecution jury consultants stated that there were jurors and alternates who would never convict O.J. Simpson of murder. They knew they had a very bad jury, but the other candidates were much worse. For instance, a potential juror had been arrested twice for possession of cocaine and had been the focus of a narcotics search warrant, in which the police did not find any drugs, but he had \$50,000 beneath his bed.

Although the panel was almost totally black, race was not the only problem. To decide about the real meaning

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of the great amount of complex forensics including new scientific criteria about DNA, EDTA and other subjects, the jury only had a couple of panelists with college degrees. And a white juror, named Francine Florio-Bunten, was the only one that could explain DNA as the abbreviation by initials of *deoxyribonucleic acid*. Later on, she was dismissed under the false accusation of writing a book called, *Standing Alone for Nicole*. She vehemently denied the accusation, but to no avail. When this happened, Johnny Cochran, with great satisfaction, told a USA Today, reporter: "You will notice I'm smiling. That's all I'm going to say." In fact, a potential obstacle for the defense, had been eliminated. The story began earlier in the trial, when one man, supposed to be a reporter covering the Simpson trial, "published" a collection of allegations about a white juror who would later be dismissed. In June, Scott Barnes, a defense investigator, accused the defense of engaging "In a Conspiracy to alter evidence, create a False and Groundless environment in an attempt to convince the Judge to remove some jurors that they believed were in favor of the prosecution. False letters and anonymous phone tips, were created to cause jurors to be removed." Late in spring, an anonymous letter emerged, allegedly from a secretary at a literary agency accusing Francine Florio-Bunten of writing the above mentioned book. There was never any book and the letter was false.

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At the same time, the defense was accusing the prosecution of making efforts to provoke the expelling of some black jurors. Alan Dershowitz appeared in court and declared he was ready to appeal. Judge Ito, looked intimidated.

A potential juror had stated he had not formerly met the defendant and became juror 228. But, later on, a woman asserted that this juror worked with Arnelle at the Hertz VIP services unit at the Los Angeles International Airport, and claimed that at a reception, in 1982, Simpson walked down a line of people and shook hands with juror 228. This was corroborated by other Hertz employees.

There was a clique of four black jurors headed by a 54 year old, postal manager named William Cravin. Their behavior was increasingly disturbing. The first one to be dismissed from the case was Michael Knox, a forty six year old courier who failed to disclose a 1984 arrest for kidnapping and assault, charges that the victim later dropped. Right after his dismissal, he set to work on a book named, *The Private Diary of an O.J. Juror*, in which he said "For the black jurors Simpson was one of our own." "He was a brother and he was in trouble."

Another juror named, Tracy Kennedy, was also expelled when on March 17 a laptop computer was found in his room.

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Jeanette Harris was a strong member of the active pro-defense group. She exhibited in court her great admiration for Cochran and her disdain for Marcia Clark. She was dismissed because she had been a victim of espousal abuse and had failed to report it. She denied that episode, but she had signed a petition for a restraining order in 1988. Cochran protested her removal, but her contradictions demonstrated that she lied one way or the other.

Afterward, she was presented on different radio and TV shows, always outspoken, bitter against the prosecution and even against the family of the victims. She said that the case had amounted to "a whole of nothing," that domestic violence "doesn't mean he's guilty of murder." She described a jury polarized by race and denounced frequent conversations about the case with other jurors, which was a violation of the court orders. She said Denise Brown's testimony was too emotional and she was untouched by the pictures of the victims of that bloody crime. How can any one be unemotional in that situation? She said she wanted "a non emotional verdict based on evidence," however they were bored by the scientific and non emotional evidences related to DNA, that in spite of being overwhelming, were easily disregarded because of unfounded hypothesis introduced by the defense. There is much more to say about a Jury that was ready to render a verdict, so fast, that it seemed preconceived.

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According to Cochran's words in his closing statements, those jurors represented **'The right people, at the right time, in the right place.'**

That was his definition right before he asked them to pay back so much damage and injustice suffered by the black people since the days of slavery. The jury obliged.

After nine months and a long list of the most difficult scientific and circumstantial evidences, the verdict was rendered, without hesitation, in less than four hours of deliberation. No more explanation is necessary to admit that a new procedure of jury selection is inevitable. The verdict, being the most important decision in criminal justice, cannot represent a flagrant disregard of wisdom.

Jeffrey Abramson, in his book, "The Jury; The Jury System and the Ideal of Democracy" presented the evolution of the so-called Scientific Jury Selection, that according to his words began innocently enough in 1972 when sociologist Jay Schulman and others volunteered their services to Catholic antiwar protesters accused of conspiring to destroy draft records during the Vietnam War. Later, in 1975, came the National Jury Project in Oakland, California, mainly for radical or political defendants. The method achieved a high percentage of acquittals in the 1970s including Angela Davis in her 1972 trial for murder and kidnaping; Joan Little in 1975, when the jury accepted that she had killed her jailer

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in self-defense during an attempted rape, and the automaker John Z. DeLorean, acquitted in 1984 of selling cocaine to finance his failing company.

Eventually, jury selection became a growth industry, including companies with attractive names as Litigation Sciences, Inc. In 1994, The American Society of Trial Consultants estimated that there were at least 250 jury consultants in the U.S.A. charging fees from about \$150 an hour to \$10,000 and over \$250,000 per case. This, of course, expanded the distance between the possibilities of the rich and the poor to obtain a favorable verdict.

It was another step to establish Justice for Sale.

It is unacceptable, that in the name of justice, ignorance and absence of probity may open the door to primitive emotions and bias. To protect truth and justice a jury should be integrated with very special and honorable people whose wisdom, knowledge, prudence and probity, would guarantee a conscientious approach. They will never produce a blind verdict misguided by ignorance and they will not permit a wrong attitude due to bias and lack of integrity.

The person selected to be a juror must have exceptional qualifications. Regretfully, such an honorable position, cannot be honorary. It has to be properly remunerated for practical reasons. This may represent a good amount of money, but justice is priceless. The number of jurors in the

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panel is a remembrance of the twelve apostles, but it could be reduced to make it more affordable. It is painful to think of the millions of dollars the tax payers saw wasted in the Simpson trial. The jury must comprise retired or active professors in different branches of science and retired judges that can appreciate the legal aspect of the testimonies. As it was already stated, their functions are very complex and require very special moral and intellectual qualities in each member of the panel.

They should be honored, respected and admired.

Such a jury would be a guaranty against juror's misconduct and there would be no need of their sequestration. They would be above environmental contamination, as is the case with judges and experts. In each trial, the members of the jury would be selected by casting lots, although the scientific aspect should be taken into account regarding each evidence to include several qualified persons in the involved scientific field. All this will provide a much better opportunity for justice. But, how many lawyers would accept these changes without a fight? How can they give up the many advantages and privileges they enjoy under the present rules of the game? They say it would be necessary to re-fashion the Constitution and that would be undesirable. The worship of the Constitution is paramount, however, very im-

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portant aspects must be considered. To begin with, many lawyers are not so concerned with regards to Constitutional changes as they are about their personal and professional advantages.

James L. Sundquist , in his book, "Constitutional Reform and Effective Government" explains how difficult is to obtain an amendment of the Constitution. Not only may an amendment be blocked by 34% of the voting members of one house of Congress but, if it passes that hurdle, it can still be defeated by the adverse vote of as few as 13 of the 99 state legislative houses, or fewer than 14%. Moreover, this procedure will never be changed, either. However, since 1791, the Constitution has been amended 27 times. And in this case, the only reason for an amendment would be the preservation of Justice. There is no need to say that nothing could be more closely attached to the spirit of the Constitution, than Justice itself. Besides, nowadays, there are circumstances that did not exist before and could not have been foreseen, as it is the case of the enormous progress of forensic science. The amendment is necessary to obtain the benefits derived from the new scientific knowledge, because scientific evidences are useless if the jurors cannot understand their meaning. We should be deeply concerned and should do our best to improve these painful situations. We should emphasize, at least, the following necessary changes:



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1.- A genuine effort should be made to abridge the increasing racial tension in the American society. The cultural and socio-economic gap dividing this country should be approached more effectively.

2.- Every Police Department should eliminate racism, bigotry and misconduct.

3.- The Forensic Science Divisions in all the Police Departments, should be improved with 21st century science and technology.

4.- Battered women and children must be protected by law and by society. Espousal and child abuse must be prevented.

5.- A new Jury System should include scientific panelists and retired judges to guarantee knowledge, wisdom and probity in the verdicts of criminal trials.

No battle against crime can be successful without a proper judicial system.

To overcome the actual deficiencies is not an easy task. New roads must be opened to achieve a social equilibrium badly needed in this country.

But only the People with the strength of their vote can induce the lawmakers to obtain the necessary changes. They must be presented as fundamental electoral issues.

When the analysis of human experience is limited to a legal aspect in which truth and justice are disregarded, the

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only possible result is the spiritual death of society. The people should decide. We cannot accept injustice as a normal condition, simply because it is considered as legally admissible. Whenever that happens, the Judicial System is wrong.

To say, that truth and justice are abstract concepts, difficult or even impossible to define, is not an excuse.

It would be immoral to exclude the proper application of science. It would allow the continued desecration of Justice in the hands of impudent, materialistic lawyers. Materialism, has many dangerous aspects that cannot be overlooked. Nobody can deny that Economy is very important in the welfare of a nation, but it cannot be the only and totally prevalent factor to be taken into account. Unfortunately, money, is very often the main concern of people of different races, religions and levels of education and when money is the first objective of life it provokes the detriment of virtues.

But it is about time to understand that living without virtues is necessarily self destructive.

Power, is very frequently associated with the idea of money and many lives are consumed in a painful and endless struggle to obtain both of them.

In that struggle, corruption is a deciding factor.

Fame may be the result of achievements in a virtuous endeavor. But much more often, there is no virtue involved in the eagerness to reach fame.

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Many celebrities do not know the difference between being famous and being infamous.

And very often, an important part of the population show that they do not know it, either.

It hurts to see the disregard of wisdom, truth, justice, moral and family values, as well as an inner life.

Finally, we may ask: Does anybody involved in this madness think of God? Many people with a public image, use the name of God and go to Church, to be seen in prayer. But their acts cannot be reconciled with the image of GOD regardless of the religion they pretend to observe.

Look up in Matthew 6:5 in your Bible.

For Goodness sake, men of all races and religions, open your eyes and see the imminent danger of losing the godsend this blessed planet represent.

The danger stemming from hardened hearts indifferent to the suffering of their *fellow beings* is growing. Greed and self-serving, disturbed minds are jeopardizing the future of the human race.

Do not take it lightly. Be wary.

WAKE UP (!)

# INTERMEZZO

**The end goes, beyond the end of this book.**

## INTERMEZZO

As it was explained in the Introduction of this book, the O. J. Simpson trial was included for several reasons. Not only because of the extravagant presentation and the overwhelming media covering that called it "the trial of the century," but because it exposed *beyond any reasonable doubt*, the increasing racial animosity and its unpredictable consequences, the shameless and unpunished violence in the battered spouse syndrome and the painful deficiency of the judicial system. People ask: why the endless media covering and the interest of the public? To those who believe he killed the victims, that stance represents a strong reaction against injustice aggravated by the remorseless and arrogant behavior he exhibits. But after suffering centuries of injustice, many black Americans claim he should be let alone since a jury rendered a not guilty verdict.

The saga will continue with a civil trial to establish his liability on the death of Nicole Brown and Ron Goldman.

I intend to offer an accurate documented description of the events related to the crime and the first trial as they were presented inside the courtroom and outside, as well. Otherwise it could be interpreted as the product of simple emotional reaction in front of a controversial subject.

## Chapter Nine

### The Crime

*A bloody, horrible double murder.*

## THE CRIME

### KEY PLAYERS.

#### **O.J. Simpson.**

Although a high percentage of people did not know the complete name of this sport celebrity, the prosecution intended to elude the myth of his initials by simply calling him Mr. Simpson or **Orenthal James Simpson**. But it was to no avail as far as the black Americans were concerned.

O.J. Simpson grew up in a tough San Francisco ghetto. His father left the family, but nevertheless, O.J. has stated, he always counted on him. As a teenager, O.J. wore an Afro style hairdo, had a flat nose, round lips and uneven teeth. He was born with the precious gift of an exceptional athletic ability, went to college, won the Heisman trophy, established astounding records, was idolized by the football fans and became a member of the Professional Football Hall of Fame. He acquired a straight nose, thinner lips and corrected his teeth, which gave him a captivating smile that was an important asset in his personality. When he retired, he began a new career as sports commentator.

He went into public relations, sales and acting. He knew how to be pleasant to other people whenever he received signs of admiration and things went his own way. He became rich and famous, had accomplished everything that any one could wish, but nothing was enough to satisfy his insatiable Ego, and deep inside, he was selfish, aggressive and intolerant.

## The Crime

When he met Nicole, she was just eighteen and he was still married to his first wife. They fell in love, lived together and after his divorce, finally got married. They had a passionate and restless marriage with many episodes of infidelity and violence, including severe physical punishment. He always tried to compensate with very expensive gifts and wrote letters promising to change his behavior. They dated and tried to go back together, but nothing changed and finally, she decided it was all over.

Although the letters he wrote, show many orthographic errors, he is very smart, audacious and alert. Many people believe, he prepared every single detail to get away with murder.

The prosecution has insisted that he could not cope with the idea of losing his control over her, he could not accept her decision to begin a new life, he would never allow her to depart from him and therefore, he decided to kill her.

On June 12, 1994, there was a recital, in which his youngest daughter was on stage. After the act, Nicole had decided to go to the Mezzaluna restaurant with some members of her family. He wanted to go with the group and she rejected his proposal. It has been said that this incident provoked his last crisis of rage and set in motion his plan to kill Nicole.

Dr. Ron Fischman is a friend of O.J. Simpson that made a video of the recital. He was seen talking to Simpson as



## The Crime

Nicole drove away from the piano recital the day she was killed and he told one of Nicole's friends that after Nicole's refusal, O.J. had said: "I am not finished with Nicole. I will get her good. I am going to get her good." That information, was also given by Mrs. Fischman to the press, but it was inadmissible in court. There were more problems about Dr. Fischman. He was being investigated by the L.A. Sheriff's Department for criminal sexual misconduct, although the case was never filed and his mother's name was in a bottle of an anxiolytic drug that O.J. was carrying the day he was finally arrested. If Fischman had given him the drug, it could have been a violation of the California Business and Professions Code that could lead to the cancellation of his medical license.

On regarding the video, contrary to the testimony of witnesses for the prosecution that described the defendant in a sinister mood, it showed him in a pleasant state of mind, courteous and affable with the Brown family; he looked happy, although, he overacted when he intended to laugh at a joke. The video was sent to the prosecution to demonstrate that his state of mind was inconsistent with the perpetration of a horrible murder. The prosecution failed to communicate the existence of the video to the defense and was punished by Judge Ito because of the court laws regarding reciprocity in the exchange of discoveries and evidences. To obtain even

## The Crime

more advantage from this episode, the defense had their copy exceptionally well edited, using a laser procedure, and could show the jury the best of his expressions and eliminate inconvenient details.

After the trial, it was known that there were other arrangements to get together after the recital in a restaurant where Jason, (O.J. eldest son), would be the Chef.

But Nicole decided to cancel that proposal and go, instead, to the Mezzaluna restaurant with her family excluding O.J. from the party.

It may be assumed that the video, the planned trip to Chicago that same evening, and Brian "Kato" Kaelin's company while eating a hamburger at McDonald's would be parts of his alibi. But later, Kato did not cooperate as he had expected. O.J. Simpson, could not foresee, either, two important and unpredictable occurrences: The persistent howl of Nicole's dog in relation to the time of a TV program regularly watched by a neighbor, Pablo Fenjves, and the unexpected presence of a hero, Ronald Goldman.

Nicole's mother had left her glasses at the Mezzaluna restaurant and Ron, who worked as a waiter and was Nicole's friend, offered to take them to Nicole.

That sealed his fate.

## The Crime

### **Nicole Brown.**

She could have been taken as an example of the American beauty. Tall, blond, athletic, outgoing, full of life, sexy, independent and courageous. For O.J. she always represented a trophy, a challenge and an obsession. After the trial he presented Nicole as a depraved woman constantly looking for sex and vices, but even if she was not the most modest maiden it is unfair to tarnish her image after being so brutally murdered. She had many friends that loved her deeply. All of them say she was sincere, unselfish and a wonderful mother.

### **Ronald Goldman**

Ron was 25 years old, handsome, athletic, with a pleasant personality, full of aspirations, working his way up. He had had an opportunity as a male model and, as it was just said, worked as a waiter in the Mezzaluna restaurant where he had met Nicole. Every one liked him; his kid sister, Kimberly, loved him as a brother and as a friend, his father has been devastated with his absurd death; yet he died a hero. Being unarmed, he courageously faced the furious attack of a blood thirsty murderer and according to the prosecution his resistance provoked the wounds in the left hand of the attacker and the incriminating trail of blood. He received more than 30 stab wounds, several of them, necessarily mortal. He was killed and over killed, just for being there.

## The Crime

A crime as painful as absurd. As it will be described in relation to the Fuhrman episode, Johnny Cochran, with exuberant histrionism expressed that the defense was not playing the race card, but the card of impeaching a racist, bigot and liar. It was, he said, "a block buster, a bomb-shell" that would change the legal process in future criminal trials. But, Ron Goldman's sister, Kim, and his father Fred Goldman, could not accept the tactics of the defense. They are convinced that O.J. Simpson is guilty and were distressed that his lawyers "brilliantly," found in Mark Fuhrman, another villain to divert attention from the crime and its perpetrator. They used him to infuriate the jury and the black community against the police. It seemed, for a while, that The Simpson Trial, could be converted into the trial of Mark Fuhrman.

In a press conference, after Kim had spoken with tears in her eyes showing her pain and frustration, Fred Goldman, expressed his outrage: "Ron and Nicole were butchered by their client," "Do any of you believe otherwise?" "You have seen the evidence in this trial. It is overwhelming. This is not now the Fuhrman trial. This is a trial about the man who murdered my son." He rejected the defense's pretended feelings of sympathy for the victim's family, he said: "they are liars able to do anything under the sun to get their client free. They did not take into account who could be hurt." A famous lawyer commented, right after, that he understood the Gold-

## The Crime

man's family reaction, but insisted the defense lawyers were doing what they were supposed to do, and added: "Lawyers learn to get over these situations." Which means, they learn to develop a complete moral anesthesia that stands above dignity, human feelings, truth and justice. They believe their only duty is to get their client free, even if he is guilty.

### **The events according to the prosecution.**

On June 12, 1994, as Pablo Fenjves and his wife, were getting ready to go to bed; he decided to follow his routine of watching the 10:00 p.m. TV news.

At 10:15 pm. the persistent wail of a dog called their attention; it seemed the poor animal was in distress. Both of them looked through the window towards the direction the sound came from. Later on, Steve Schwab, who had also heard the wail, went out to take a look. He found the dog and took it to his home. The dog seemed dehydrated, was restless, and had blood on its paws and legs, but he did not find any lesion. It was a fine breed specimen, well kept and had an uncommon collar. They talked to Sukru Boztepe and his wife, their next door neighbors, who took the dog out again hoping to find its owners. Eventually, the dog stopped at the corner of Bundy and seemed to direct its attention to one of the houses. Although it was dark, Boztepe got closer to the entrance at 875 South Bundy Drive, and as he did he could see two bodies: a woman in black and a young man in

## The Crime

black jeans and a white shirt. Both were immersed in a pool of blood. He called the police and when they arrived they secured the scene of the crime and as they found out that a celebrity was related to one of the victims, the case was transferred to a higher office.

The detective in charge received the order to personally inform O.J. Simpson of the violent death his ex-wife had suffered. Four detectives went to O.J.Simpson's house at Rockingham Ave. After several minutes of trying to communicate with someone inside the house, there was no answer. They then went on searching the outside premises and found the white Bronco, belonging to O.J. Simpson, parked in front of the house. On its examination they discovered blood stains on the left front door and taking the blood finding as a technical justification they decided to get inside the property without a warrant. They claimed that someone might be hurt and reported the possibility of an emergency. The defense rejected such a claim and stated that since the first moment the police saw O.J. as a suspect and attacked this attitude as a rush of judgment and violation of privacy. But to no avail. The judge in the preliminary hearing, approved the police's decision. Eventually, the warrant was obtained. When they got into the house, they found Brian Kato Kaelin, a permanent house guest, from whom they learned that O.J. Simpson had left for Chicago the night before on a trip that

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had been planned far in advance. It should be noticed that Detective Philip Vannater did not properly state this point in the affidavit for the warrant to search the house, which Judge Ito criticized as a careless disregard of the facts. However, later on, Vannater explained that he founded his report on Arnelle's statement, which was the only source he had at that moment. In fact, when Vannater asked her about her father, she thought he was in the house and did not know of the trip.

Nevertheless, O.J. Simpson's departure for the airport offered important details which gave the prosecution the necessary time window in which O.J could not account for his whereabouts and had the opportunity to commit the crime. It was established that O. J. Simpson had no alibi for the time between 9:45 p.m., when he returned from McDonald's with Kato Kaelin and 10.55 p.m. when he was seen entering the house. Right after his arrival Kato made a long distance call and the time was registered in the phone company record.

The same time control was provided by Allan Park, the limousine driver who had been instructed to pick O.J. up. He had to drive twice by Rockingham Avenue; the first time at 10.22 p.m. and the second at 10:39 p.m.

At 10:40, he rang Simpson's buzzer several times without getting any answer. During that time he did not see Simpson's Bronco parked at the curb.

At 10:55 p.m., while he was talking on the phone

## The Crime

with his boss, he saw the shadowy figure of a black man about the size and weight of O.J. Simpson, going into the house. When, immediately after, he called again, O.J. answered and said he had overslept.

Kato, told Detective Mark Fuhrman, that he had heard a noise on the wall near the air conditioner the night before and that he had the impression of an earthquake. He even asked a friend, who was talking to him on the phone, whether she had felt an earthquake. Kato was so concerned that before going to see what had been the cause of the noise he told his friend to call the police if he did not return in 10 minutes. Kato Kaelin explained this episode to Fuhrman and conducted him outside the room to show him the place where he had heard the noise. On inspection of the area, Fuhrman found a bloody glove similar to one that had been previously found in the crime scene.

In the meantime, upon calling his secretary they located O.J. in Chicago. They got in touch with him by phone and explained the motive of their call. Some people have considered his behavior after receiving the news of Nicole's death, as incriminating, others give him the benefit of the doubt because it is very difficult to foresee how a person may react in such circumstances. Nevertheless, it is disturbing that he never asked which of his ex-wives had been killed nor how she had been killed.



## The Crime

The next day, he flew back to Los Angeles and had an interview with the police without the presence of his lawyers. But, at that moment, there were already accusatory evidences, that made him the first suspect of the horrendous murder. At the scene of the crime there were shoe prints walking away from the dead bodies and drops of blood were clearly seen at the left side of the shoe prints. This fact was incriminatory because O.J. had a wound on the middle finger of his left hand. The blood trail continued to the Bronco, from there, it went to the street door of Rockingham and to the entrance of his house. *Blood was also found on the wooden floor of the living room, that was there before O.J.'s blood sample with EDTA was taken by the police* . It must be added, the glove found by Fuhrman and a pair of black socks in his bedroom. Later on, these socks would be the center of hot scientific debates during the trial.

When O.J. returned from Chicago, his friend Robert Kardashian, was waiting for his arrival and took from him a garment bag that looked heavy and presumably was full of clothing. When he returned the piece of luggage... it was empty. The prosecution claimed that the bloody clothing of the crime could have been in that garment bag and wanted to call him as a witness. In such circumstances any common citizen would have been a suspect for obstructing justice and disposal of evidences. But he is a lawyer and looked for sanc-

## The Crime

tuary under the privilege of lawyer client relationship, in spite of the fact that he had never before acted as O.J. Simpson's lawyer and he did not even have a license to practice in California. He managed to obtain a license and then took a seat as part of the defense. The prosecution did not want to give up on this point, but Judge Ito, with Erasmic prudence, interrupted the procedure, called the lawyers into camera and after that, the prosecution did not insist. Obviously, any confrontation with the powerful Bar, should be avoided, since it is a tacit agreement that lawyers must protect each other as a code of honor in their mighty profession.

Of course, that has nothing to do with the police "code of silence."

When interrogated by the police about the injury he had on his finger, O.J. Simpson said he did not remember it but thought he had pinched his hand in the Bronco.

Johnny Cochran said in his opening statement that O.J. had received that cut before leaving for Chicago, but later on, adding another change of direction to the many theories presented by the defense, the "dream team" has sustained that no witness noticed any wound during his trip and introduced the variant that when he received the bad news in Chicago he had a glass in his hands, broke it, and cut himself. However, a policeman from Chicago, called as a witness for the defense, declared under cross examination, that

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there was blood in the middle of the bed, which indicated that he was bleeding before he received the phone call the morning after.

O.J. was allowed to leave police headquarters on the condition of returning, but he did not come back and consequently, Gil Garcetti, the District Attorney, declared him a fugitive of Justice.

Afterwards, there was the low speed chase of the Bronco driven by his old friend Al Cowlings, with O.J. Simpson seated in the rear pointing a gun towards his head contemplating committing suicide.

The chase was transmitted on TV around the world and millions of people watched the Bronco followed by a motorcade of police cars and helicopters. Finally, he did not have the courage to pull the trigger and decided to give himself up to the police. He was interrogated, but his statement was never presented in court.

Additionally, there was a letter read on T.V. by his friend Robert Kardashian, which has also been considered as a suicidal letter. Many experts have stated that it contains so much expression of guilt that it gets close to a "confession." To say the least, it is a self indulgent, pitiful document, written by an egocentric person asking his friends not to think of him **"as the man that had fallen so low, but as the real O.J. he always was."**

## The Crime

Nothing related to this episode was ever presented to the Jury, either. O.J. Simpson's passport and several thousand dollars were found in the Bronco, which could imply he wanted to leave the U.S.A. However the police registered the money as belonging to Al Cowlings and because there were other controversial details the prosecution preferred to keep the whole thing out of the trial.

Many experts did not agree with the exclusion of so many incriminating evidences.

From June 30, to July 8, 1994, there was the preliminary hearing; from July 22 to Sept. 23, 1994, pretrial hearings; from Sept.26 to Dec. 8 1994 jury selection; from Oct.6 to Dec.6 1994, rulings on evidence; from Jan. 24 to Jan 31 1995, opening arguments.

## Chapter Ten

### The Trial

**The police was on trial.  
The Judicial System was on trial.  
The victims were forgotten.  
The Jury faced a historical duty.  
The defendant said: "Thank you".**

## THE TRIAL

### **Key Players and Highlights.**

#### **Judge Lance Ito.**

Throughout the trial he emerged as a gentle and rather weak personality, intending to be respectful of truth and justice, but very much concerned about the challenges of appeals and being over ruled in a reversed trial by the dominant group of lawyers on the defense side, which have been called "the dream team." He offered all possible opportunities and allowed the defense to introduce far fetched hypothetical arguments with doubtful substantiation. It has been said that his personal relationships with some of the lawyers was a determinant factor to keep his ambivalent attitude. Because of that, unnecessary and protracted complications dangerously extended the process.

The defense took advantage by tactically obstructing the presentation of the prosecution's case, kept the sequestered jury out of the courtroom for a long period of time and interweaved several hypothesis for the benefit of those jurors, anxiously looking for any exculpatory doubt.

Several jurors were excused, and as the rhythm of banished panelists accelerated he tried hard to give the trial a new orientation with a more rigid discipline.

As it will be seen, afterward, a crisis occurred on August 15, 1995, when the prosecution asked Judge Ito to excuse himself from the trial since his wife could be called as a material witness. Some tapes concerning detective Fuhrman

## *The Trial*

could create a situation of conflicting interests. Judge John Reid was called to determine whether Captain Margaret York (Judge Ito's wife) could be called to testify and he ruled against that possibility, clearing the way for Judge Ito to keep his position, which obviously, he did not want to abdicate.

Robert Shapiro, a defense lawyer, declared in court without the presence of the jury, that the defense was planning to complain to the Bar regarding Christopher Darden's conduct.

Shapiro denounced, Darden had told the judge, out of record, that the main reason to ask for his dismissal was the prosecution's dissatisfaction with his attitude in favor of the defense, giving all the time and facilities to Johnny Cochran's direct interrogation, while personally attacking Marcia Clark and ridiculing Brian Kelberg in front of the jury. Darden answered that he was also preparing his complaint to the General Attorney's Office about the improper conduct of the defense lawyers. The whole scene was deplorable.

### **William Hodgman.**

He was supposed to be one of the main lawyers for the prosecution. His gentleness, equanimity and credibility are well known. But regretfully, early in the trial, he suffered what seemed to be a mild coronary attack and after that, he could not participate in active debates. Nevertheless, he was present in some crucial moments in the last episodes.

## *The Trial*

### **Marcia Clark.**

As the main lawyer for the prosecution, she was in a very uncomfortable situation. She was temperamental and had to alternate the sweetest charm of her femininity with the aggressive reaction of a panther. Occasionally, some experts have criticized her attitude, but with regard to the men she had to deal with, it seems she could not have survived otherwise. In her opening statement she described the trail of O.J. Simpson's blood, starting at the scene of the crime and going to the Bronco; from there to the entrance of his house and continuing to his own bedroom. DNA studies would confirm the presence of the victims' blood and the blood of the defendant in these places.

She had to face many difficulties due to deficiencies in the LAPD that gave the defense opportunities for its extremely aggressive and effective presentation.

### **Christopher Darden.**

As a black lawyer for the prosecution he has shown, integrity, seriousness, pride and concern for to the evolution of the trial. His candid attitude in contrast to Johnny Cochran's cynicism, provoked an uncongenial reaction between them.

These are his own words outside the courtroom: "It's taken 15 years for me to finally have enough of this. I don't know if I ever want to try another case."



## *The Trial*

“I don’t know if I ever want to practice law again... Everything about this case, and these proceedings, is imperfect. Frankly, I am ashamed to be part of this case, I am not ashamed of the efforts of our team. We have a great team, I wouldn’t trade it...But I hope that my participation in this case is not the legacy that I leave.”

And yet, he could never have imagined how painful his frustration would be.

On June 15 1995, he had the opportunity to present a witness that should provide a very strong evidence for the prosecution. They extended their investigations overseas and located the manufacturers of the gloves found at the scene of the crime and at O.J. Simpson’s house.

Those extra large gloves were made with special stretching leather and a cashmere lining, exclusively for Bloomingdales, New York; each pair was priced over \$50.00; around 200 pairs had been sold and the prosecution claimed to have the copy of the ticket signed by Nicole when she bought them. They would connect the defendant directly to the scene of the crime and the defense would have had a hard time to claim that both gloves had been planted by the police.

Obviously, Darden was anxious to demonstrate the sequence: **crime, glove, O.J.** and asked the accused to wear the gloves in front of the jury.

The result was a catastrophe.

## *The Trial*

After a year of being covered with blood, in contact with chemical substances. washed and dried, the cashmere lining had shrunk and disarranged inside the gloves, the leather had stiffened and, besides, a pair of latex gloves were covering the hands of the defendant to prevent contamination. It was not necessary to be an actor, even a poor actor, to make faces and body language showing off the gloves and saying, directly to the jury, "too small, too small."

Second guessing is always easier.

"He should not have done it."

" Any one could see the gloves were much smaller than a new pair of gloves of the same size." etc. etc.

But the harm was done.

Next day, Richard Rubin, former vice president of the glove maker Aris Isotoner, an expert witness for the prosecution, explained the facts that produced the bad result, but obviously it would never erase from the mind of the jurors the image of O.J. Simpson showing that the gloves were too small for his hands.

On July 31 1995, the defense wanted to introduce some experiments performed by one expert to demonstrate that the gloves could not shrink in the way proposed by the prosecution. Marcia Clark announced that she had in mind to present some photos in which she would prove that O.J. had used the same gloves to commit the crime. Judge Ito asked

## *The Trial*

her whether she could present any foundation for that statement and she answered with a mischievous expression: "Yes I can." After a pause, Ito said: "Interesting."

Since the defense did not want to "open the door" for new debates about the gloves they decided to skip the intended experiment. But next day, Marcia Clark, expressed her intention of reintroducing the issue based on the conspiracy theory, even if the defense did not open any door.

Johnny Cochran immediately claimed that the prosecution could never prove anything about the gloves and right after, Ito announced that he had received, just the night before some pictures and information from the FBI, concerning the gloves and socks. He offered them to the defense and the prosecution. Nothing came out of it.

**The scientific experts, among the lawyers for the prosecution.**

They have had a difficult task. The careless and sloppy work collecting evidences, gave the defense more opportunities than they really needed to create many hypothesis even if they did not have any substantiation. Besides, only the prosecution has the burden of proof.

Another important aspect that cannot be underestimated when dealing with mercenary experts, is their ability to answer crucial questions extensively and pontifically, evading the subject and misleading the jury or giving them the

## *The Trial*

opportunity to support what they wanted to believe. It is a difficult task for the judge to prevent that performance.

### **Rockne Harmon.**

He is knowledgeable, but at times, looked aggressive and intolerant. His grouchy behavior, was severely criticized. To his benefit, he may have been responsible for the defense to drop Kary Mullis as a witness.

### **Brian Kelberg.**

He had excellent performances both in direct and in cross examinations. His personal style was vivid and striking with extensive knowledge in forensic science. However, he was psychologically outsmarted by Robert Shapiro in the episode I have called the Dance of the Octopus which will be presented afterward.

### **George Clarke.**

In the middle of so many examples of improper behavior offered by lawyers from both sides, he added to his knowledge and excellent technique the demeanor of a real gentleman even when facing a difficult witness. His cross examination of Dr. John Gerdes was an excellent example.

### **Hank Goldberg.**

He was meticulous and well documented in his exposition, but his intonation was monotonous and even if he scored some points it did not provoke any positive reaction, particularly, in one unfriendly juror. His style may be part of

## *The Trial*

his personality, but he is very young and will acquire some histrionics to increase his effectiveness. He had, however, a very rewarding moment when he deflated Barry Scheck in the climax of Dennis Fung's cross examination. He was punished by Judge Ito, but he did not regret presenting a sheet of paper with the staple holes that destroyed Scheck's hypothesis of misfeasance.

### **Detective Mark Fuhrman.**

At the preliminary hearing, Fuhrman appeared like the super-detective; intelligent, with great disposition to fulfill his duties, in excellent physical condition. He was ready to jump into O.J. Simpson's residence at Rockingham Avenue, he found the blood at the Bronco and most important of all, he found the second glove that matched the one found in the scene of the crime. But, eventually, different sources of information presented him as a racist and a bigot, able to engage in abominable activities. On one occasion, he claimed to be unfit to deal with the black American and Latin environment, because he had anti minority feelings, but after psychiatric examination and internal investigation of his case, the petition, that included to be pensioned, was not granted.

To give him the same opportunity, normally offered any defendant, it could be argued that his attitude, at that time, did not necessarily confirm his racism, because dealing with a high incidence of crime and violence, a sadistic poli-

## *The Trial*

ceman, feeling hate against those minorities, had the opportunity to satisfy his antisocial desires. But, as it will be seen, his personal history developed in the worst possible way. Fuhrman had to take the enormous pressure of a protracted cross examination in which he held his own against Lee Bailey. This veteran lawyer had anticipated on TV that he was looking forward to breaking Fuhrman and no one can deny Bailey knows how to play cat vs. mouse when he has all the advantages the system provides the lawyers against a witness. He usually shows his enjoyment in this kind of situation with a sardonic smile. But Fuhrman presented a stonewall resistance which made him look frustrated. But finally, he got Fuhrman to say under oath, that in the last ten years he had not used the word nigger. Obviously, a great percentage of people, without being racists, would feel uncomfortable in such a predicament and would have admitted, at least the possibility of having used the epithet. But Fuhrman preferred to lie.

Meanwhile, there were two interesting incidents related to this episode. Lee Bailey and Marcia Clark were the protagonists of the first one. In a crucial moment of Fuhrman's cross examination Bailey described his conversation with a man named Sergeant Máximo Córdoba who, according to Bailey, had been insulted and called nigger by Fuhrman. Bailey, theatrically described the scene in which

## *The Trial*

he had talked to Córdoba, “marine to marine.” But, it so happened, that the night before, Córdoba had denied on TV any incident with Fuhrman and, even worse, he also denied having any conversation with Bailey.

Marcia Clark who had known of Córdoba’s statements the night before, jumped and told the court that Bailey had been caught in a lie ...“marine to marine.” Bailey got red like an apple and trembling, all over, protested to having been called a liar. Judge Ito had to close the episode and severely admonished the lawyers.

Next morning, Bailey gave the following explanation: His communication with Córdoba had been by phone through one of his secretaries; moreover, Córdoba had forgotten his incident with Fuhrman, but had recovered his memory in a dream the night before (!).

Nothing else was said about the subject.

Nevertheless, it would be interesting to know the stimulus that induced Sergeant Córdoba’s extremely propitious dream.

In February 1996, U.S. District Judge Maurice Paul, in Ocala, found Lee Bailey in contempt of court for not turning over more than \$21 million. It so happened that Bailey had represented the French-American smuggler Claud Duboc, who pleaded guilty to drug and money-laundering charges. Bailey wants to keep the money as professional fees, while

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the prosecutors claim the money as property of the government. On March 6, after failing to raise \$2.3 million to keep himself out of jail, as the court-ordered, Bailey was led away in chains, hand cuffed and walking in leg irons.

He also had problems with the Internal Revenue Service and the Florida bar because of his handling of the stock and the money for 18 months. But no wonder if he finds a legal solution to his case and keeps a good part of the money. The whole episode is just another symptom of our cultural sickness:

Greed,  
Drug money.  
Crimes.  
Lost Young Lives.  
Broken Families.  
Society.  
Morality.  
Legality.  
Justice?

Laura Hart McKinny, a North Carolina college professor and screenwriter told Cochran, in July 1995, that Fuhrman had used the word nigger in conversations they had taped. McKinny stressed that Fuhrman was her business partner and consultant on a screenplay she had written 10



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years ago, and that he used the word "*in context of our work.*" The defense asked Judge Ito to subpoena the tapes. Cochran went to North Carolina and at a hearing before Judge William Wood of Forsyth County Superior Court in Winston-Salem, N.C., vehemently claimed the material importance of the tape, "in the trial of an innocent man." His petition was denied, because in the tape, Fuhrman represented a fictional character for a screenplay. But Cochran appealed and the verdict was reversed. He intended, by all means, to play the tapes in front of the jury to demonstrate that Fuhrman lied under oath and, even more, that he explained in the tapes how the police planted evidences and brutally battered black Americans. The defense even asked for a special prosecutor with which they intended to put more pressure on Judge Ito into allowing the presentation of the tapes and at the same time to force Fuhrman to shield himself under the 5th Amendment, which would void his testimony and the related evidences. The crucial decision was, to establish whether the tapes should be presented to the jury totally, partially or not at all.

The prosecution was ready to stipulate Fuhrman had lied under oath. But the defense would never be satisfied with such a stipulation. They wanted the jury to hear Fuhrman's voice saying incredible atrocities, including racial epithets, planting evidences, beating and even killing people.

## *The Trial*

On August 29, Laura Hart McKinny gave testimony as a witness for the defense and the tapes were presented to the court in the absence of the jury.

The general reaction, was qualified on Rivera Live Show, as "Apocalyptic." That night the program was extended for two hours instead of the regular time of one hour. To begin with, some of the many offensive expressions included in the tapes, were offered.

### **The Fuhrman's Tapes.**

*About probable cause to arrest black suspects:*

"Probable cause? You are God.

*About shooting:*

"Do you people...don't you shoot to wound them?

No, we shoot to kill them. Now the department says shoot to stop, not kill, which is (expletive). The only way you can stop somebody is to kill the son of a bitch. And what's the big deal? If you've got a reason to shoot somebody, you've got a reason to kill him."

*About intolerant reactions:*

"We just got tired. We basically got impatient with him being so (expletive) stupid, which I thought he was. So we just handcuffed him and went to the scenic route to the station. We searched him again and found the gun. Went over to the baseball diamond and talked to him. When I left, Dana goes, 'No blood, Mark.' No problem, not even any marks Dana. Just

## *The Trial*

body shots. Did you ever try to find a bruise on a nigger? It is pretty tough, huh?"

### *About bigotry:*

"People there don't want niggers in their town. People there don't want Mexicans in their town. They don't want anybody but good people in their town. And anyway you can do to get them out of there, that's fine with them. We have no niggers where I grew up."

### *Police work:*

"He is going to go to the station because he won't have any identification because he gives me his driver's license. I'll just rip the (expletive) up." "When I was working gang, we used to take people, you know. We'd get a murder. We'd have a murder. And sometimes two or three murders. And you'd know which gang did it. But they wouldn't talk. So I would go and pick up three or four gang members and bring them to the station. Take one in the basement and beat the dog (expletive) out of him."

### *About the trial.*

"I'm the key witness in the biggest case of the century. And if I go down, they lose the case..."

There are more and more horrendous things on these tapes and it is amazing to see the different reactions of people facing this nightmare. The prosecution's main problem was the impact tapes could produce in the jury, because it would

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make a conviction practically impossible. By the same reason, the defense wanted to present every part of them as lively as possible.

Among the black American commentators on TV programs the predominant attitude was fierily belligerent. Only one or two black lawyers expressed themselves with equanimity. One said he felt so offended that he wanted to go home to get his gun "to defend himself."

All of them wanted the tapes entirely exposed to the jury and to the public. A black American leader said that the exclusion of the tapes could be a good reason to provoke new riots. Another lawyer, expressed that the tapes show how far away we are from Martin Luther King's dream when all these things are happening, today, in our cities and our police departments. They overlooked, however, that the whole media has been offered to dozens of black American personalities to express their anger, side by side with many non black Americans. A great amount of people have indeed, expressed disgust because of this abhorrent misconduct. They have not acknowledged the moral support and the shared feelings offered by every white American on the media. It has been demonstrated that, people like Fuhrman represent a real minority repudiated by society. This is a healthy sign of undeniable progress in human relationship and, indeed, highly significant for this country. It really should

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be welcome. However, everybody knows that there is a lot more to be done against discrimination. No one should be silent or indifferent, but fanatic reactions should be avoided. Sorrowfully, many black Americans were so enraged that they became more contentious because of Fuhrman. But above all, they just wanted to see O.J. Simpson free with or without the tapes.. Unfortunately, this reaction seems to be black racism accompanied by an immature and obsessive identification with O.J. Simpson.

The modification of the judicial system and the cleaning of Police Departments should be electoral issues. Nevertheless it has to be considered that Fuhrman's behavior, as repugnant as it is, in no way, proves that he planted the glove found at Rockingham, the blood in the Bronco nor any other of the many incriminating evidences against O.J. Simpson. With a dose of dry humor, many would say that the best solution to this case might have been to confine Fuhrman and O.J. Simpson in the same cell for the rest of their lives. After all, It has been said that, in court, guilty and innocent are legal terms totally unrelated to truth and justice.

On August 31, Judge Ito ruled that the jury would hear Fuhrman, using the word nigger, just once, and on another occasion would be taken from a transcript.

This would be enough to impeach him, although it would not show him using the word 41 times.

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Johnny Cochran, in one of his frequent presentations for the public and the media, said Judge Ito's decision was "one of the cruelest, unfairest decisions ever rendered in a criminal court.." With insolent language, he openly accused the judge of participating in the "cover up" against O.J. Simpson. At the same time asked the people of Los Angeles to remain calm, but in a way that sounded more like a reminder to the judge than a petition to the people.

However, that episode did not end the honeymoon between the defense and the judge. Many people expected that the next day Judge Ito would sanction Cochran for his outburst, but instead, the judge looked rather timid and only told Cochran that he was "hurt" by the defense press conference. He called Cochran's statements "contemptible," but did not hold him in contempt.

From the District Attorney's Office there was a different opinion: "The court's ruling will help keep the focus where it should be, on relevant evidence that allows the jury to determine whether Mr. Simpson is responsible for the murders of Ronald Goldman and Nicole Brown Simpson. Now let's get on with the trial."

Eventually, Fuhrman was called as a witness by the defense and he invoked his 5th amendment privilege. The defense wanted him to say the N word in front of the jury, but the petition was denied by Judge Ito who ruled he would di-

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rect the jury that Fuhrman was not available for cross examination and the jury would relate it to his credibility. Marcia Clark protested and Judge Ito was overruled by the court of appeals. The jury had had enough of Fuhrman.

### The Dream Team.

#### Johnny Cochran Jr.

Although Robert Shapiro had been O.J.Simpson's first lawyer during the preliminary hearing, Johnny Cochran, took over the defense's leading role in the trial. Cochran's record included only about 30 criminal cases and his average of acquittal was not impressive. But he says that those factors do not determine the ability of a lawyer.

He has undeniable "*charisma*" and audacity. He is an idol in the black community, with a pleasant personality, a sharp and sly mind with a nonchalant demeanor. He is recognized as a persuasive lawyer and showed more than once his ability to manipulate the generosity of the judge. He was able to address the judge as a *macho* defiant and right after he knew how to offer an innocent mollifying smile. His behavior in court, passing from "*vedette*" to "*prima donna*" is the portrayal of a dandy who knows he is liked and admired.

His opening statement was like thunder. At first glance it seemed reckless and dangerous, but later on, it was possible to understand his strategy and his tactics. He knew of the overwhelming amount of evidences accumulated aga-

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inst his client and that his only possibility consisted in destroying the credibility of each evidence. He also knew of the scientific vulnerability of the LAPD; he did not need to present any coherent or reasonable theory, he just had to create any possible doubt in the minds of friendly jurors and, most important of all, he counted on that jury. He told his own daughter: "If I get the jurors I want I'll get O.J. free" and during one of his early shows to the public and the media, waiting outside the courtroom, someone made reference to the incriminating evidences, and he answered with a smile: "If you knew what I know..."

He figured that race has always been an important issue, specially in Los Angeles, he saw the opportunity to exploit it in the trial and took the subject as far as it could go.

At the convention of the National Association of Black Journalists, celebrated in Philadelphia in August 1995, he instructed black journalists to become advocates of black causes in their reporting. He did not care about the meaning of his words regarding the professionalism, the objectivity and the credibility of the people that invited him to talk. During this presentation, a few awed female attendees had to be shooed away. But for him, everything was a secondary issue, his first objective was to win the trial of the century. Truth and justice did not count, either. In his opening statement he promised evidences of the "real truth" in opposition



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to the "people's theory." But his truth was based on the following hypothesis that in no way, could be harmoniously or logically arranged :

- 1.- Alibi.
- 2.- Corrupted evidences.
- 3.- Contaminated evidences.
- 4.- Compromised evidences.
- 5.- Conspiracy by the LAPD.
- 6.- Colombian "necklace." The drug hit men theory.

He announced, two important witnesses, (Rosa López and Mary Ann Gerchas) who were supposed to give O.J. Simpson an alibi. In so doing, he violated the court's rules, since they had not been properly introduced in the list of witnesses. Marcia Clark protested energetically and as a result, she was allowed to reopen her statement. But he could not care less. He knew he was acting improperly, but he had created the smoke bomb effect he wanted. Moreover, everybody learned, later on, that one of these witnesses, Mary Ann Gerchas, had given bad checks for several thousands of dollars and committed different felonies. A year later she was put in jail. Rosa López, was presented to the court in the absence of the jury, her protracted testimony was filmed to be used if the defense wanted to do so. But the addition of lies and contradictions were so pathetic that no one could believe her. Neither of these two witnesses was ever seen by the ju-

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ry. Which means that, at the end, the defense would not be able to deliver what had been promised in the opening statement.

But, so what?; he knew what kind of people his witnesses were. Rosa López demonstrated, without showing her to the jury, that she was a worthless witness. But in the meantime, the sequestered jury was outside the court for many days not knowing what was going on and the presentation of the prosecution case had been disrupted. Some experts have criticized Johnny Cochran's "mistakes" in the opening statement and said it was just careless work-by the so called "dream team" representing the defense. But on the contrary, he just took a calculated risk to make an impression on the jury since the very beginning and diverted their attention from the overwhelming list of incriminating evidences. Besides, it would have been difficult to punish him for having violated the court's order without hurting the defendant, who had to have a fair trial. Therefore, the judge would not do that.

Cochran said that the evidences presented by the prosecution were Corrupted, Contaminated and Compromised. Besides there was Conspiracy and another "C" could be added to unify all the others: "Cochranized evidences."

He claimed that "there was blood where there should be no blood and there was no blood where there should be blood." This was effective for the common people and the

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friendly jurors, who could not differentiate the value of positive evidence against any meaningless negative evidence. It is common in bloody crimes not to find any weapon nor blood on the killer's hands. What is uncommon is to present so many compelling evidences in one case as it was presented by the prosecution in the Simpson trial. He said that DNA, in this occasion, was modern science put on the wagons that conquered the West. He repeated that the prosecution could not tolerate the "truth" he was ready to offer. Meanwhile, he in particular, and the defense lawyers, in general, have lost credibility at the eyes of many highly qualified experts. As it was mentioned before, he explained that O.J. had cut his finger before going to Chicago. Later on, this version was changed by the defense. The innumerable side bars, were not enough to hide the dirty laundry accumulated during the procedure. Let's list the hypothesis presented by the defense:

### **Simpson's alibi supported by:**

- A). Rosa López. Already discussed.
- B). Mary Ann Gerchas. Already discussed.
- C). He was practicing golf in his court yard. In contradiction with his pretended physical incapacity due to arthritis. One last version, he was at home, sleeping. None of these propositions could account for his whereabouts during the time window established by the prosecution for the double homicide.

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### **Corruption and Contamination.**

The defense has proposed that O.J. Simpson's blood was subtracted from a vial ( that contained EDTA) and was distributed in every possible place to frame him. The nurse that took the blood sample declared he put approximately 7.9 to 8cc. of blood in the vial and in that case about 1cc. seemed to be missing. The prosecution explained that in every laboratory test, some exceeding blood is wasted by spillage, and left behind on pipettes, gloves and other tools and usually nobody takes it into account. There is no proof, whatsoever, to support the blood subtraction, but they claim that Detective Philip Vannatter after receiving Simpson's blood sample made a cross town trip to give it personally to Fung in a suspicious act. Once more, we have to admit that the defense does not have to prove anything, they just have to invent possibilities that may bring any doubt to the minds of friendly jurors. Another form of contamination has been related to the sloppy work of Dennis Fung and Andrea Mazzola during the collection of samples. Besides Fung's sloppiness and carelessness there was his incapacity to answer absurd hypothetical questions in cross examination. Constantly, Barry Scheck showed a mocking disdain for Fung, put words in his mouth and ridiculed him in uncharitable way. Yet, Robert Shapiro in a demonstration of bad taste offered fortune cookies to reporters and other people, saying with sarcasm:

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"These are from Hang Fung restaurant." Later on, at a press conference Shapiro offered an apology to the Chinese colony in the presence of representatives from various Asian lawyers organizations. As an unexpected epilogue, Dennis Fung, after finishing his testimony went and shook hands with O.J. Simpson and his lawyers.

Did anybody understand his attitude?

In August 1995, John Gerdes, a Denver microbiologist, witness for the defense, declared that the LAPD laboratory was a pool of chronic contamination that should be shut down and after suggesting that all PCR testing in forensic situations is fraught with the peril of contamination. However, he had to admit, under the brilliant cross examination of prosecutor George Clarke, that the careless management attributed to LAPD did not interfere with the scientific study corresponding to the charts presented to the court in that moment. These studies were performed by Gary Sims the lead forensic chemist from the California Department of Justice in Berkeley and by Robin Cotton, Director of Cellmark Diagnostics, a private laboratory of Germantown, Md.

Robin Cotton had testified that two of the samples shared a combination of genetic characteristics that would occur in about one out of 9.7 billion Caucasians and about one out of 530 billion blacks. The world population was 5.6 billion the year before and the U.S. population is 261 million.

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On August 8, 1995, Terence Speed, an Australian mathematician, who is Professor in Berkeley dedicated to statistics, was presented as witness for the defense and insisted that those numbers did not have any meaning because they did not take into account the error rate in the laboratory procedures. He admitted, however, that he could not say there were any errors in the samples presented to him, but he insisted: "in general you have to admit the possibility of error."

The debate during cross examination was another example of the waste of time, money and effort when scientific evidences are presented to a jury unable to understand the subject. This means, that a crucial decision must be taken: a) whether the scientific evidence should be excluded from the courtroom in detriment of justice or b) the jury has to be able to understand them.

### **Conspiracy and Compromised Evidences.**

The defense selected, as the main tactic and strategy to put the Los Angeles Police Department on trial.

No one can deny the existence of bad policemen and the lack of efficiency that the LAPD has shown in different scientific aspects. But on the other hand, it is undeniable that many good policemen have died in the line of duty to protect citizens against crime.

However, it was necessary for the defense to destroy the credibility of the LAPD in every aspect: Conspiracy, plan-

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ted evidence, incapacity, sloppiness and whatever possible wrong doing, even if one contradicted the other. All of them had to be included to win this case.

Unfortunately, the low scientific standard observed in some aspects of the police's performance was demonstrated and magnified since the very beginning. The defense presented the time that elapsed before the detectives called the coroner in the investigation of this double homicide, as a tragic event. It was, indeed, a negative factor which did not permit the use of the forensic methods to establish the time of death and the defense took advantage presenting the subject as a mountain of wrong doing. However, the best forensic study would have been unable to determine the time of death within a margin of minutes, as it was required in this particular case, to prove or disprove the necessary time window to support an alibi.

Moreover, it is of greater importance to know who committed the crime than to establish when the crime occurred. And there are other mechanisms that can help establish the time of death. In this case, it could be done with the accumulated circumstantial evidences, including the "wail of a dog." But the defense took advantage of this and many mistakes of the pathologist during the autopsy, to put the LAPD on trial instead of the defendant. To justify the conspiracy and the theory of planted evidence, the race factor was introdu-

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ced. Robert Shapiro and his old friend, Lee Bailey, to whom he once defended in a case of driving under the influence of alcohol, had serious disagreements with regards to the race subject and there were ugly accusations against Bailey, including leaking. Epithets as strong as snake and traitor were made public. This created a fissure in the defense structure that, eventually, was converted into a gap, but because of the amount of money involved, they had to live with each other until the end of the trial.

### **The Colombian “necklace”.**

The defense claimed that Nicole Brown Simpson was mistakenly murdered by drug hit men out to kill Faye Resnik, her cocaine-abusing friend, because some unidentified Colombian drug dealers were mad at Resnick who had failed to pay her drug bills.

This alternative theory was also introduced by Johnny Cochran in his opening statement, but it was rejected by Judge Ito because the scenery proposed by the defense was too vague to meet legal requirements to bring up accusations of so-called third party culpability.

He refused to allow Christian Reichardt, who was Resnick's former boyfriend, to testify about her drug addiction, her use of cocaine while rooming with Nicole and her admission to a drug rehabilitation program a few days before the double homicide.



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Stan Goldman, Professor of the Loyola University who has been very frequently invited, as an expert, in many TV programs, said: "I think it's a major hit for the defense, it may spell the end of the ability to present any evidence on this drug theory related to the Colombian drug cartel."

**Robert Shapiro and Dr. Lakshmanan Sathya-  
vagiswaran. The Dance of the Octopus.**

Robert Shapiro was the first lawyer to defend O.J. Simpson, but eventually, he had to give up his place for Johnny Cochran Jr. to take over to play the race card.

Dr. Lakshmanan was an important witness for the prosecution, who postulated, among other things:

a) That the reduced area of the scene of the crime and the disposition of the pool of blood, could only allow the presence of a single perpetrator. More than one person would have notoriously disarranged the actual findings.

b) The regularity of the edges of the wounds indicated that the victims had been practically immobilized when the injuries occurred.

c) Although some of the wounds in which the weapon did not penetrate very deep, could have been inflicted with a single or double edged knife other deeper wounds established that the blade had a single edge and was about six inches long. Dr. Lakshmanan stated, Nicole went to the door, probably expecting Ron Goldman, who would bring her

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mother's glasses and found instead, her killer who dressed in black, with a knit cap and a knife in his gloved hands, hit her on the head, as was indicated by the lesion with significant cerebral damage found in the autopsy.

She instantly fell unconscious, facing the ground.

Then the attacker turned his attention towards Ronald Goldman and after killing him returned to cut her throat.

According to the prosecution, O.J. inflicted so many ferocious wounds that she was really killed over and over again. To see the enormous display of photos shown to the jury was almost unbearable.

Finally, after he killed Ron Goldman he decided to go back to Nicole, lifted her head by her hair while he pressed her back with his foot to expose her neck, and cut so deep and hard that the knife, after excising the jugular veins and carotid arteries, reached the spine.

A torrential hemorrhage covered the ground with a pool of blood. This would have been enough to kill her almost instantaneously.

Dr. Lakshmanan's direct examination conducted by Brian Kelberg, a brilliant prosecutor that added physical demonstrations to the explanations offered by the witness, took about a week. The cross examination by Robert Shapiro took less than an hour and it has been celebrated as a masterpiece. Apparently, he mesmerized everybody, including Kel-

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berg and Dr. Lakshmanan who accepted with docility that he only knew that two people had been killed by multiple wounds, but he could not say at what time they had been killed, whether there were more than one perpetrators with two, three or five knives with a single or double edge. In the meantime, as if performing a ballet, he was making different movements to explain the many possible ways the knives could have been handled. Until today, I have no explanation to the emotional reaction of the expert witness, who suddenly forgot the three fundamental points he had established by objective observations of the scene of the crime, based on fundamental forensic science.

He had said that the limited area could not allow the presence of more than one perpetrator without provoking many changes in the physical findings, therefore an isolated perpetrator could not use two, three or five knives, because he had to use one hand to immobilize the victim. There was only one perpetrator with a knife. To handle several knives the attacker had to be an octopus. But Shapiro prevailed.

### **Gerald Uelman.**

He is very persuasive, has great experience and extensive knowledge of the criminal law and its technicalities.

### **Barry Scheck.**

Imported from New York as a scientific expert for the defense, made a crafty cross examination of Dennis Fung.

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He is a meticulous observer of small details and his effort to acquire a scientific background, as a lawyer, is commendable. Although, he is not eloquent, he compensates his lack of words, with body acting, and the changes of his voice intonations. He probably knows that human faces are exquisitely expressive instruments. Behind our facial skin lies an intricate web of musculature, concentrated especially around the eyes and mouth evolved purely for social communication. The muscles may express interest, fear, suspicion, joy, contentment, doubt, surprise, and countless other emotions. Each emotion can be further modified by the raising of an eyebrow or the slight flick of a cheek muscle to express, say, measured surprise, wild surprise, disappointed surprise, and so on.

It is estimated that the 22 muscles on each side of the face can be called on to produce 10,000 different facial actions or expressions.

Barry Scheck may use all of them, and more, to attract the attention of the jury and to transmit to them the message he wants. He only fails when he intends to offer a sweet smile. When the jurors do not understand the scientific meaning of the debate, as it usually happens, they will probably depend on his dramatic presentations. But, it also means, that the presence of scientifically minded panelists would considerably reduce the benefits of his showmanship.

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### **Peter Neufeld.**

Also from the East coast, was efficient but not so spectacular and, at the beginning, had some problems with Judge Ito, who made him write a check to pay a fine.

### **Robert Blasier.**

As a member of the scientific lawyers for the defense he intended to be effective with aggressive and caustic expressions, but his efforts to be noticed were diluted in an environment overcrowded with gigantic Egos.

### **Carl Douglas.**

After a not very becoming cross examination of Ronald Shipp and having to take the responsibilities of violations of the court's law concerning reciprocity of discoveries, his activities in the courtroom were very limited.

But he enjoyed himself addressing the public and the media after the presentation of the testimonies.

By the way, Ronald Shipp is a former policeman who met O.J. Simpson in 1968 and described a conversation he had with the defendant the day after the crime, in which Simpson said he had dreams of killing his wife.

Several members of the Simpson family declared that in that occasion Shipp was drunk and they never saw him speaking with O.J. Shipp said he had to offer his testimony, because he did not want to have Nicole's blood on his hands.

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### **Two witnesses on the wrong side.**

The testimony of Robert Heidstra, a witness for the defense, offered many favorable facts for the prosecution and gave an idea of the last moments of Ron Goldman. Besides admitting that he saw a white car that looked like a Jeep but could have been a Bronco, speeding from Bundy right after the crime had occurred, he said that on passing Nicole's house he heard two voices, the first one, saying !Hey! !Hey! !Hey! sounding like a younger person; the second voice seemed to him like an older man but he could not understand the words emitted. The prosecution claimed he had said that the second voice sounded like a black man and that he had recognized O.J. Simpson's voice. But in his testimony he did not admit the racial implication nor the identification. However, it seems that Ron Goldman saw the perpetrator, called his attention and in spite of being unarmed, he courageously faced the ferocity of the aggressor who killed and over killed him just because he happened to be there.

But before falling, he tenaciously defended himself and provoked several wounds and abrasions in the left hand of the attacker, which produced the blood found by the police at the left side of the shoe prints.

The multiplicity and the character of the lesions on O.J. Simpson's hands were also established by the testimony of another witness for the defense, Dr. Robert Huizenga, who

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after having presented O.J. as Tarzan's grandfather, admitted that he was able to commit the crime in spite of the arthritis he had complained about.

### **EDTA debates.**

It has already been explained, that enzymes are responsible for the enormous amount of biochemical reactions involved in the complicated cellular functions. Enzymatic activity may be enhanced (induction) by the presence of a substance. On occasions, two different molecules on which the enzyme has its specific influence (substrate) *compete* for the activity of a particular enzyme and reduce its biochemical effect. In other cases the enzymatic activity may be inhibited by other molecules. A *noncompetitive inhibitor* can combine with either the free enzyme or with the enzyme-substrate complex interfering with the action of both. The mechanism of blood coagulation involves the activity of a group of different enzymes. Some enzymes that require the presence of metal *ions* (ion is an atom or group of atoms having negative or positive electric charge as a result of having gained or lost one or more electrons) for its activity, are inhibited noncompetitively by some agents capable of binding the essential metal.

EDTA has been predominantly used in laboratories to prevent blood coagulation, but nowadays is very common in detergents and in the preservation of vegetables and sau-

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ces, as for instance, mayonnaise. The absorption of EDTA from the digestive tract, the possible participation of the liver cell to degrade or conjugate it before its elimination has never been sufficiently studied, and the same occurs with the variation of its concentration in circulating blood related to the diet.

EDTA, is a *chelating* (from Latin Kela =Claw) agent that reversibly binds several divalent cations and thus noncompetitively inhibits some of the involved enzymatic activity.

Calcium is a divalent cation, which participates in the mechanism of blood coagulation and binds to EDTA. Its symbol is  $(Ca)^{++}$ .

Modern technology provides some highly sophisticated and extremely expensive equipment as those used in the FBI laboratory, to perform different methods of Mass Spectrography in order to establish the presence of many substances of great importance in physiology, pharmacology, toxicology, etc. That type of equipment was used to determine the presence of EDTA in the socks that were found in O.J. Simpson's bedroom and in the blood found on an iron door of Nicole's house.

The presence of EDTA is confirmed by locating specific electric signs of different members of the family ions derived from its very stable molecule. Very often, these signs are accompanied by electric irregularities (*noise*) due to the



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presence of other components that may create false interpretations of data and require additional investigations to confirm the real meaning of its findings, suggestive of or consistent with the presence of the investigated subject.

During the debates of the Simpson trial there were two different interpretations of the findings. Fredric Rieders, a toxicologist with a Ph.D. in Chemistry with controversial forensic experiences, including erroneous positive interpretations of toxic substances, in a previous trial, was presented as a witness for the defense and he insistently declared that the results of the tests pointed to the presence of EDTA on the gate and in the blood found on the socks.

Meanwhile, Roger Martz, a forensic expert in charge of the chemical analysis section of the FBI's laboratory in Washington denied, emphatically, its presence.

It means that the verdict could depend on which expert witness, would be preferred by the jury.

But, how can they appreciate which testimony is really valid? To answer such an important question they have no other way, but to depend on their personal emotions and bias.

Some lawyers have said that the credentials and the demeanor of each witness may give some orientation. But such an orientation is meaningless, compared to the conclusion that can be obtained by scientific judgment.

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When dealing with mercenary witnesses the jury must include panelists with proper scientific qualifications, to be able to establish the truth.

Dr. Rieders, has a Ph.D. and an exuberant anatomy added to a demeanor disdainfully arrogant and very impressive. However, he had no experience, whatsoever, with the highly sophisticated technology used by Roger Martz and even admitted his surprise when he learned of the speed with which the new methods provides the results. He had not performed a single experiment regarding the debated evidence. Nevertheless, he dared to challenge, in court, Roger Martz's interpretation of those results in a way that could only be persuasive for a jury unable to understand what he was talking about, but wishing to believe him.

Roger Martz, is much younger, looks like Dr. Rieder's pupil and his academic credits do not reach the Ph.D. level; but he has been brilliant enough, to deserve his high position as Director of the FBI laboratory in which some members of the staff do have a Ph.D.

In spite of being a Special FBI Agent, he was called as an expert witness for the defense and during the direct examination Robert Blasier, the defense lawyer expert in DNA and scientific discoveries, asked: Are these findings consistent with the presence of EDTA? He answered, yes. But after the lunch break, his attitude and his answers were

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more exegetic and he explained the scientific meanings involved in the questions and their answers. After that, Blasier asked: "Did you decide ...you had to become an advocate? Martz answered: "I decided I had to be more truthful. I was not being entirely truthful with yes and no answers... I decided I wanted to tell the whole truth." He explained that "When something is consistent with something else, it does not mean a positive identification." Then, he added, "In order to identify something you have to have something unique." Peaks depicted on a graph were consistent with the presence of EDTA, which means that EDTA "could be present" but not that it was definitely there. "Everyone is saying I found EDTA (in the blood samples). I never said that." "EDTA was not present on the sock or on the gate. I believe my data has been misinterpreted by someone else."

Blasier obtained permission from Judge Ito to declare Martz a hostile witness.

Martz, repeated again and again the same response when Marcia Clark asked him the same questions on cross examination.

This is another example of scientific evidence that could be very valuable in the search for truth and justice but that will be necessarily wasted if it cannot be appreciated by the jury.

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### **The Mercenary Experts.**

The scientific experts are at the same time, expert witnesses that learn how to behave in front of the jury and how to handle the most difficult questions.

They can use diluted general concepts to evade a particular subject and to introduce hypothesis in favor of the client that pays their fees. They do not have to say a lie, they just have to deceive the jury. When acting for the defense, they only need to create doubt.

It is not difficult to see, however, the enormous difference that would be obtained if these experts had to face a jury comprised by real scientists and retired judges.

That jury would not be confused or deceived.

Among the scientific experts called by the defense in the O.J Simpson trial, one received over \$100,000, two over \$35,000 and other over \$10,000.

I heard that they are called "whores."

The presentation of Dr. Henry Lee, deserves a very special place. He is a real scientist with no economical interest whatsoever. The money he received in the trial was donated to his University for fellowships and laboratory equipment. However, the prosecution had to pay a high price because of poor public relations. He is a pre-eminent personality in forensic science who has received all kinds of honors and distinctions around the world. Nevertheless he complain-

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ed of the treatment he received when he arrived at the LAPD laboratories. He felt he was not welcome and during his testimony he repeated, without any question asked about the subject, that he was not speaking to criticize any one.

But that was, exactly, what he did and not always objectively. Shapiro, treated him as a demigod and used the most refined *savoir-fair* to please Dr. Lee's Ego.

Dr. Henry Lee, found *what could be consistent with* another shoe print at the scene of the crime.

But on September 15, William Bodziak, an FBI expert in shoe prints, struck a shattering blow to the defense theory that the traces of two killers could be found at the scene of the double murder by following their footsteps on the walkway.

He said: "I am not here to criticize what Dr. Lee said. I am here to clarify." He told the jurors that Dr. Lee mistook old tool marks on the concrete walkway outside Nicole Brown Simpson's condominium for fresh imprints, and he belatedly photographed other imprints that were not present shortly after the murders of Nicole and Ron Goldman. In a news conference in Connecticut, Dr. Lee said his testimony was misinterpreted and contended that he never testified about some of the stains that Bodziak told the jurors about. He added that "A trial should not become a game. I'm a little bit disappointed about the whole process." He said he had no plans

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to testify for the defense during its rebuttal and that he had not decided what he would do if the defense subpoenaed him. The jury, however, never knew about these comments. Myrna Raeder, Southwestern University Law School Professor said: "Bodziak was an incredibly strong witness. He may have given the prosecution that home run it needs on the one assailant theory."

It is not surprising to find people with scientific credentials ready to participate in questionable moneymaking activities. *They belong to a culture with a hierarchy of values dictated by money and morally void from top to bottom.*

People involved in the process of Econocracy, worship a primordial trilogy represented by MONEY, POWER and FAME.

### **Closing Arguments.**

The grounds of the final battle were well defined.

The prosecution presented O.J. Simpson as a blood thirsty killer, furiously jealous and frustrated, that committed the horrendous double murder as a deliberate, premeditated act. The defense tried to shift the attention from O.J. Simpson by putting Mark Fuhrman and the LAPD, on trial, responsible for a racial conspiracy to frame O.J. Simpson.

Marcia Clark, began slowly, showing very little emotion, but meticulously presenting a chart with the "Window of Opportunity" in which O.J. Simpson could have killed the two

## *The Trial*

victims. The chart started at the moment in which O.J. had gone to McDonald's with Kato the evening of June 12 until the arrival of O.J. at his home, according to the testimony of Allan Park.

Let's see:

June 12, 1994.

9:10 pm. McDonald's.

Simpson drives house guest Kato Kaelin to McDonald's in his Bentley.

9:36 pm.

Simpson and Kato return to Rockingham.

Last time seen before slaying.

10:03 pm.

Simpson calls his girlfriend, Paula Barbieri, from the cell phone in his Bronco.

10:15 pm.

Pablo Fenjves hears Nicole's dog barking and then a "plaintive wail."

10:22 pm.

Limo driver, Allan Park, drives down Rockingham and does not see a white Bronco.

10:40 pm.

Allan Park pulls up to the gate on Ashford and rings the buzzer. No one answers.

10:45-50 pm.

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Nicole's Simpson neighbor sees Kato (Nicole's Aki-ta) with bloody paws, on the side walk outside Nicole's house on 875 South Bundy Drive.

10:51-52 pm.

Kato Kaelin hears three thumps on the wall outside his room. About this incident, Marcia Clark gives the following explanation: The defendant came back from Bundy in a hurry. Ronald Goldman upset his plans, and things took a little longer than anticipated... He was in a hurry, he was moving quickly down a dark, narrow pathway overhung with trees, strewn with leaves and in his haste he ran right into the air conditioning that was hanging over the south pathway. And running into that air conditioner it caused him to fall against the wall, making the wall of Kato's room shake.

10:54 pm.

Allan Park sees a black man entering the front door at Rockingham.

Marcia Clark: Why didn't the defendant let Allan Park drive into the driveway? Because the defendant was frazzled, ladies and gentlemen. He was hurried. And he needed to buy some time. Time to wash himself up, wash off the blood, change the clothes, and compose himself to appear normal.

11:15 pm.

Simpson and Park leave for the airport.



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Let's add some highlights from Marcia Clark's arguments: "From 9:36pm until 10:54 pm. the defendant's whereabouts were unaccounted for."

"Now, I would like to start the evidence in this case with the timing."

"So we know that Ron went home and changed clothes after he left the Mezzaluna at about 9:50. The other waitress in the restaurant, Tia Gavin, testified that it takes about a minute to walk from the Mezzaluna to his apartment. So even being a little generous, he got home by about 9:05. He changed and freshened up, because we know he wasn't wearing that waiter's uniform when he was found. So it would be reasonable to infer that he got to Nicole's house with the envelope sometime shortly after 10 o'clock. And when I say sometime shortly after 10 o'clock, we don't know exactly what time, and I'm not saying that we do, but 10:10 or so would seem a reasonable amount of time to get freshened up, change and get over there, based on what we do know... Now, the neighbor Steve Schwab, noticed that the dog's paws had blood on it, but he did not testify that he saw any paw prints on the sidewalk. Does that mean that they weren't there? No. It means he didn't notice them..."

Did it strike you as odd that he'd take a Bentley to drive-through to McDonald's when he's got a Bronco? It's not like there's no other car."

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“At the conclusion of all our arguments, when you open up the windows and let the cool air blow out the smoke screen that has been created by the defense with a cool wind of reason, you will see that the defendant has been proven guilty, easily, beyond a reasonable doubt.”

“When you look at these pictures, ladies and gentlemen, you see rage.” “You see fury. You see overkill.” “This is not the mark of a professional killer. These are not efficient murders.” “These are murders that are really slaughters and are personal.” “In that respect they reveal a great deal about who did them.” She made among her most scathing comments about Simpson, contending his “lies” after the crimes proved he had a “consciousness of guilt.” “No stranger, no Colombian drug dealer. A man who was involved with his intended victim. One who wanted to control her and failed, and failing found the one way to keep her under control where she could never slip out of it again, and that man is the defendant.” “She is lying there, basically unconscious, he pulls back her head and slashes her throat to such a degree that she is nearly decapitated.”

“That was a cold and calculated decision to kill, to make sure she was dead.”

“A gun makes noise, a knife doesn’t.”

“We have linked the defendant to the crime scene.

We have linked the defendant to the victims.

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We have linked the defendant and the victims to his car, and that link has reached from Bundy into his bedroom at Rockingham.

They are all interwoven by time, by space, by occurrence, by science.”

“Now, do you put a step ladder, do you put a basket of laundry in front of a door that you use? Obviously not.

So there was no other way in and that is why, -repeated- that is why, Allan Park saw the defendant walking in the door that night and I’m going to tell you something, ladies and gentlemen, that was the defining moment of this trial. That was the one.

Because when you understand that the defendant was out that night, when you understand that he lied to Allan Park about being asleep; when you understand that the Bronco was moved and that he was out ...Then you understand where he was when his whereabouts are unaccounted for.

And Allan Park’s testimony is unrefuted.”

“Wouldn’t it be a tragedy if with such overwhelming evidence, ladies and gentlemen, that we have presented to you, you found the defendant not guilty in spite of all that because of the racist attitude of one police officer?”

She was assembling pieces of a computer generated puzzle that soon took the shape of Simpson’s face.

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The first piece, part of Simpson forehead, was placed on the board after she outlined the opportunity the former football player had to kill his ex-wife and Goldman.

She filled in the last piece of the jigsaw puzzle after describing what she called the most powerful evidence (the socks with Nicole Simpson's blood found in the defendant's bedroom). When Simpson's face was in full view, Marcia Clark said: "There he is. You have not even heard yet, about the motive. You have not even heard the why of it, and you know he did it."

To explain the motive, was Christopher Darden's task and he did a superb job. During most of the trial Darden had been underrated and very often he suffered Johnny Cochran's cynic and caustic remarks. But when he said: "This is my turn to speak," he was really at his very best. He spoke in low key style; nothing bombastic no pretension of being brilliant. Slowly, down to earth, warm with feelings, but without exaggeration, he was able to bring the focus towards the victims and the defendant and what was, perhaps more important, with another jury, he could have undermined the aggressive exhortation of Johnny Cochran who had portrayed the defendant as a true American hero framed by a corrupt and racist police force.

Cochran urged the jurors to strike a blow against the system sending O.J. free. But Darden pleaded with the jurors

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not to vote for an acquittal based on the conduct of Mark Fuhrman or because of O.J. Simpson was a former football star and a hero.

“There are no (football or otherwise) heroes in this courtroom today. A hero is a man that would rush into a life and death situation to save a woman without ever thinking about himself.”

“You can’t eradicate racism in the LAPD and America, he said, by delivering a verdict of not guilty.” “It is true that Fuhrman is a racist and it is also true that he (pointing to Simpson) killed those two people.” “All of these arguments about the minutia make no sense when you look at the big picture. You look at the big picture and you realize, ‘Well there is nothing sinister here.’ Open the doors. Open the windows. Let in the light here. Blow out the smoke.”

“Because when you look at the whole picture, you see the truth. It is very, very simple.”

“By April of 1992, this woman knew that she was going to die. You heard testimony from a district attorney investigator in this case, and Mr. Michael Stevens testified that in December of 1994 and with the permission of the judge he said that he went to a bank and he drilled a hole in a safe deposit box. Do you recall that testimony? And it was in that safe box that he found a letter...the letter where the defendant says he doesn’t know where he got that crazy.

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They found that letter and they found two other letters from the defendant. From O.J. Simpson to Nicole attempting to get her back, attempting to convince her to take him back, attempting to convince her that things would be better the next time. They found those letters in that safe deposit box, and they found something else. They found a will. This woman's will. It had been executed during 1990, which means she must have been about 30 years old. Do you know many people at the age of 30 who execute wills? But you find her will, his letters and something else. There were some photographs, some photographs from back in 1989. It was after he beat her in 1989, she called her sister Denise, and Denise came over and she showed Denise the injuries that this man inflicted on her and she asked Denise to take pictures of the injuries. Then she put those pictures in the safe deposit box along with her will, along with his letters.

She put those things there for a reason." He implied that the reason was that the jury could see it. "It is time to stand up. It is time to stand up - he repeated with a low, but intense voice. The Constitution says a man has no right to kill and get away with it just because one of the investigating officers is a racist."

"I have been a prosecutor for almost 15 years and if there is a rule that I have lived by-and repeated- if there is a rule that I have lived by, is one rule that means a lot to me, it

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is this one: No one is above the law, not the police, not the rich, no one. O.J. Simpson isn't above the law."

On the other hand, Johnnie Cochran theatrically and with words directed towards the black jurors, passing from the role of preacher, to the school teacher, to the salesman and the rebel rouser, exhorted the jury "to do the right thing and acquit Simpson" as a message against racism and police misconduct.

He invoked biblical texts and said Fuhrman and Vannatter were "twins of deception who bring you a message that you cannot trust." "The LAPD believe he was guilty. They wanted to win. They didn't want to lose another big case... so when they take the law into their own hands, they become worse than the people who break the law because they are the protectors of the law."

"There was another man not too long ago in the world...who wanted to burn people, who had racist views and ultimately had power...People didn't care. People said Adolf Hitler was just crazy, a half-baked painter...This scourge became one of the worst men in the history." "Fuhrman wants to take all black people now and burn them or bomb them. That's genocidal racism." "If we as the people don't continue to hold a mirror up to the face of America and say: 'This is what you promised; this is what you delivered.' If you don't speak out, if you don't stand up, if you don't do what's right,

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this kind of conduct will continue on forever, and we'll never have an ideal society."

Regarding the gloves, he introduced, with doubtful taste, what seemed to be a slogan in a commercial: "It does not fit and if it doesn't fit you must acquit."

He put on a knit cap to ridicule the idea of O.J. Simpson wearing a cap to hide his personality because he would be easily recognized with or without a cap. Christopher Darden rebuffed him, explaining that the cap, together with black clothing in a dark place produced a different result.

But Cochran went even further: "Maybe there is a reason why we're here. Maybe you are the right people at the right time at the right place to say: No more! Stop this cover-up! You are the conscience of this community." "Someone has taken these children's mother. I hope your decision does not take their father." "I know you will stay the course, keep your eye on the prize and do the right thing."

Barry Scheck, described the "contaminated, corrupted and compromised" physical evidence as a "cancer infecting the heart of the case." He continued the attack on scientific evidences, the bloody socks, hairs and fibers, the test tubes and the missing blood, etc. He said the jury could not trust any of the DNA analysis of blood because the samples were contaminated and tampered with in the "black hole" of the LAPD crime lab.



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Once more, during a break in closing arguments, Fred Goldman, bitterly protested the tactic of Simpson's defense. He said that Cochran was a "horror walking around among us." "He is a sick person and should be put away." "He is one of the most disgusting human beings I have ever had to listen to in my life." His main complaint was the hyperbole comparing Fuhrman to Hitler, which many Jews found outrageous and at the end of the trial, Cochran was escorted by body guards offered by The Nation of Islam, which is known for its anti-Semitism.

Marcia Clark had the last words of the closing arguments, during which, she was interrupted by Cochran and Barry Scheck with more than 60 objections. They fragmented her argument and disrupted her rhythm.

"Usually, she said, I feel I'm the only one left to speak for the victims, but Nicole and Ron are speaking to you." Ron, struggling so valiantly forced the killer to leave evidence." "They told you with their blood, with their hair... that he did it-Orenthal Simpson." She presented a chart with a pyramid in which the most incriminating evidences were contained and finally, arranged the audio of the famous 991 call with Nicole's terrified voice filling the courtroom from loudspeakers and O.J. Simpson's voice yelling with uncontrollable rage. The audio was associated to a montage of photos including the bloody gloves, the Bronco, the socks found in O.J. Simp-

## *The Trial*

son bedroom and finally, in impressive color, photographs of Nicole and Ron Goldman in pools of blood outside her condominium, in the early morning of June 13, 1994. Nicole's sisters Tanya and Denise Brown held their hands over their ears and wept with their mother. The emotional charge in the courtroom was unbearable. She added: "I have nothing more to say." "Because we have proved beyond a reasonable doubt...we ask you to find the defendant guilty of murder in the first degree in the murder of Nicole Brown Simpson and Ronald Lyle Goldman."

### **The Verdict.**

On October 2, 1995 The jury rendered the verdict in less than four hours of deliberation. The only request was to read some lines from the transcript of Allan Park's testimony. Not even the description of the shadowed figure of a black man with the height and weight of O.J. was included.

Marcia Clark and Johnnie Cochran were not in the courtroom.

O.J. Simpson was only accompanied by Clark Douglas. The jurors did not even give a look to the defendant.

Judge Ito kept the sealed envelope until the following day at 10 am.

The verdict was: not guilty.

The jurors did not care about any evidence.

They did not need to deliberate.

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They had made up their minds long ago.

It would be useless, to analyze any prosecution's blunder. Those jurors would have never convicted O.J. Simpson one way or the other.

Cochran knew so and said so since the very beginning: "If I get the jury I want, I'll get O.J. free."

Immediately after the verdict, the general reaction of the black Americans was equivalent to celebrating the happy occasion of a championship victory in football or baseball. They were fanatically elated.

¡Feeling is stronger than reason!

It is difficult to see whether they could understand the real meaning of the historical moment this country was going through.

They were totally identified with the triumph of their hero. Their celebrity. Even if he were acquitted only because of "reasonable doubt." Black Americans needed a victory against the social injustice they had suffered for centuries and they stuck to their football hero in spite of the evidences of his guilt in a horrible double murder.

Some of them even showed the satisfaction of revenge: "Now you know how it feels!"

A collective hysteria was exhibited in the streets, in the classrooms of black universities and in T V programs. Were they conscious of their attitude and its meaning?

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### **The Aftermath.**

Right after the verdict, many black Americans insistently repeated: "This time the system worked."

But, did it work because a black man was acquitted when the amount of incriminating evidences was overwhelming?

Did it work because the quality of the evidences was attacked by the defense without any proof of their allegations?

Did it work, because the defense does not have the burden of proof and the veracity of its arguments is established by the jurors personal perceptions in the total absence of scientific criteria?

They also said: The jury gave a verdict, it has to be accepted. And period.

Some jurors were arrogant and disdainful of the questions asked by the media. "We did the right thing." "We heard the evidences during nine months and did not need another nine months to deliberate."

To explain how they arrived at their conclusion they just repeated everything the defense had claimed without foundation: Contaminated evidences, planted evidences, Fuhrman, Vannatter, the blood vial, etc. No one said a single word about the arguments and the evidences presented by the prosecution.

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That is not deliberation.

One juror even committed the profanity of showing the fist of Black Power and added: ¡We won!

That cannot be, in any way, the civilized and mature response after having received the sacred responsibility of searching for truth and justice in the court of law.

To say that it was improper or to say it showed ignorance and fanaticism, does not truly show how offensive and painful it was for the great majority of Americans.

Before this happened, everybody knew that racism was and still is a very serious problem in America. The majority of white people, however, had acquired a less and less belligerent attitude. Nowadays, they do not feel that they should be held responsible for the inhuman episodes of slavery. The majority of them condemn the actual social injustice and feel they should not have to pay for the past.

In Oct. 1995, there was a peculiar situation, in which black Americans and Haitians had a disagreement about the number of churches that should be allowed in a black neighborhood of Delray Beach. Black Americans were opposed to the opening of a church for Haitians and a bitter Haitian said: "The black Americans are so aggressive because of historical frustration. We became a free country after fighting our war for independence, but they are free because white Americans decided so. That's why they have to show they are able

## *The Trial*

to fight a war they think is overdue.” Such an expression is distressing. Today, everyone should embrace the pursuit of human brotherhood. In being aggressive we provoke aggression. Many white supremacists may react as emotionally as the black Americans have reacted during the trial and after the verdict. Where are we heading? Do we need a fanatic confrontation expanding hate between white and black Americans? Does it make any sense to lose the opportunity of a progressive human rapprochement between whites and blacks?

It is very painful to think that this situation was not originated because of a civil rights problem. Instead, it may have been provoked and brought out in the open by the obsession of lawyers who wanted to win the “trial of the century” at all costs.

They did not care and still do not care, what the consequences might be. They never gave a thought to the regretful episodes in the aftermath.

They wanted, above all, the glory, the fame and the money obtained with this victory.

However, even if they are commended as the best lawyers in the world, it is appropriate to say that it is much easier to be a brilliant lawyer when you know, *a priori*, that the jurors are on your side and can be handled because they have intellectual limitations and are emotionally immature.

## *The Trial*

Is there any glory in offending truth, justice, and moral values? And if there is any, we may ask: At what price glory?

Two years after the crime, the subject is still present on TV, newspapers and best sellers. Many people ask: Is it not about time to drop it off? Why does it keep going on?

And the answer is obvious: It is a general reaction against injustice. As it was said in the introduction of this book: Injustice is very painful to man and it deeply hurts society. The fact, that lawyers present injustice as legally admissible, increases the pain and provokes stronger reactions.

The "dream team" has been repudiated and their books intended to justify their conduct are not attractive. Meanwhile, Christopher Darden's, "In Contempt," has been a celebrated best seller.

Fred Goldman is dedicated to obtain whatever possible improvement in the judicial system, to defend the rights of the victims and their families.

Denisse Brown has made important contributions, to create awareness and to educate people about the espouse abuse syndrome.

O.J. may play golf and he may exhibit his smile, but he knows, he is rejected. A civil trial is on the way in which he will have to answer many difficult questions and, moreover, he may have problems with the Internal Revenue Service.

## *The Trial*

But the worst part of the aftermath, is the price that innocent black people have to pay for a crime, a trial and a verdict that profaned justice. Racial antagonism has increased; Affirmative Action suffered a set back and as we mentioned before, many churches in black communities, have been put on fire during the first half of 1996. So far, no one has been found responsible. Many people believe that these epidemic episodes of terrorism are related to the verdict of the Simpson trial. We have to pray that primitive reactions and insanity do not create more suffering.

Let's hope that after all the excitement, people will calm down and think of the importance of this negative, national episode.

White and black Americans should change their attitudes regarding the problems affecting the American culture.

A new philosophical orientation is absolutely necessary, in order to save the American Dream.



# AFTERWARDS

**Unexpected help.**

## AFTERWARDS

So far, in all my books, my favorite subject has been the study of Man as a conscious observer of Nature.

On this occasion, Man is presented as a social entity.

Cultural, historic, moral and economical aspects are considered.

I have introduced the terms, Econocracy and Econocraziness.

After I had finished this book, the following article was published by The New York Times and reproduced by the Sun Sentinel, on August 30 1996. It will give the necessary insight to the "why" of my usance of these words:

"The International Monetary Fund has indicated for the first time that it may be willing to sell some of its \$40 billion supply of gold and use the proceeds as an outright gift to reduce the foreign debts of the poorest developing countries, allowing them to improve economic growth and attract more foreign investment. This is one of several concessions that the IMF and the World Bank have made to critics, who regard their March debt reduction plan to make concessional loans as still being too onerous for the poor. The new plan was sent in confidential, outline form to member governments at the end of August 1996; to be discussed by the executive boards of both institutions next month.

Officials say it is still unclear whether this debt-reduction initiative -first called for by the Group of Seven leading indus-

trial nations at a summit meeting in Halifax, Nova Scotia, in 1995- will be approved, as had been hoped, at the ministerial meetings of the World Bank and the IMF in Washington at the end of September. It is expected to cost between \$5.6 billion and \$7.7 billion over six years.

Although the United States favor gold sales to finance debt relief, other Western industrial countries, which control both institutions, remain divided over the wisdom of allowing the IMF to sell any of its gold when it has some \$30 billion in outstanding loan commitments to Russia and Mexico. Germany leads the opposition, and is supported by Italy, Switzerland, Norway and Sweden.

In addition, officials say the so-called Paris Club of Western creditors nations is proving slow to heed a call in June by the Group of Seven at a summit meeting in Lyon, France, to raise the level of forgiveness offered qualifying poor countries to 90 percent of their direct debts from 67 percent.

World Bank officials who returned at the end of August 1996 from talks with the Paris Club secretariat say the creditors have done little so far to prepare the ground-work for a more generous treatment of debtors, despite the personal commitment of French President Jacques Chirac.

'This whole debt initiative is in danger of ending up as an empty charade if there is not a rapid agreement on IMF gold sales and more generous Paris Club terms,' said Justin Forsyth, Washington director of Oxfam International, a privately financed aid agency lobbying for debt reliefs.

The World Bank and the IMF have proposed that about 20 of the poorest countries, whose debts exceed a range of 200

to 250 percent of their annual export earnings, should qualify for relief under the plan, provided they take steps to strengthen their economies. Among these countries are Zaire, Mozambique, Bolivia, Nicaragua and Uganda.

As an illustration of the hardship imposed by high debt burdens, Oxfam International has calculated that Uganda spends \$17 per person on debt repayment annual but only \$3 on health care.

In the latest version of the debt-relief plan, IMF documents say that the agency is ready to use the proceeds of a gold sale to make "loans or grants" to eligible developing countries so they can pay off some of the money they owe it, signifying that the institution is no longer insisting that poor nations repay it.

Previously, the IMF, which all along has taken a more cautious approach to debt relief than the World Bank, wanted to extend low-interest 10 years loans to eligible countries. Critics complained that this would add to the developing world's debt in stead of reducing it."

Why this sudden restlessness?

Have they perceived the proximity of a mega-crisis as the models of dynamic systems have suggested?

Have they reached the point of no return?

# APPENDIX

*Voices from the media  
related to some of the symptoms previously mentioned.*

## APPENDIX

### About our hierarchy of values.

It is a real pleasure to quote from Kingsley Guy, editorial writer of the Sun Sentinel, on June 1, 1995: "Historically, Memorial Day has had a transcendent value, with people using it to reflect on the past and remember those who shaped their lives. That original purpose has changed quite a bit during the last few decades. Memorial Day traditionally was celebrated on May 30, but the federal observance was changed in 1971 to the last Monday in May in order to give people a three-day weekend. Throughout the long weekend, people are bombarded with advertisements proclaiming Memorial Day sales on everything from furniture to fertilizer.

The holiday has devolved from a day of reflection to a much -anticipated-mini-vacation for producers in which they are encouraged to consume, so they can produce more and maintain the cycle of production and consumption that causes the economy to expand.

*Produce and consume, produce and consume, produce and consume.* This has become the mantra of late 20th century America. It permeates our politics, regardless of party label.

Democrats decry unfairness in the nation's production system, and argue for the redistribution of wealth so the less fortunate share more of the fruits of society. In other words, become better consumers. Republicans argue for a balanced budget and tax cuts to encourage investment in productive capacity, which will create more for every one. More to consume, that is. Mainline politicians in the United States from both major parties have a lot in common with Karl Marx, the godfather of modern communism: They believe history is determined by economics, and if only they can straighten out the nation's economic problems everything will be fine.

## Appendix

Certainly, economics plays a major role in shaping a nation's and the world's destiny. But economics is not the exclusive force behind the development of humankind. People are also driven by a search for meaning in life, and while for many Americans meaning comes packaged in a Mercedes Benz, for others it takes on a more sublime form. Millions of parents find meaning in rearing children to be honest, compassionate and ethical people, though not necessarily wealthy ones. Some Americans seek meaning by taking Thoreau's words to heart, and simplifying their lives in an effort to create their own Walden Pond.

Alexander Solzhenitsyn, Pope John Paul II and members of the America's Christian Coalition are among those who recognize society needs a transcendent dimension to politics if it is to rise above crass materialism. Problems arise, unfortunately, when moralists try to turn their outlook into social dogma and insist everyone think and act the way they do, even though others are operating under a valid moral code of their own." The resulting intolerance often confirms C.S. Lewis observation that evil is perverted good.

The American electorate increasingly realizes that the nation faces a moral crisis that can't be successfully dealt with through popular secular dogma. So in the years ahead, the politics of meaning, as opposed to the politics of materialism, will take on greater importance as American seek to reverse the decline of their society. If tolerance is recognized as a transcendent value, the result will be positive. And who knows? Memorial Day may even revert to its original purpose."

This is a beautiful page but, it should be clear that no one can have a pretended "valid moral code of his own," based on lies, cynicism and greed.

### About racial tension.

The Special Edition of Life Magazine, in May 25 1995 has a picture of Nancy Leftenant-Colon, the first black nurse in the Regular Army Nurse Corps. She retired as a major in 1965, the same year in which Martin Luther King Jr. took 25,000 black men from Selma to Montgomery. It may be worth, to quote her story as it was printed in that special edition of Life.

"My mother was the daughter of a freed slave. My father was the son of a slave. There were 12 of us kids, and in the evenings our parents would tell us about their childhoods and what was going on down South. They would also tell us how to behave in difficult situations, so we were very well prepared to go out and survive. I grew up on Long Island. Our teachers, who were all white, were just great and never made any distinctions between us.

I 'd always wanted to be a nurse and attended Lincoln School for Nurses, a school for minorities, which meant black nurses and Jewish doctors. One day I saw a picture of an Army nurse, with her cape on, and said: I love it! After graduation, I went through basic training and then to Fort Devans in Massachusetts. At Fort Devans, we were really resented by the white nurses. We were 36 kids, black at that, and they wouldn't even talk to us. We took off in high gear. The doctors recognized this and often preferred black nurses, which made it just awful. On top of that, the German prisoners working in the kitchen had never seen black women before. When we could come in for lunch, they would leave the white nurses to serve us. That didn't sit too well either. But these were things we would giggle over in the barracks. Everyone would say, 'Oh, forget it,' and rise above it. We did such a good job that we were promoted from second lieutenants to first lieutenants in 11 months. That was unheard of. My parents had told me, 'You treat a



## Appendix

man the way you want to be treated, and you will never have any trouble.' In my life, that's been quite true. But another thing they taught us was equally important: You cannot be thin-skinned. There are those who really snap at bigotry, and that's not the best way to fight it. I just figure, Oh! they're ignorant. Unless, of course, it's too obvious. In 1958, I was in Texas with five colleagues, I was the only black. Thelma, an old friend from up North, found out we were there and said, 'I'm going to take you all out to lunch.' I knew better, but I didn't say a word. We got to the restaurant and the maitre d' told Thelma, 'You can't eat here.' Thelma said, 'What do you mean? Why can't I eat here?' The maitre d' looked at me and said, 'Because she can't eat here.'

Thelma's face got as red as a beet, she was so upset. My friends were so sorry that I had gone through this and tried in every way to protect me. They could not believe it could happen in the United States."

Nowadays, no one would be comfortable about this story. Thank heavens, things are different. But not all the differences are favorable. Many people, for instance, may envy the family picture she has described, because one of the main problems we are facing, relates to the absent symbolism of family, the single mothers, the lack of responsibility exhibited by young people having children they will never be able to take care of; the strange fathers for whom the children do not exist, et cetera. Those days were, by far, more difficult, but a family united by moral values, could give love, protection and a right education to their children. Today, having much better opportunities, but lacking the morals of older generations, the results are depressant.

## Appendix

I always enjoy reading Stebbins Jefferson's column, as an editorial writer for the Palm Beach Post. Here is one, before the verdict of the Simpson trial:

" 'You are too hung up on this O.J. case, Jeffie,' Bernard Thomas, my former class-mate, said as I chatted with him at the corner gas station. -I know, B.T. But I have a nagging feeling that this trial is telling us something about ourselves that's important, only we can't hear it.- 'Yeah,- B.T. said- It's telling us something, all right: that we are going too far. And what I hear is we're making it some kinda test on law and order and black and white. If we ain't careful, we gonna let this TV show about a big-time celebrity back us into a corner that none of us-white or black- can get out of without beating up on each other.' -I don't know what you mean by that, B.T., but I do know jurors are dropping like moths around a flame. And Christopher Darden, the one black prosecutor, confessed in an interview that he's thoroughly fed up with the system-

-I tell you, B.T., I'm disgusted, disillusioned, frustrated and confused by the whole mess.-

'Jeffie, this case is not about the murders of the century. Them fools blowing up all them people in Oklahoma City qualify for that title.'

-Maybe it is, maybe...-

'Get back to the basics, Jeffie, B.T. continued. O.J.'s trial is about whether a man who loved a woman killed her when he discovered their thing was over. And whether another person got in the way and got killed too. Wouldn't be the first time something like that happened. And ain't likely to be the last.'

-B.T., that's easy to say, but this case is dividing families and friends over whether one or the other believes, The Juice is guilty. Loyalty and betrayal is being determined by what you believe or don't believe about O.J. or the prose-

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cution. The whole thing has gotten so out of hand that now the judge is being accused of being on the prosecution's team because he expelled a black juror accused of staring at a Hispanic woman.-

'Yeah, Jeffie, I heard all about that. Seems Judge Ito kicked a man off the jury who's a supervisor at the post office... Like post office workers staring at people or off in space is something new.'

-See, B.T., you've got doubts yourself... When this trial is over no matter what the verdict of even if there's no verdict, we're going to have an even harder time trying to trust each other or any Establishment system.- 'Be that as it may, you got to stop thinking everybody, black and white. is on trial with O.J.' -And why not?" I asked, as much as admitting that possibility has crossed my mind. 'I do believe, B.T. answered with deliberated patience, whether The Juice done the murder or not, he's not the type of dude that went around thinking of hisself as a symbol of anybody but hisself. So we got no right to make him our world representative now.'

-I'll try to think that way, B.T., but won't be easy. With only two alternate jurors left and months to go in this trial, the case could end up having to be tried all over again. I don't think America could stand it."

'It don't do no good to worry about a natural disaster before it happens, Jeffie. Nothing you can do about it, unless you got some info that can clear up all the Mafia and police and other kinda conspiracies everybody's talking about.' - Don't tease about this, B.T., I responded, suddenly realizing I was over wrought. This case is causing too much pain everywhere."

'I am not making fun of you, Jeffie. I feel your pain and understand. Everything would be simpler if Rodney King wasn't on the jury.' -But he is, I said.-

'I know,' B.T. replied. "And that ,not whether a jealous husband killed his wife and her visitor, is the problem."

## Appendix

### About Science.

#### The Violet Catastrophe.

In 1859, Gustav Robert Kirchhoff and Robert Wilhelm Bunsen pioneered in the development of spectroscopy. The first discovered that each element, when brought to incandescence, gave off certain characteristic frequencies of light; and that the vapor of that element, exposed to radiation from a source hotter than itself, absorbed just those frequencies it itself emitted.

There is the theoretical possibility, that a body could absorb, completely, all the frequencies of radiation that fall upon it and reflect none of it. That body will appear absolutely black. Kirchhoff pointed out that such a "black body" if heated to incandescence, would necessarily radiate all frequencies of radiation. This is known as "black body radiation." But, in reality, such a black body does not exist. However, Wilhelm Wien, found the way, to hypothetically, create its required conditions and he found that at any temperature, a wide spread of frequencies was indeed included, but the spread was not even. There was a peak in the middle and as the temperature increased the peak moved toward the higher frequencies. If the absolute temperature were doubled, the frequency at the peak would also double.

Lord Rayleigh worked out an equation which showed that a black body ought to radiate 1.3 per cent of its energy in the infrared, 1.3 percent in visible light and 97.4 per cent in the ultraviolet. But in practice, this did not happen. This prediction that every body that had energy to radiate ought to do it practically in ultraviolet and beyond was known as the "Violet Catastrophe." Wien introduced an equation that worked well for high frequencies but not for low frequencies.

This episode is so meaningful because it demonstrated that classical physics was unable to explain the behavior of electromagnetic radiations and induced Plank's Quantum theory as the beginning of modern physics.

## Appendix

### The “Twin Paradox”

This is a prediction of the Special Theory of Relativity, cast in the form of a story about the astronaut who leaves his twin brother on the Earth while he flies off at high speed for a long journey to the stars. On his return home he finds his twin is an old man while he, the astronaut, is still in his prime.

The astronaut’s clocks, atomic and biological, have registered fewer hours and years than the clocks on the Earth have done.

This situation is one the main examples among the many situations that generate perplexity and public controversy about relativity.

In England, Herbert Dingle, an astrophysicist and sometime president of the Royal Astronomical Society, put forward one counter-argument claiming that for the travelers point of view, it is the Earth that accelerates away and then back towards him, and there should be no difference in the calendars or ages when the twins are reunited. *But there is a difference between the two points of view.*

The Doppler Effect will produce a red shift when the high speed traveler moves away and a blue shift when he approaches his twin. The crucial point arrives when the traveler turns around and heads home. At once he will see transmissions from the Earth blueshifted and terrestrial clocks running fast. But if he is, for instance, ten light years from Earth when he turns, his stay-at-home twin cannot know that the ship has turned until ten years after the event, when the first signals arrive at the Earth showing that that the spacecraft has turned. Throughout those ten years the stay-at-home still sees his brother’s spaceship red shifted. The faster the ship is traveling the greater the difference in rates of the clocks and the more years the traveler will “save.”

In physics, such issues are not settled by argument but by experiment. And when experiment is done Einstein, as usual, turns out to be right.

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To check the twins paradox on Earth it is convenient to have objects with a natural lifespan, so that you can try prolonging their lives by high speed travel. Suitable objects come readily to hand in the sub-atomic world of the particle physicist. There, many particles are unstable. They have built-in obsolescence and break up after lifetimes fixed by nature. The most convenient particles for longevity experiments turn out to be "muons." These are heavy relatives of the electron. They decay into electrons after a typical lifespan (half-life) of two millionths of a second. The simplest procedure is to guide the muons around in a circle; the circular track also allows the survivors of one trip to go right off around again for another trip. A merry-go-round for muons has provided the most accurate test of the twin paradox yet attempted. Emilio Picasso and an international team of physicist assembled the necessary machinery and detectors at CERN (Conseil Européen pour la Recherche Nucléaire) near Geneva. They built the Muon Storage Ring to check a fundamental point in the theory of the electric force, but it was admirably suited also for the relativity experiment. Constrained by magnets, particles traveling at 99.94 per cent of the speed of light circulated in an orbit 46 feet in diameter. Twenty electron detectors around the ring detected the "deaths" of individual particles.

If its lifetime were unaffected by its high speed journeys, a typical particle would manage fourteen of fifteen return trips around the ring before its two microsecond life expired. In fact, the typical particle in the CERN experiment survived long enough to make more than 400 orbits in the ring. Its life was extended nearly thirty-fold.

Not only was the general sense of the twin paradox confirmed, but careful measurements bore out the Einsteinian calculation almost exactly. Within one part in 500.

Moreover, biological time matches atomic time.

Unstable particles "live" longer when they travel fast.

High speed travel could keep you young.

**The Bell Theorem, better named Bell's Inequality.**

To understand its meaning it will be advisable to go back in history. After Newton had established a deterministic view of the universe, Einstein introduced new concepts with his theory of relativity and provoked astonishment in the scientific world. Many things looked really weird. Since he stated that the speed of light was the greatest possible speed in the universe and it was invariable, it was necessary to admit that the value of time was not absolute and had to change with the velocity of the moving objects and magnetic fields, as well. We just had an example in the twin paradox. One of the fundamental issues of relativity is the principle of local causality, which means that distant events cannot instantaneously influence local objects without any mediation.

Later on, Niels Bohr and his followers introduced the Copenhagen interpretation of quantum mechanics, which created new situations twice as weird as relativity. Let's add here the words of D. Bohm and B. Hiley, "On the Intuitive Understanding of Non-Locality as Implied by Quantum Theory: 'It is generally acknowledged that the quantum theory has many strikingly novel features, including discreteness of energy and momentum, discrete jumps in quantum processes, wave-particle duality, barrier penetration, etc. However, there has been too little emphasis on what is, in our view, the most fundamentally different new feature of all, i.e. the intimate interconnection of different system that are not in spatial contact. This has been especially clearly revealed through the ...well known experiment of Einstein, Podolsky and Rosen.' " That work known by the misnomer "EPR paradox" (since there is no paradox) takes the initials of the last names of Albert Einstein, Boris Podolsky and Nathan Rosen and it was the last effort of Einstein to refute Quantum mechanics in the endless debate he carried on against Niels Bohr.

## Appendix

Heinz Pagels (1939-1988) Professor of Physics at Rockefeller University who was also president of the New York Academy of Science, died, tragically, in a mountaineering accident in Colorado. He wrote "The Cosmic Code: Quantum Physics as the Language of Nature," in which he dedicated a very important chapter to the Bell's Inequality as an answer to the EPR paradox. That chapter was reproduced by Jefferson Hane Weaver in *The World of Physics* to explain this interesting subject. Pagels, also wrote "The Dreams of Reason" directed, among other things, to the computer and the sciences of Complexity.

Heisenberg's Uncertainty Principle and the statement that the world must be actually observed to be certain are paramount in the Copenhagen interpretation of Quantum mechanics. So far, there is no logical flaw in the Copenhagen interpretation and no experiment exists that contradicts the predictions of the quantum theory and after much bickering, Einstein ceased to criticize the consistency of the interpretation of Copenhagen and instead he focused his attack on the issue of whether or not the quantum theory gave a complete description of reality. As any other physicist, he would never accept the denial of the principle of local causality. Which means that distant events cannot instantaneously influence local objects without any mediation.

John S. Bell, a theoretical physicist at CERN took the next step on the road of quantum reality in 1965. In his paper he did not appeal to the formalism of the quantum theory but directly to experiment. He proposed a real experiment not just a thought experiment and he demonstrated that the kind of incompleteness of quantum theory envisioned by EPR was not possible. There were only two physical interpretations of Bell's experiment, either the world was nonobjective and did not exist in a definite state, or it was nonlocal with instantaneous action-at-a-distance.

What an example of weirdness(! !)



## Appendix

Bell's paper addressed the question of hidden variables- the idea that somehow the usual quantum theory is incomplete and there exists a hypothetical sub-quantum theory which specifies additional physical information about the state of the world in the form of these new hidden variables. Such a subquantum theory would restore determinism and objectivity.

Bell wanted to see what the quantum world would be like if local hidden variable really existed. Assuming that any hidden variables are "local" is the assumption of local causality. Using this criterion Bell derived a mathematical formula, an inequality, which would be checked experimentally. The experiment has been done independently several times and Bell's inequality-along with its central assumption of local causality-was violated. *It seemed, the world was not locally causal.*

Before applying this inequality to the quantum world, Bell derived the inequality for a *purely classical visualizable experiment*. Later on, positronium atoms have been also used as a source of particles with the same results.

I do not believe that this is the right place to present these experiments in detail, since the common reader may have difficulties to grasp the technical aspects and the real important fact is the result obtained regarding the interpretation of quantum mechanics. However, as Pagels has pointed out, some popularizers of Bell's work when confronted with its conclusion have gone on to claim that telepathy is verified or the mystical notion that all parts of the universe are instantaneously interconnected is vindicated. Others assert that this implies communication faster than the speed of light. Which is rubbish. The quantum theory and Bell's inequality imply nothing of this kind. Individuals who make such claims have substituted a wish-fulfilling fantasy for understanding. Bohr would be the first to point out an alternative interpretation of the experimental violation of Bell's inequality.

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For instance, in order to conclude that in the experiment the photons were subject to nonlocal influences we have indulged in the fantasy that they exist in a definite state. Bohr would insist that if we can verify that the photons actually exist in a definite state of polarization without altering that state, then indeed we must conclude from Bell's experiment that we have real non local influences. *But it is not possible to verify the state of polarization of the photon without altering the requirement that both members of a pair of photons have identical polarization. In measuring the polarization we put it in a definite state, but this alters the initial conditions of the experiment.*

It is obvious that even if we accept the objectivity of the microworld, then, Bell's experiment does not imply actual nonlocal influences. It does imply that one can instantaneously change the cross-correlation of two random sequences of events on other sides of the galaxy. But the cross-correlation of two sets of widely separated events is not a local object and the information it may contain cannot be used to violate the principle of local causality.

## *Appendix*

### **The Gödel Theorem.**

In spite of its superficial plausibility, the formalist interpretation of mathematics received a severe blow in 1931. In that year the Princeton mathematician and logician Kurt Gödel, proved a sweeping theorem to the effect that mathematical statements existed for which no systematic procedure could determine whether they are either true or false.

Gödel's theorem springs from a constellation of paradoxes that surround the subject of self-reference.

Paul Davies, in *The Mind of God*, has explained the idea at the heart of Gödel's theorem with the help of a little story: In a faraway country a group of mathematicians who had never heard of Gödel became convinced that there does indeed exist a systematic procedure to determine infallibly the truth or falsity of every meaningful proposition, and they set out to demonstrate it. Their system can be operated by a person, or a group of people, or a machine, or a combination of any of these. Nobody was quite sure of what the mathematicians selected, because it was located in a large university building rather like a temple, and entry was forbidden to the general public. The system was called Tom.

To test Tom's abilities, all sorts of complicated logical and mathematical statements were presented to it and after due time for processing, back came the answer: true, true, false...

Tom's fame spread throughout the land and many people came to visit the laboratory and exercised greater and greater ingenuity in formulating ever more difficult problems in an attempt to stump Tom. But nobody could. Eventually the mathematicians persuaded the king to offer a prize to anyone who could defeat Tom.

One day a traveler from another country came to the university with an envelope and asked to challenge Tom for the prize.

## *Appendix*

Inside the envelope there was a piece of paper with a statement on it which we can give the name S ("S" for statement or "S" for stump) simple read: "Tom cannot prove this statement to be true."

Scarcely had a few seconds elapsed before Tom began a sort of convulsion. After half a minute a technician came running from the building with the news that Tom had been shot down due to technical problems.

What had happened?

Suppose Tom were to arrive at the conclusion that S was true. This means that the statement "Tom cannot prove this statement to be true" would have been falsified, because Tom would have just done it. But if S is falsified, S cannot be true. Thus if Tom answers "true" to S, Tom would have arrived at a false conclusion contradicting its infallibility. Hence Tom cannot answer "true."

We have therefore arrived at the conclusion that S is, in fact, true. But in arriving at this conclusion we have demonstrated that Tom cannot arrive at this conclusion.

This is the essence of Gödel's theorem: that there will always exist certain true statements that cannot be proved to be true.

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