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THE EVOLUTIONARY BASIS OF LOGOTHERAPY

A Dissertation Presented

By

Edward James Calabrese

Submitted to the Graduate School of the
University of Massachusetts in
partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

January 1974

Education

THE EVOLUTIONARY BASIS OF LOGOTHERAPY

A Dissertation Presented

By

Edward J. Calabrese

Approved as to Style and Content by

Richard Konicek (Chairman of Committee)

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January, 1974

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I would like to thank my dissertation committee consisting of Dick Konicek, Doug Forsyth and Mike Peters for all their contributions to both my own personal growth and the development of the dissertation.

I would like to thank John Hanson for his interest in trying to make me a better person and student. The numerous hours discussing evolutionary theory with Dr. Hanson are viewed as very high points in my graduate student days.

Thank you, Mary Varanka, for listening to my ideas, encouraging me onward and especially for editing chapter two.

PREFACE

This dissertation assumes that man is the product of a long term evolutionary process. Its theoretical foundations are entirely consistant with and dependent on the current widely held theory of neo-darwinism. Therefore, the basic assumptions which are accepted as a working model in any scientific inquiry of nature in general and to neo-darwinism in particular are also in effect here.

A particularly important assumption on which this dissertation rests is that the behavior of men and women reflect in part underlying biologically transmitted predispositions with their foundation in human evolutionary history. It is further assumed that these behavioral predispositions find their expressions in a broad range of cultural forms containing a common irreducible predetermined factor.

THE EVOLUTIONARY BASIS OF LOGOTHERAPY. (January, 1974)

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Directed by: Dr. Richard Konicek

The main goal of this dissertation is to provide the evolutionary basis of logotherapy. It is contended that the basic cause of much of the stated lack of significance or fulfillment (Frankl's existential vacuum) in modern western man is due to the strain of industrial-technological culture on the basic limitations of man's design imposed by the evolutionary process. And furthermore, that with a proper understanding of man's evolutionary design individuals will be better able to cope with the strains imposed by their industrial culture complex by seeking constructive outlets within the society to fulfill their basic design or in fact to attempt to modify in some way present systems to come more in conformity with man's basic design.

Realization of the main goal of the dissertation will be attempted by the consideration of the following topics as they relate to the overall goal of the dissertation: (1) the history of logotherapy including its origin, basic assumptions and critique of the basic assumptions, (2) the behavior of man as understood by evolutionary biology, (3) the integration of logotherapy within the evolutionary design, (5) the influence of evolutionary biology on the economic behavior of men and women, and (6) the implications of evolutionary biology for such human behavioral disciplines as anthropology, sociology, and education.

Each of the separate topics will be considered within a distinct chapter of

the dissertation. Therefore chapter two will consider the origin of logotherapy. This will involve a brief recapitulation of the life of Frankl, the originator of logotherapy, and the historical perspectives which played a strong role in the genesis of his thought. Furthermore, the basic tenets of logotherapy will be defined and explained with a detailed critique of Frankl's underlying assumptions. The chapter will conclude with a statement of the perspective through which this dissertation views logotherapy and how logotherapy can be strengthened by the evolutionary paradigm.

Chapter three will discuss the importance of establishing a unifying evolutionary perspective in order to understand human behavior. The life of modern agricultural and industrial man will be viewed in its proper evolutionary perspective which is a biological novelty that has added only negligibly to man's basic wiring.

Chapter four will integrate Frankl's concept of happiness and meaning with the evolutionary paradigm. This will be approached by investigating from an evolutionary perspective the relationship between the pursuit of meaning and its "unintended by-products" such as happiness, satisfaction and fulfillment. In addition, the origin of such emotions as products of natural selection will also be considered.

An attempt in chapter five will be made to create an appreciation of the selection or screening process which is the heart of biological adaptation (evolutionary mechanics). As an example of the integration of all components of the human animal working to produce a maximally efficient unit (remembering this integration to be highly selected for) the interaction of both the physiological

and psychological components of the female reproductive system will be considered.

Chapter six will present an evolutionary perspective of how modern industrial societies fail or succeed in fulfilling man's basic design causing either a lack of fulfillment or happiness. The second part of chapter six will examine the role of the female in the economy and how evolutionary mechanics has designed certain behavioral predispositions which affect her type of career orientation and interactions with males in the economic world.

Chapter seven will consider the implications and limitations of evolutionary theory for areas of behavioral sciences including anthropology, sociology and education.

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Chapter I

The Need to Establish Evolutionary Biology As The Fundamental Basis of Logotherapy

Within recent years there has been a startling growth in the awareness of the frailty of man's existence as a species. Real threats of nuclear warfare[1,2,3], over-population[4,5], depletion of natural resources[6,7], water pollution[8,9], extreme population density[10,11], and numerous other sources of social unrest endanger the life of man, the individual, as well as man, the species.

1. Jerome B. Weisner and Herbert F. York, "National Security and the Nuclear-Test Ban", in 39 Steps to Biology: Readings from Scientific American, Garrett Hardin, Compiler, W.H. Freeman and Co., San Francisco, California, 1968, pp. 315-322.

2. Arther I. Waskow, "The Sheltered Society," in 39 Steps to Biology: Readings from Scientific American, Garrett Hardin, Compiler, W.H. Freeman and Co., San Francisco, California, 1968, 323-328.

3. Samuel Glasstone (ed.), "The Effects of Nuclear Weapons," United States Atomic Energy Commission, April, 1962.

4. Paul Ehrlich, The Population Bomb, New York:Ballantine, 1968.

5. William Paddock, Famine Nineteen Seventy-Five, Boston:Little, Brown Pub., 1968.

6. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers and William W. B hrens III, The Limits to Growth, New York:Universe Books, 1972.

7. Paul Ehrlich and Anne Ehrlich, Population, Resources, Environmental: Issues in Human Ecology, W.H. Freeman and Co., San Francisco, 1970.

8. Rachael Carson, Silent Spring, New York:Crest, 1969.

9. Wesley Marx, "The Tainted Sea," from the Frail Ocean published in the Environmental Handbook, ed. by Garrett de Bell, Ballantine Books, Inc. New York, 1970, pp. 51-65.

10. John B. Calhoun, "Population Density and Social Pathology," Scientific American, 1962, Volume 206(2):139.

Rene Dubos has strongly asserted that the proper maintenance of the physical environment in which man lives is vital for not only his physical but also his emotional well-being. Human beings have demonstrated a fantastic ability to develop some types of tolerance to situations very different from those under which he evolved. This, according to Dubos, has led to the belief that, through social and technological advances, man can endlessly alter his ways of life without incurring any risk. Unfortunately, the facts do not support this belief. Man can adapt biologically to his industrial technological environment but only in as far as the machinery of adaptation are potentially present in his genetic make-up. Because of this it is a biological "certainty" that man cannot acquire successful adaptation to environmental "insults" that he has had absolutely no experience within his evolutionary past, for example, the large shrill noises of modern equipment and the exhausts of motored vehicles. The limits that must be placed on social and technological developments are fixed not by scientific knowledge or practical know-how, but by the biological and mental nature of man.[12]

Numerous recent examples of human experiences certainly show that man has immense adaptability. For instance, people of all races have survived the terror and dehumanization of modern warfare and prison camps.

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11. V.C. Wynne-Edwards, "Population Control in Animals," in 39 Steps to Biology: Readings from Scientific American, Garrett Hardin, Compiler, W.H. Freeman and Co., San Francisco, California, 1968, pp. 262-268.

12. Rene Dubos, So Human an Animal, New York:Charles Scribner's Son, 1970.

Populations still rise even amidst the incredible misery prevailing in many underprivileged urban areas. Even though man has survived these conditions, continual exposure to such biological stresses quite often ends up in biological and mental modifications that point to difficulties for the future. As an example, people born and raised in the industrial regions of northern Europe have survived and increased in numbers despite ever present exposure to smog which is made worse by the Atlantic climate. However, the long-range results of this so-called adaptation is a very high incidence of pulmonary disease. Various areas in the United States have replicated these European studies.[13]

Dubos further implies that social regimentation and standardization are compatible with survival and multiplication of biological man, but not with the quality of human life. Gradually, man becomes tolerant of worse and worse environmental conditions without having the insight that the expressions of this tolerance will emerge before long as debilitating ailments, and what is frightening in a form of life that will retain little of true humanness.[14]

Experiments with animals and observations of man strongly support the concept that environmental influences exert their most influential and persisting effects when they impinge on the early stages of biological and mental development of the organism. As a result, a large number of today's children will have been exposed from childhood onward to situations that will possibly evoke maladaptive responses in the long run - not just organic diseases, but

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13. Op. cit.

14. Op. cit.

also, and probably more significantly, distortions of mental and emotional qualities.[15]

Numerous leading universities have started to grope with these immensely important problems. It is being recognized more and more that the problems of man's future cannot be solved by different disciplines working separately and employing their own highly elaborate form of tunnel vision. Numerous attempts have been made to overcome the limited vision of solitary disciplines by the institution of interdisciplinary studies. Unifying themes such as Education for Global Survival (at the University of Massachusetts), the Institute of Man (at Duquesne University) and Man and his Environment (at the University of Waterloo) have all responded to try to give a unifying approach to gaining a basic understanding of man's behavior.

It is most difficult to bring together people from different and often conflicting schools of thought with each proclaiming their own "absolute" or "relativistic" truth depending on the case. Often it seems very much like the blind leading the blind as they remain encased in their straight-jacketed paradigms of life.

However, as evidenced by the attempts in leading universities to institute programs of interdisciplinary studies concerning man and his relationship with the world, there is the indication that many now feel that we must come together and search for a unifying central theme which will unite rather than separate the various disciplines. In order to achieve significant depth of understanding concerning man it is necessary to follow a definite series of

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15. Op. cit.

procedural steps. Firstly, empirical knowledge of man is important. For example, what are man's biological characteristics with reference to a static structural description. Secondly, how does man function (physiological/mechanical understanding). Thirdly, how does man interact with his external environment (ecological understanding). Fourth, what is the explanation of the origin of the present design (evolutionary understanding) and fifth, how can the design be improved. Each previous level of depth of understanding is necessary before a more advanced level of understanding can be achieved.[16]

Achievement of indepth understanding of man requires an understanding of what man's basic design is: once that is known, the next step is how can we improve it. Achievement of this goal through the sequential series of steps outlined above can unite the diverse disciplines with a common thread.

When one speaks of the understanding of the origin of man's design it refers to why was man designed as he is. Under what environmental conditions did he evolve which caused certain characteristics to be selected for and therefore to be included within the basic design of man? In essence, therefore, the most fundamental theme in understanding human behavior is knowledge of the dynamics of man's evolution.

Extremely strong inroads have been made recently in the biological and social sciences in establishing the fundamental basis of human behavior. Investigations of animal behavior reported in the writings of Tinbergen[17,18], Lorenz[19], Hess[20], Fox[21], Tiger[22,23,24], Ardrey[25,26,27], Morris[28,29,30],

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16. John Hanson, "Hanson's Universal System of Progress." unpublished.

17. Nino Tinbergen, The Study of Instinct, Oxford: University Press, 1951.

and others have shown that nearly every behavior exhibited by man seems to have its origin in one or more of our genetic ancestors.

Human behaviors such as patriotism, altruism, hypocrisy, love, territoriality, rebellion, aggression, and curiosity are not exclusively human traits but they find their origin in the ancestors of man.

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18. Nino Tinbergen, "On War and Peace in Animals and Man", Science, 1968, Volume 160: 1411-1418.

19. Lorenz, K., On Aggression. London, Methuen, 1966.

20. E. H. Hess, Ethology: "An Approach Toward the Complete Analysis of Behavior," Brown, R. (ed.), New Directions in Psychology, New York: Holt, Rhinehart and Winston, 1962.

21. Robin Fox, "The Evolution of Human Sexual Behavior," The New York Times Magazine, 1968 (March 24), pp. 32-33, 79-97.

22. Lionel Tiger, Men in Groups, New York: Random House, 1969.

23. Lionel Tiger, "Dominance in Human Societies," Annual Rev. of Ecology and Systematics, 1970, Volume 1:1-10.

24. Lionel Tiger and Robin Fox, The Imperial Animal, New York: Delta Publishing Co., 1971.

25. Robert Ardrey, African Genesis, London: Collins, 1961.

26. Robert Ardrey, The Territorial Imperative, New York:Atheneum, 1966.

27. Robert Ardrey, The Social Contract, New York:Atheneum, 1970.

28. Desmond Morris, The Naked Ape, London:Constable, 1967.

29. Desmond Morris, The Human Zoo, New York:McGraw-Hill, 1970.

30. Desmond Morris, Intimate Behavior, New York:Bantam, 1973.

Over 100 years ago, Charles Darwin's The Descent of Man[31] and the Expression of Emotions in Men and Animals[32] pointed out that man is the product of evolution involving natural selection. The central questions of 'What is man?' and 'Why does man behave as he does?' are probably the most profound that man can ask and for that reason they have been of central importance to nearly every system of philosophy and theology. The distinguished biologist George Gaylord Simpson[33] dramatically stated in his article "The Biological Nature of Man" that before publication of Darwin's works all attempts to answer the question of 'what is man?' are worthless since no previous answer had a solid objective foundation until it was understood that man is the product of evolution.

According to Simpson, it is the biological dimension of man both in his evolutionary past and in the ontonological present that provide us with our only definite point of departure. He is not implying that the biological investigations of man can ever produce a completely satisfactory answer to the profound question of 'what is man?' The other, older attempts through approaches via metaphysics, theology, art, and other non-scientific fields can still contribute. However, if they preclude the evolutionary origin of man as inherent in their understanding of man then they will just join the previously mentioned groups of the blind leading

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31. Charles Darwin, The Descent of Man, London; Murrary, 1871.

32. Charles Darwin, The Expression of Emotions in Man and Animals, N.Y.,; Appleton-Century-Crafts, 1873.

33. George Gaylord Simpson "The Biological Nature of Man," Science, 1966, Volume 152: 472-478.

the blind.[34]

Modern man, living in the highly developed western industrial-technological complex within large and crowded cities, represents a biological novelty. This is a new adventure for man and one very different from that in which he evolved. A quick glimpse over the past two million years of human history will demonstrate that for 99 percent of his past man was not a farmer or a wage earner in a mass production factory but a member of highly successful and marvelously adapted social hunting groups. The adaptation for such a niche meant the development and selection of psychological needs and fulfillments along with the necessary physical traits. Essentially, we have in man an organism which has been designed through evolution to be a social organism living in groups of usually no more than 50 members which depended upon successful group hunting to provide food for the life of the group. That such groups depended on intimate personal relationships, cooperation, leadership and many other types of behavior can hardly be doubted. During the last 5000 years of man's existence or less than 0.5 percent of his primate evolution stemming from the agricultural revolution to the present industrial revolution of the last 150 years[35] we have seen the basic design of man subjected to entirely new economic, political and other social factors for which in many ways he seems not to be designed.

According to numerous authors including Frankl[36], Fabry[37], Dubos, Fox,

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34. Op. cit.

35. Lionel Tiger and Robin Fox, The Imperial Animal. pp. 13-15.

36. Viktor E. Frankl, Man's Search for Meaning, New York: Simon & Schuster Inc., 1963.

Tiger and others many of these relatively new economic, political and social developments have adversely effected man's source of emotional well-being. Frankl maintains that the psychiatrist today is faced more often with a special type of neurosis which he calls the "existential vacuum." By existential vacuum is meant the experience of a total lack of meaning to one's life that would help make existence worthwhile.

The question of the lack of meaning, significance, happiness or fulfillment in the lives of many modern western men and women has been recently emphasized by numerous investigators especially the School of Logotherapy which was originated by Viktor Frankl. Those people who are despondent about life and of their lack of fulfillment come from apparently all walks of life, male and female, young, middle age and old.

Logotherapy has been defined by Frankl as therapy by meaning. It is founded on certain basic assumptions concerning the nature of man and his place in the universe. To Frankl the key to man's existence is the search for meaning. The pursuit of meaning is the essence of one's humanness. If he represses it, man invites himself only along the road to unhappiness and lack of fulfillment. However, if he devotes his life to this search his life will be filled, not just with meaning but with the by-products of a meaningful existence - and among these are happiness, security, peace of mind, mental stability and such currently popular life goals as self-actualization and peak experiences. All these, according to Frankl, will escape man if he consciously sets out to gain them, while they will flow naturally to him as the unintended products of his pursuit of meaning.[37]

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37. J. Fabry, p. 14.

The development of logotherapy is, in large measure, the life of Viktor Frankl. Even as a youngster he started to recognize the importance of meaning and values to an individual's life. As a result of several youthful experiences he became convinced that nonmeaning was the basis of despondence and despair. Although Frankl had formulated many of his ideas on logotherapy prior to the second World War he put his logotherapy to an intense personal test when he became a prisoner in German concentration camps for more than two years. Frankl and his logotherapy emerged successfully after one of the most trying challenges any person or philosophy could face.[38]

The widespread interest in logotherapy can be seen by the fact that Frankl's book, Man's Search of Meaning, following a rather unnoticed entrance on the American scene in 1959, had sold nearly 350,000 copies by 1967 and nearly a million at present. Frankl's influence has reached Trappist monks in the southern United States in their daily readings as well as being the subject of an article in the San Quentin News which incidently won first place in a national penal press journalism contest.[39] His work and its implications have been the subject of theses and dissertations in psychology, theology and education.[40-44] The internationally famous Norman Vincent

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38. Op. cit., p. 15-17.

39. Op. cit., p. 17.

40. Don T. Muilenberg, Meaning in Life: Its Significance in Psychotherapy, Ph.D. Dissertation, Univ. of Missouri, 1968.

Peale predicted that "logotherapy will be recognized as the greatest advance made in a century in the old art of treating and curing human souls."[45]

However, more reservedly, the reviewer in the Times Literary Supplement speculated that Frankl may belong "to a small group of human beings who are themselves so convinced of the meaning and value of existence that they can inspire others with their belief without being able to tell how and why."[46]

In agreement with the reviewer in the Times Literary Supplement this paper contends that the fundamental weakness of logotherapy is the lack of any sound theoretical basis upon which it rests. It has achieved success with numerous patients without really knowing why. Its approach is very arbitrary, empirical and piecemealish. It talks of the importance

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41. Elbert Whaley Jones, Nietzsche and Existential-Analysis, Master of Arts Degree Thesis, New York University, 1967.

42. Annemarie von Forstmeyer, The Will to Meaning as a Prerequisite for Self-Actualization, Master of Arts Degree Thesis, California Western University, 1968.

43. Reuven P. Bulka, An Analysis of the Viability of Frankl's Logotherapeutic System as a Secular Theory, Master of Arts Thesis, University of Ottawa, 1969.

44. James Lester Buick, The Relevance of Viktor Frankl's Will to Meaning for Preaching to Juvenile Delinquents, Master of Theology Degree Thesis, Southern Baptist Theological Seminary, 1966.

45. Arthur M. Kline, "We are Born to Believe", Woman's Home Companion, April, 1954.

46. "Being and Meaning," Times Literary Supplement (London), October 29, 1964.

of meaning, happiness and fulfillment yet without knowing why such qualities have been designed into the human organism. Thankfully, it asks the right questions; regretfully, it can only grope for answers.

The main goal of this dissertation is to provide the evolutionary basis of logotherapy. This will finally place logotherapy on a sound theoretical foundation. One can only imagine the enhanced success of logotherapy (which is already very considerable) when it graduates from the random, groping, chance-filled counseling therapy that it is and becomes firmly established with a unifying theoretical basis (the evolutionary paradigm) from which it can direct its therapy.

It is the contention of this dissertation that the basic cause of much of the stated lack of significance or fulfillment (Frankl's existential vacuum) in modern western man is due to the strain of industrial-technological culture on the basic limitations of man's design imposed by the evolutionary process. And furthermore, that with a proper understanding of man's evolutionary design individuals will be better able to cope with the strains imposed by their industrial culture complex by seeking constructive outlets within the society to fulfill their basic design or in fact to attempt to modify in some way present systems to come more in conformity with man's basic design.

Realization of the main goal of the dissertation will be attempted by the consideration of the following topics as they relate to the overall goal of the dissertation: (1) the history of logotherapy including its origin, basic

assumptions and critique of the basic assumptions, (2) the behavior of man as understood by evolutionary biology, (3) the integration of logotherapy within the evolutionary perspective, (4) the establishment of the precision inherent within evolutionary design, (5) the influence of evolutionary biology on the economic behavior of men and women, and (6) the implications of evolutionary biology for such human behavioral disciplines as anthropology, sociology, and education.

Each of the separate topics will be considered within a distinct chapter of the dissertation. Therefore chapter two will consider the origin of logotherapy. This will involve a brief recapitulation of the life of Frankl, the originator of logotherapy, and the historical perspectives which played a strong role in the genesis of his thought. Furthermore, the basic tenets of logotherapy will be defined and explained with a detailed critique of Frankl's underlying assumptions. The chapter will conclude with a statement of the perspective through which this dissertation views logotherapy and how logotherapy can be strengthened by the evolutionary paradigm.

Chapter three will discuss the importance of establishing a unifying evolutionary perspective in order to understand human behavior. The life of modern agricultural and industrial man will be viewed in its proper evolutionary perspective which is a biological novelty that has added only negligibly to man's basic wiring.

Chapter four will integrate Frankl's concept of happiness and meaning with the evolutionary paradigm. This will be approached by investigating

from an evolutionary perspective the relationship between the pursuit of meaning and its "unintended by-products" such as happiness, satisfaction and fulfillment. In addition, the origin of such emotions as products of natural selection will also be considered.

An attempt in chapter five will be made to create an appreciation of the incredible selection or screening process which is the heart of biological adaptation (evolutionary mechanics). As an example of the integration of all components of the human animal working to produce a maximally efficient unit (remembering this integration to be highly selected for) the interaction of both the physiological and psychological components of the female reproductive system will be considered.

Chapter six will present an evolutionary perspective of how modern industrial societies fail or succeed in fulfilling man's basic design causing either a lack of fulfillment or happiness. The second part of chapter six will examine the role of the female in the economy and how evolutionary mechanics has designed certain behavioral predispositions which affect her type of career orientation and interactions with males in the economic world.

Chapter seven will consider the implications and limitations of evolutionary theory for areas of behavioral sciences including anthropology, sociology and education.

Chapter 2

The Origins of Logotherapy

Logotherapy is a counseling theory which centers on the meaning of human existence as well as on man's search for such a meaning. According to the originator of logotherapy, Viktor Frankl, the most important motivational force in man is the striving to find a meaning in one's life. The application of the principles of logotherapy to the field of counseling have generated considerable interest as evidenced by the numerous books, articles, dissertations and symposia devoted to its study. In order to gain a clear understanding of the basic tenets of logotherapy it is necessary to first view how and why it originated.

Today, the name of Viktor Frankl and the term logotherapy are inseperable; however, the spawning of the ideas of logotherapy reach way back to some rather vague beginnings in the childhood of Frankl. Viktor Frankl was born in 1905 in Vienna and as a child was quite concerned with questions most young adults have faced, such as 'What is life?' or 'Am I just a highly efficient network of biochemical reactions?' From his youth he recognized a dimension of life that seemed to transcend the strictly material realm. One of his earliest recollections was of the feeling of peace and security he experienced upon awakening from sleep and seeing his father calmly watching over him. As a child, he was also quite moved by the fact that he, just like all others, would someday die. It was likewise recalled that he often surprised his teachers by introducing questions much beyond the scope of his age. For example, in a science

class at 14 years of age, his teacher explained that life, in the final analysis, was nothing but an oxidative process. Viktor shocked his whole class by quickly rising and shouting, "If that is so, then what meaning does life have?" Later, when a fellow student from his secondary school was found the victim of suicide with a book of Friedrich Nietzsche's nihilistic writings in hand, Frankl clearly recognized the close relationship between philosophical concepts and life. This experience confirmed his opposition to nihilism, the belief in nonmeaning, which he became convinced was the root of despair and cruelty.[1]

Even before he had finished high school, Frankl had established a scientific correspondence with Freud which led to the publication of one of Frankl's papers in Freud's International Journal of Psychoanalysis. However, as a young medical student be became quite discontented with the narrowness of the psychiatric orientation around him. While acknowledging some of the major achievements of Freud into the nature of man and his diseases, Frankl felt that much of Freud's thinking had become too rigid. Frankl decided that what was needed was an understanding of man in his totality, so he redirected his career in psychiatry by introducing the concepts of meaning and value into psychiatric thought.[2]

Following the completion of his M.D. degree in 1930, he worked at the neuropsychiatric clinic at the University of Vienna. Besides his work at the university, Frankl founded advisory centers for distressed young people. Here the basic tenets of logotherapy were crystalized:

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1. J. Fabry, The Pursuit of Meaning, pp. 9-10.

2. Op. cit., p. 10.

> that all reality has meaning (logos) and that life never ceases to have meaning for anyone: that meaning is very specific and changes from person to person and, for each person, from moment to moment: that each person is unique and each life contains a series of unique assignments which have to be discovered and responded to: that it is the search of one's specific assignments, and the response to them, that provide meaning: and that happiness, contentment, peace of mind are mere side products in that search.[3]

Numerous patients in these youth centers were quite despondent, because they weren't able to find work in those depression times. Frankl found that providing them with a job to fulfill, e.g., the organization and running of youth meetings, would help cut down their despair even though they weren't paid for their work. Despair was viewed as suffering behind which the sufferer could see no meaning. Furthermore, meaning can be discovered in a significantly broader range than the sufferer realizes, and the task of the therapist, according to Frankl, is to broaden the patient's perspective and to expose him to the full range of meaning possibilities. A large percentage of those contemplating suicide who entered youth centers viewed their lives in only one direction: the unemployed in finding work, the unmarried woman in finding a husband. Finally, there were those who saw no meaning anywhere: they felt quite empty and were very overwhelmed by such emptiness. The examination and study of this condition of inner emptiness, the "existential vacuum," became the central orientation of Frankl's life during the depression years. He aided his patients to find meaning by rising above their narrow, self-centered interests.

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3. Ibid., p. 10.

Meaning could be found in accepting the unavoidable and by even turning it into a challenge; the life of Helen Keller underlines this view.[4]

World War II was to provide the fiercest personal test for the theory of logotherapy, for Frankl was to spend two and a half years in German concentration camps as a prisoner of war. His life in these camps did much to finally confirm the theories that he had previously developed. When the Nazis captured Frankl they took the manuscript of his explanations of logotherapy. He faced the unpleasant prospect that neither he nor his work would ever survive. He was only able to avoid despair by asking: does the meaning of my life actually depend on whether this manuscript gets published? He then turned to other possible meanings, most of them immediate: initially, just to survive to see his wife, family, mother and father again and to help his fellow inmates. Even though he was forced to perform hard labor up to eighteen hours a day and reduced at one point to only eighty pounds, Frankl somehow was able to practice his profession. He organized secret discussion groups on mental health and got other prisoners to talk of past achievements and future tasks waiting to be accomplished.[5]

Frankl's life in the various prison camps renewed and strengthened his belief in the uniqueness of the individual who could retain his humanness despite the most trying circumstances. While some inmates became

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4. Ibid., pp. 10-11.

5. V. Frankl, Man's Search For Meaning: an introduction to logotherapy.

as "animals" fighting for survival, a few reached near saintliness by aiding their fellow prisoners. Their humanness underlined Frankl's belief in a dimension existing within each person in which he not only is, but still decides what he will become.

Frankl summarized the lessons of his prison camp experiences as follows:

> Even when everything that he "has" is stripped from man- family, friends, influence, status, possessions- no one can take from him the freedom to make decisions, simply because his freedom is not something that he "has" but something he "is". To this dimension of freedom man must turn in his existential despair, and to this the logo-therapist must direct the patients attention.[6]

The post war years were very creative and rewarding for Frankl. Within a few years, he had fourteen books published and also found time to return to the University of Vienna to receive his second doctor's degree, a Ph.D. in existential philosophy. He later founded and became president of the Austrian Medical Society of Psychotherapy and was awarded the Austrian State Prize for Public Education. He has lectured all over the world including more than twenty tours across the United States and he has been a visiting professor at the Harvard University Summer School and the Southern Methodist University Summer Session. Presently, he is the chairman of the Department of Neurology at the Politilinik Hospital and a teacher at the University of Vienna.[7]

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6. J. Fabry, p. 14.

7. Op. cit., p. 15.

The Basic Assumptions:

As all therapy, logotherapy is based on certain assumptions about the nature of man and his place in the universe. Logotherapy assumes that man possesses an uniquely human dimension besides his physical and psychological dimensions and that all three aspects must be considered if he is to be completely understood. This human dimension allows man to reach out beyond himself and make his hopes and ideals part of his reality; his life has meaning under all, even the most terrible situations; and he has a deeply engrained conscience that can aid him in finding specific meanings of his life. Logotherapy additionally assumes that human beings primarily seek not pleasure, but life tasks, and that the deepest pleasure derives from completing these tasks. It assumes also that each person is unique because he has his own life and destiny to fulfill and that no moment of life is repeatable. Logotherapy also assumes that man is free; recognizing obvious limitations, to make choices regarding his activities, experiences, attitudes, and that his freedom permits him to modify himself - to decide not just the type of person he is, but also the type of person he is going to become. Logotherapy demands that man must use his freedom with social responsibility. Finally, logotherapy asserts that man's discovery of the meanings of his life is aided by certain values and tradition which are passed on from generation to generation.

The first of these basic assumptions - that man has a specifically

human dimension shared by no other creature was, according to Frankl, generally accepted until the recent thrust into prominence of scientific thinking which has tended to view man as only a machine, a puppet whose strings are pulled by biological and psychological forces over which man has no control. In Homo Patiens, Frankl wrote that "if we consider man merely as a machine ruled by conditional reflexes, then anthropology is degraded to an annex of zoology, and the ontology of man becomes the doctrine of certain animals whose ability to walk on their hind legs has gone to their heads." A man, Frankl further contends, can be programmed; but, he alone has the freedom to resist such programming. And, this freedom derives from neither his body nor his psyche, but from his third dimension called the noetic.[9]

Frankl employs the term noetic for only that dimension in man which is exclusively human, and any religious association is misleading. The meaning of noetic is best understood in a simile by Frankl: "An airplane does not cease to be an airplane when it taxis on the ground. But its true nature as an airplane becomes apparent only when it is airborne." Likewise, a man is a human being even when he acts on the merely psychophysical plane; however, he demonstrates his essential humanness only when he lifts himself into the noetic dimension. This is the dimension of the uniquely human phenomena: such as love (not mere sex), conscience (not mere superego), meanings found and fulfilled (not mere propelling

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9. Ibid., p. 19.

drives or biological needs to be satisfied). Animals, also have bodies, drives, and needs; but only man has noos. Noos is not acquired, nor is it a product or a result of something else; it is man's central essence, his self, what Christians have called "soul", Hindus "at man", and existentialists the I in an I-Thou relationship. It is what makes each of us a unique person.[10]

It is vital, however, to understand that logotherapy does not view man as composed of body, mind, and spirit in terms of parts. Man is considered as a unity; and to emphasize this unity, Frankl introduced the concept of dimensions. Man is contained within the dimensions of his body, driven in the dimensions of his mind; but in the dimension of his noos, he experiences freedom. Here, he takes over control of his existence and directs its course; in his noetic dimension man decides what type of individual he is and will be.

If this noetic dimension is ignored, we get a picture not of a full man, but of a distortion: an automaton of reflexes, a helpless victim of reactions and instincts, a composite of drives, heredity, and environment. We see a projection of man and not the three-dimensional man. Frankl has employed a simile of geometric bodies to illustrate this point. While looking at a circle in a two-dimensional plane, one can't say whether it is a projection of a sphere, cylinder, or cone. To know the correct nature of the geometrical structure, it is necessary to consider all three dimensions. Likewise, to understand a person in his totality, all three dimensions-

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10. Ibid., p. 20.

the physical, psychological and the noetic- must be known. If we look at an individual, for instance, only in the psychological dimension, we may view a schizophrenic having hallucinations and hearing voices. At the same time in the higher realm, the individual may have achieved a great historical accomplishment. For an historian, Joan of Arc accomplished a major historical achievement; for the theologian, she is saint; but, in the framework of only the psychologist, she was a schizophrenic.[11]

The chances of such reduction have never been as threatening to man as they are today. The biological sciences have demonstrated that man is certainly programmed by his genetic code. The social sciences proclaim that man is the product of social and economic forces which make him like a pawn in a chess match. And psychology finally informs man that he is controlled by drives and instincts and various conditioning processes which control his behavior. However, to Frankl, man is not a biologically determined being as he was to Darwin nor a sociologically determined being as he was to Freud. Frankl sees man as a being who, while partially determined in all these ways, still retains a dimension of freedom that is not controlled, but is free to act.

According to Frankl, the idea of the noetic dimension aids man to understand and improve himself and especially aids the therapist to understand and improve mental health. The role of the therapist is to reach this human dimension in the patient, because there lies the center of his humanity; and it is the only aspect of the patient that never can become sick. Frankl

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11. Ibid., p. 21.

asserts that man's body and psyche may become ill, but not his noose. The first psychiatric credo of logotherapy therefore is:[13] the belief that the noetic person exists even behind the curtain of the symptoms of a psychotic sickness. If this were not the case, it would not be of value to fix the psychophysical organism. If the doctor can only perceive the biochemical aspect of the patient's makeup and not the noetic person behind it, the physician would devolve into "just" a medical mechanic and presumably admit that he views man as nothing but a human machine.

In logotherapy, however, the doctor receives aids from the patient's noetic center, even if it is encumbered by his psychophysical symptoms. He tries to release the defiant power of the human spirit to rebel against what appears to be the all-powerful forces of the mind and body. Thus, the second psychiatric credo of logotherapy is:[14] the belief that not only the noetic aspect of the person stays well even if the psychophysical dimensions have become ill, but that humans have the power to rise above the limitations of the psychophysical. The person often cannot correct the physical condition, but he can change his attitude toward it. Every man can resolve conflicts of conscience and value clashes by himself. The logotherapist function is only to aid him in some of these clashes convincing him that he is not the helpless victim of his home, surroundings, and inner drives; but that he can take a positive position and improve conditions.

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13. Ibid., p. 25.

14. Ibid., p. 25.

Thus, logotherapy tries to put into a contemporary language what religious teachers and philosophers have said in numerous ways: Man reaches out. He is a being in quest of goals. Man has developed a large number of beliefs about himself and the world which have given him purpose, meaning, security, happiness, and peace of mind. But, in every age numerous beliefs become modified, because our knowledge about ourselves and the universe are dynamically expanding. Whenever the new advances out distance man's traditional beliefs, periods of doubt and despair often arise. Such times of crisis are overcome when reality is honestly encountered, the old ways evaluated, the obsolete discarded, and new truths discovered in order to redirect man's beliefs to new harbors of security and understanding more in conformity with the present knowledge.[15]

Today, according to Frankl, we are living in such a time of crisis. Man's knowledge about his nature and his world are in rapid change. He is still experiencing a "Copernican-like switch" from the belief that he is the center of the universe to the realization that he is only a small part of the periphery. It took centuries for man to accept the Copernican revolution, but other shocks to our anthropomorphism have closely followed from the works of Galileo, Newton, Darwin, Freud, and Einstein. What we know about the world has been significantly altered within just one generation. Scientific man is still likely to accept many things, not by faith but by scrutiny.

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15. Ibid., p. 34.

We seem less able to accept "prefab truths" that come from ancient books and ancient philosophers. Modern man is searching for truths that can be researched in repeatable experimentation. What this does to religion, which is based on unrepeatable personal experiences, is still to be discovered. The thrust of scientific method leads us to disregard phenomena that cannot be measured, but are subject to faith. Although this seems to imperil the future of religion, Frankl asserts that science, like religion, has its most basic tenets founded on assumptions which are also unproveable. Just the concept of inductive reasoning, on which scientific method is derived, leads only to relative, but not absolute certainty. Scientists must also recognize the "faith" that they must have in believing that their senses reveal objective reality. Frankl's logotherapy is based on the further assumption that individuals, even in our era of doubt and nonfaith, still must find bases for insight, courage and decision making and that ancient truths must be evaluated in light of current views of the physical sciences and mental health.[16]

Thus, logotherapy pictures man as one whose life consists of a string of situations, each having a specific meaning for him, and only him. His fulfillment and happiness depend upon finding, to the utmost of his abilities, the meaning of each situation of his life. Finally, all meaning, according to logotherapy, is in the realm of three general areas: in activities, personal experiences, and attitudes.[17] Activities can provide an indiv-

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16. Ibid., p. 35-36.

17. Ibid., p. 40.

idual meaning in numerous ways- through his job, his hobbies, and the deeds he does for the sake of others. The "beloved" work is meaning fulfilling if it is performed for the sake of the work itself, its effect on the worker, and the people for whom he cares. According to Frankl, fewer and fewer jobs now provide the holder with meaningful activities; they do not challenge the worker as a human being, but only permit him the opportunity to function as part of the machinery. Ultimately, what matters most is not the kind of work, but the motivation.[18]

The second area in which, according to Frankl, man can realize meaning is the area of experiences such as beauty, truth or love. Different from activities, where meaning is found by active participation, experiences provide man with meaning by receiving. The greatest of the personal experiences is that of mature love which is to know a single human being in all his uniqueness. It is by love that one presents man with a gift (his uniqueness) that he would otherwise have to gain by effort.[19]

While it is quite easily seen how meaning can be found in activities and experience, Frankl contends that the deepest meaning can be found in attitudes. Realizing meaning in attitudes becomes significant especially when one is facing unavoidable suffering and death. When a person encounters a difficult situation which cannot be changed, he can find meaning in facing it bravely and with dignity, providing an example to other people

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18. Ibid., p. 40.

19. Ibid., p. 42.

in similar predicaments by turning the misfortune into an ultimate achievement; setting an example, helping others, being an inspiration, are very crucial issues in the practice of logotherapy. The functioning of the Alcoholics Anonymous is founded on the concept of providing examples and inspiration to others.[20]

Thus, Frankl asserts that man's attitudes, more so than his activities and experiences, allow him the chance to experience meaning through creative activity and personal experience. It is by our attitudes, when confronting unavoidable suffering, that we show our belief in "ultimate meaning" and exist on the highest possible plane. It is no great accomplishment to work successfully and love happily, but to see meaning in the face of suffering is an achievement; however, Frankl feels that such an achievement may only be possible if we have a trust that ultimate meaning exists in spite of all evidence to the contrary at the human level.[21]

This idea of ultimate meaning has caused Frankl to be labeled with the accusation of "sneaking in religion by the back door". If by religion we are talking about a belief in ultimate meaning located in a dimension beyond man, then the accusation probably would be upheld. The belief in something greater than man has deep roots in both man and history and has been preached not only by the religious teachers but also by atheistic philosophers. Frankl has reported that many agnostics on their death beds

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20. Ibid., p. 44.

21. Ibid., p. 49.

showed a strange tranquility, which he said could not be explained in terms of their agnostics views, but only by a belief in ultimate meaning. Ultimate meaning is an axiom which cannot be proved, but must be assumed; it is a belief in an ordered world despite the human suffering, insecurity, and disorder we experience.[23]

Critique of Frankl's Basic Assumptions

Although Frankl may be the first to stand up and to defend the thesis that the process of biological evolution has and is still, in fact, occurring deep down inside his psyche he hasn't accepted it emotionally. On nearly every page, Frankl is fighting the ideas that man is a machine, that he is "only" different combinations of various material elements, that he and his totality are the products of a mechanistic evolution. Frankl claims that man is a unique creature with values all his own and because of these "higher" values he is separate, in a new dimension (the noetic), from all other creatures. In fact, this noetic dimension, can never become sick, which makes me speculate that it is immaterial. But, Frankl won't call it a spiritual soul in the traditional religious sense, and it certainly isn't, at least according to Frankl, the product of evolutionary biology.

Because man is indeed unique, as every evolutionist would argue, this does not put man above the evolutionary process. Man's body and his behavior are unique. In both his body and behavior, the uniqueness shows very special biological adaptations built in by natural selection.

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23. Ibid., p. 50.

The essential point is not that man has relinquished or risen above his ancient primate program, but quite simply that he is a unique primate with a unique primate nature. But each and every species is unique in its specializations - isn't that how we tell them apart?

The uniqueness of man's body does not represent a difference in kind between him and other primates. It just represents a long series of trying specializations. Permanent bipedulism is one of the most obvious of man's adaptations. Other primates can walk on two legs but usually don't. Man's complete bipedulism occurred as he adapted to the hunting life of the savanah. So to, in the same process of adaptation, the frontal lobes of the brain expanded in both size and complexity; the end result of this adaptation was in increase in intelligence, articulate speech, greater learning capacity, foresight, and so on. But all other primates, likewise, have brains with frontal lobes. They are different or "unique" because they have specialized differently in response to different environmental problems.

While each species is unique, certain similarities are often noticed. Everyone with the exception of the staunchest fundamentalist recognizes the obvious fact that bodily continuities exist between different but closely related species. It is the contention here that behavioral continuities are present and just as obvious. Because of the great emotional rage engendered by Darwin's Origin of Species most people could see only the differences between man and other primates and not the similarities. The inclination

that there is an unbridgeable gulf (noetic dimension in Frankl's terminology) between human and animal behavior has resulted from a failure to look closely and think comparatively. Theoretical blindness about physical structure has been replaced by a theoretical blindness about behavior.

By placing man's highest behavioral capabilities such as his ability to experience love, loyality and friendship in the noetic dimension, Frankl is essentially asserting that these qualities are not the product of evolutionary mechanics since the noetic realm is neither acquired nor is it the product or the result of something else. Unfortunately, Frankl doesn't comment on what is the origin of the noetic except to say that it is part of man's fundamental nature.

Frankl does, however, comment upon the origin of moral behavior. He insists that moral behavior is uniquely human and that its origin lies in the noetic dimension of man and not in his biological evolution. However, it is now very clear from the research of various ethologists[24] that species other than man have also formed very efficient social controls over the inhibition of intraspecies strife, the regulating of sexual behavior, the caring for young and the defending of territory against enemies. The regulation of antisocial impulses, guilt, and altruism all have their behavioral counterparts in our evolutionary ancestors. Heroic self-sacrifice in the service of his societal members is not unique to man. The mechanisms underlying these behavioral aspects of morality have evolved biologically. They originate from within the genetic make-up of the species.

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24. D. Wright, The Psychology of Moral Behavior, Middlesex, England, pp. 17-18.

Observing these behavioral analogues of morality in primates other than man, Lawick-Goodall[25] has reported that male monkeys will feed and defend, at times with their lives, females with young; less spectacularly, monkeys will groom each other, and mothers are devoted in the care and protection they give their offspring. In man, the biological roots of his behavior are often hidden under the elaborate superstructure of culture made possible by his fantastic ability to learn and to think and to communicate. However, only the most fanatic "environmentalist" would try to deny the universality of the adult's protective responses to young children or the mother's responses to her own offspring which clearly show the presence of biological influences on behavior. Although these behavioral responses cannot always be assuredly interpreted, they are still so very widespread and environmentally stable in their general form that they merit being considered biologically or evolutionarily founded. Campbell[26] has further insisted that the readiness with which men are prepared to die in defense of their community or country is not fundamentally understandable unless it is seen in its evolutionary context. No account of altruism in man can ignore the influence of the underlying evolutionary behavioral predispositions and still retain any significant intellectual

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25. J. Van Lawick-Goodall, "The Behavior of Free-Living Chimpanzees in the Gomb Stream Reserve, "Animal Behavior Monographs, 1968, Vol. 1, part 3.

26. D. T. Campbell, "Ethnocentrism and other Altruistic Motives," Nebraska Symposium on Motivation, Univ. of Nebraska Press.

credability. Unfortunately, logotherapy continues to deny the evolutionary roots of our "higher" values without regard for the mounting stacks of ethological data.

In spite of numerous pages written by Frankl about the need of the logotherapist to be aware of the advances in science, it seems that he has made the subject of values an illegitimate subject of scientific investigation because their basis (noetic realm) and origin cannot be found in the purely physical and biological realms. It is imperative that all our values be investigated by scientific methods if we are to have any chance to obtain greater clarity and assurance in gaining an understanding of our own aims and if we would order and direct these goals in such ways as to attain in 'human living' a more harmonious interaction of strivings and of activities and a greater feeling of fulfillment. There are no grounds in evolutionary biology for considering the likes and dislikes of humans', their emotional responses and drives, their desires and values as being determined by processes any different from the evolutionary mechanics whereby all other characteristics were produced. The identical principles of blind mutation, genetic recombination, and natural selection which have been implied to be the cause of the evolution of other physiological and structural characteristics, are equally applicable to the origin and establishment of the affective traits. It should not be surprising that the present day emotional and affective structures of any species, including man, provides the basis for an intricately anastomized web of responses that are all nicely adjusted to the function of the same major purpose - species survival - even

as is true of all other bodily functions.

Frankl's prime weakness derives from the fact that he hasn't achieved the proper depth of understanding to establish why his logotherapy works. He has achieved remarkable success by an empirical trial and error method of counseling. Frankl has clearly recognized and enumerated ways in which people can achieve meaning in their individual lives. He has abstracted three broad areas within the realm of human life, e.g. man's activities, personal experiences and attitudes, within which man can find meaning. He has not only generalized, but he has filled in such broad areas with case after case substantiating his position. He has also realized that meanings and values are strong forces which serve to tie the individual and groups of individuals together. It is easy to see the fundamental importance of Frankl's thrust for it is dealing with the most fundamental of all questions: why am I living?

Frankl's counseling methodology attempts to deal with this question by helping the patient gain a total perspective of his life in relation to the world and not merely the treating of symptoms. This attempt in itself places logotherapy far and above the many piece-meal attempts at psychotherapy. Yet, in the final analysis, we find that although logotherapy has "matured" to the point that it is now asking the right questions, but it still lacks the fundamental basis for reaching sound and reliable answers.

An instance of Frankl's lack of depth of understanding can be seen in the following example. Frankl has often mentioned a survey conducted among

his students at the University of Vienna in which he reported that 40 percent of the students (that is, the German, Swiss, and Austrian) who attended his classes affirmed feelings of ultimate absurdity, while 81 percent of the American students stated similar feelings.[27] He concluded that one shouldn't state that this existential vacuum is by and large an American disease, but rather it is seemingly a concomitant of industrialization. Here again, Frankl has made an accurate empirical observation, but he is unable to answer why there is an apparent association between the existential vacuum and industrialization. He can mention that there are too many jobs which make man like a cog in a machine and which therefore deprive man of any meaning. This is another accurate observation. However, the essential issue here is why is man so designed as to derive meaning from some activities and not others. In other words, why is he designed as he is or what is his evolution.

One of the most fundamental tenets in Frankl's Logotherapy is that happiness or fulfillment is the byproduct of the quest for meaningful goals. Anyone, according to Frankl, who consciously seeks happiness as an end in itself will be frustrated and unfulfilled. Frankl has again made an important observation of a real situation. But, once more he is not really able to explain why it is so. Since the central question of Logotherapy revolves around the achieving of meaning or fulfillment, it is of vital importance to see how these psychological experiences came into being in the course of evolution and why

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27. V. Frankl, "Existential Dynamics and Neurotic Escapism," Psychotherapy and Existentialism, p. 19.

they were selected for. Once an understanding of the basic tenets is established, the constant "groping for a cure" which confronts the logotherapist and the patient may be more easily crystalized into an understanding of the problem so that proper behavior redirection can be achieved. If we can understand the reason why such experiences as meaning and fulfillment were designed into the organism during the course of evolution, it should provide the fundamental basis of dealing with the type of ontological problem that logotherapy faces. Therefore, in order to truly understand the success of logotherapy, it should be viewed through an evolutionary perspective.

Frankl has stated that "life never ceases to have meaning for anyone" and that it is the role of the logotherapist to aid the patient to rise above despair. In other words, the concept of hope is of central importance in logotherapy. Frankl has observed the occurrence of the belief or hope that there is more to reality than man in traditionally religious, agnostic, and atheistic individuals. Again, he has made a keen observation but he fails to answer why even though it is quite basic to his theory. Yet, if Frankl would adopt the evolutionary perspective, he would realize that in order to cope with the problems of being a hunting species, humans must have evolved to a significant degree, the capacity to hope. Since the ability to hope is such an important and long established trait, one would expect the genes influencing such a capacity to be well distributed throughout the human population regardless of specific religious orientation. Thus, while the

accuracy of Frankl's observation goes without question, his understanding certainly does not.

Logotherapy asserts that the present widespread feeling of emptiness is caused by a double loss that man has endured: the loss of both his instincts and his tradition. Animals get direction for their lives and behavior from their instincts. Man, says Frankl, was deprived of his basic animal instincts much before the dawn of history: "his instinctual security, like paradise, is closed to him forever". Man must obtain the direction of his life by means of his capacity to strive for the meanings of his existence. But, man must likewise depend on values handed down from generations by tradition.[28]

This view of man is quite unreal because it is based on a gross over-simplification of the causes of man's behavior. It implies a type of behavioral dichotomy in man (e.g. the false argument of instinct vs. learning) that is totally misleading. It assumes that the human infant is a tabula rasa- a blank slate - unencumbered with the vital, programmed demands that direct animals. All that the infant possesses is intelligence and the ability to learn everything it is taught. Thus, it is implied that any culture can enscribe whatever it wants on the blank slates, limited only by some physiological principles. It is true that culture cannot force the infant to reproduce or live underwater. It must reinforce learning correctly by reward and punishment so that the creature adopts the customs of the society. That there are, in theory, virtually no limits to the learning process, is supported by the

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28. J. Fabry, p. 98.

incredible diversity between cultures. Thus, the need for food (hunger drive) does not explain the diversity of food taboos.

At the level of specific content, this perspective is quite correct. So the major question must be asked: "Are the only rules of man's behavior those of learning psychology, or is there something else in man that produces regularities that, despite their surface differences arise in society after society?"

To help explain this relationship of general behavioral predispositions and how these are shaped by different cultures Tiger and Fox have adopted the use of an analogy with the development of language.[29] They report that with the tabula rosa concept all language must be acquired by the processes of imitation, reward, and punishment. However, modern linquists regard this concept as an untenable position to maintain. Linguists like Chomsky[30] and psychologists like Lenneberg[31] assert that the capacity for grammatical speech is somehow engrained within the brain, just as the ability to walk is somehow engrained within the body and develops as the child develops. They maintain that the child learns since it has a cerebral language, an acquisition mechanism, which permits it to learn rules for the production of sentences it has never before heard. The device allows it to handle data and deduce rules. Furthermore, a child's speech is based on rules of sentence production appropriate to the child's degree of development.

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29. Lionel Tiger and Robin Fox, pp. 12-15.

30. N. Chomsky, Language and Mind, New York, Harcourt, Brace, and World, 1968.

31. E. H. Lenneberg, Biological Foundations of Language. New York, John Wiley and Sons, 1967.

Thus, each child has the ability for grammatical speech and is ready to be programmed with whatever specific language its culture has. The specific languages are numerous and diversified. Nonetheless, the speech patterns of all languages have been reported by linguists and they operate on only a few basic principles. However great languages of human societies may differ in content, there is a regular relationship between the phonemes, morphemes, clauses, and sentences. According to Chromsky,[32] universal grammar which tells the principles on which all particular languages depend are known. He further states that no language exists that a linguist cannot record with the universal phonetic alphabet and analyse with universally applicable techniques of semantic analysis. This analysis can occur because, in spite of the diversity of superficial grammars, languages are all doing the same job in a limited number of ways.

Identically, all the numerous aspects of human culture lie in the biology of the species. We have, according to Tiger and Fox[33], a culture acquisition device forcing us to form recognizable and analyzable human cultures, in the same way as we must produce recognizable human languages, however diversified the local dialects may be. Just as a youngster can learn only a language that follows the "rules" of grammar for human languages, he can learn only a grammar of behavior that follows the "rules" of the biogrammar.

Therefore, if all behavior, including linguistic behavior, is just the result of cultural conditioning, then the logical conclusion is that if ever

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32. N. Chomsky, Language and Mind.

33. L. Tiger and R. Fox, pp. 14-15.

a new generation were cut off from tradition, it would be questionable if humans could invent one again. From this perspective, human culture seems not to be derived from human nature, but rather, it is the sum total of unique skills and knowledge that must be passed on or lost. But, is it true? Frankl and his followers claim that it is. In fact, logotherapy makes a strong appeal to the influence of crumbling tradition as one of major forces propelling man into his existential vacuum.

However, if your and my offspring could survive and breed in isolation from the influence of culture, one can be fairly confident that they would perform a predictable variety of behavior. They would develop a society with laws about many things, such as incest, how and whom to marry, use of property, and habits of taboos. They would bow down to the supernatural and yet try to control it in some way. Initiation would take place and courtship ceremonies would be developed. Men would do certain activities which would exclude women. Some type of gambling would probably be found and so on.[34] Excluding any influence of cultural tradition, an isolated group of individuals would form very specific and highly complex cultural patterns and quickly once they started a language working. For humans have not only a very general physical ability to learn, they have an inclination to learn some things much more easily than others.[35]

This perspective is not the old instinct theory; initiation ceremonies, gambling, etc., are not "instinctive". They develop only from an animal designed to produce them, once it is given the appropriate stimuli; without

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34. Ibid., pp. 14-15.

these stimuli, the normal behavior can only be distorted. We are wired in a particular way so that at certain stages of our life cycle we can process certain types of information and produce certain types of responses.[36] These identifiable behavioral predispositions are wired into man's basic design. The unique outcome of the human wiring is human cultural behavior with its diversified symbolic content, its complex social traditions, and the nongenetic ways of transferring knowledge from one generation to another.[37]

Joseph Fabry[38], in his book the Pursuit of Meaning which is intended to be a guide to the theory and application of Frankl's Logotherapy for American readers, has asked: What are the forces that motivate man? Can they be controlled? What kind of creature is he (man)? He then states that logotherapy claims neither to have found the answer to these questions, nor to be the only school of therapy trying to find the answers.

Yet logotherapy has achieved certain measures of success because it has recognized the importance of values in man's life and has asked basic and important questions which all humans must face. However, logotherapy hasn't achieved the proper depth of understanding of human nature which will permit it to out grow its groping, trial and error method of counseling. It is the function of this dissertation to explain the how and why of logotherapy's success by establishing the development of the evolutionary perspective as the basis of logotherapy. This evolutionary program will strengthen

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36. Ibid., p. 15.

37. Ibid., pp. 18-19.

the chances of counseling success, for it is only through the evolutionary perspective that depth of understanding is achieved, a depth which logotherapy now obviously lacks.

Chapter 3

How An Evolutionist Views Man

When an evolutionist views the life of man he sees it as part of a much larger biological process which had its origin billions of years ago. However, it is very difficult for most of us to view man through such "evolutionary eyes". The evolutionist may talk in terms of billions of years while even the notion of a million years is so removed from our experience as to be devoid of meaning to us. Even periods of time that stretch beyond a life time tend to tread on the beginnings of vagueness for us.

Since we are able to understand the notion of the length of a year and of its subdivisions into months, weeks, days,....seconds, James Rettie, in 1950, attempted to reduce a geological or evolutionary time scale down to conceivable dimensions by presenting it in subdivisions of a year. He imagined that a planet, called Copernicus, which was beyond our solar system had come into being approximately four or five billion years prior to earth and that in the course of time intelligent men evolved.[1]

In his imaginary plan, about 750,000,000 years ago these Copernicans had reached the stage where they had developed time lapse cameras and they had also developed powerful telescopes that gave them a clear view of what was taking place on earth. They decided to make a film of

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1. Jamie C. Rettie, "The Most Amazing Movie Ever Made," Coronet, 1951, March, Volume 29, Number 5, p. 21.

the Earth's history, on the basis of one picture per year. Well, this has been going on for the last 757 million years. When the film is run in the projector at the normal speed of twenty-four pictures each second, then twenty-four years of earth history passes in a second.[2]

According to Rettie, the Copernican - Interstellar Expedition will arrive on Earth in the near future with a copy of the time-lapse film. The whole film is planned to be shown in one continuous showing, starting at midnight of New Year's Eve and continuing day and night without stop until midnight of the following December 31. What it amounts to is showing two million years of the earth's past each day and a total of the 757 million years which the Copernicans have observed. The 757 million years will go from the so-called pre-cambrian times to the present.[3]

Throughout the months of January, February and March the movie progresses without any manifestations of life on earth. Finally, in early April we see protozoans swimming around. Many celled creatures make the scene in late April. Towards the end of May the first vertebrates appear. Not until the middle of July do the very first land plants arise. Late August finds the amphibians, or first land vertebrates arriving. At about the middle of September reptiles appear. The dinosaurs dominate the scene for the next 70 days. Sneaking in during the last few days of the dinosaur reign are the first birds and mammals. As the Rocky Mountains start to rise the era of reptilian domination starts to decline.[4]

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2. Op. cit. p. 21

3. Ibid., p. 22

As December arrives mammals begin to dominate. Still no sign of man! ! Christmas is "celebrated" with the Colorado River starting to cut the Grand Canyon. Still no sign of man... December 26, 27, 28, 29, 30 and finally the last day of the year. At last at about noon time of December 31 the first man appears. That afternoon the glaciers make their push southward and then retreat, four successive times. By dinner man is still not really very apparent. However, by 11 P.M. the so-called Old Stone Age men take over a prominant place and by quarter to twelve men making specialized stone tools appear. Then at 11:55, the dawn of civilization is witnessed. With only 1 minute and 17 seconds left the Christian era starts. At 11:59:53 the Declaration of Independence is signed.[5]

Life has been here for nearly eight months of the movie's year, yet man only accounts for approximately twelve hours of the year and civilized man accounting for only five minutes.

Still, for most people it seems like a long, long time since the development of human civilizations but all that five thousand or so years is but an evening or should I say a few minutes to the evolutionist. During this time period of our species the most obvious spectacle to our Copernican observers has been our unprecedented increase in population. The evolution of our own order, the primates, is a seventy-million year old episode in the evolution of the mammals - itself just a single episode in the evolution of vertebrates -- itself only an episode in the evolution of living matter.[6]

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5. Ibid., pp. 23.

6. Lionel Tiger and Robin Fox, p. 20.

According to most anthropologists the evolutionary lines leading to man diverged from the other primates at least as far back as 20 million years ago. Several investigators claim that 20 million years is an incredibly conservative estimate. Few, however, dispute the important fossil ape-man, or man-ape, whichever one prefers, of Australopithecus which lived about five and one half million years ago. Although they had small brains the evidence strongly suggests tool making capacities and bipedalism as two of their major advancements on the road which was to become man. Over a million years ago is the birthday of our ancestral Homo erectus who was the first upright representative of the genus Homo who also possessed an enlarged "human-like" brain. Homo sapiens is only 500,000 years old, while the emergence of modern man, Cromagnon man, is as recent as 40,000 years ago.[7]

So lies our past. And it is through that enormous past that the physical and emotional structures of man were designed. It must be reiterated that not just the design of the physical structure but also the design of man's social behavior, his learning, his loving and all the other aspects of his being have been the product of evolutionary mechanics. Engrained within the more primitive components of our brain are the very ancient programs of behavior which were built in by natural selection during our long past in the african jungles and in our important journey over the pliocene savannah. Just as "man" moved from the jungle to the pliocene savannah he also would move again to meet face to face the cold habitats of the pleistocene. And

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7. Op. cit., pp. 20-21.

in its proper succession came the following developments: fire-nearly 500,000 years old; agriculture-10,000 years old; "decent" sized cities-3000 to 5000 years ago; the industrial revolution-150 years ago and finally the nuclear age arrived only 30 years ago.[8]

We saw man in the film version of the earth's history as being present for less than one per cent of the total time. Likewise, if we try to show in an average modern length movie of about 90 minutes the life history of man, the tool maker, then today's industrial man would zoom by like a fast automobile past your home, all within a matter of a few seconds. In fact, the viewer who might be momentarily glancing at the person next to him would probably miss truly modern man.

Even though industrial man has been here for less than a single percentage point of our human past often we take this civilized, technological complexity as our model of what man really is. However, biological nature (evolutionary biology) is quite conservative in action for the most part. If we really take a good look at ourselves we shall find behind the tie and sport jacket are those creatures which during the upper paleolithic became the most daring and efficient hunting machines designed by evolution. According to Tiger and Fox very little, if anything, of significance has occurred in our evolutionary history from the time we stopped hunting, and moved to a life in the fields and the cities. They conclude that man the hunter is not just an episode in our dark and often forgotten past: we are still man the hunter as much as we ever were, incarcerated, domesticated,

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8. Ibid., p. 21.

polluted, crowded and bemused.[9]

To truly understand man we must try to pull back and draw ourselves away from the high speed activity of our daily life within our complex industrial society and view man as our hypothetical neighbors on the planet of Copernicus did. If we do then we shall see that for almost our entire hunting past our species total population probably never increased over a million people. Yet, after we added agriculture to our growing bag of tricks it quickly zoomed up to about 100 million. Today, within the midst of our agricultural-industrial fusion we now have more than 3,500 million and rising. A hunter selected for life within groups of 40-60 people should feel out of place with the size of our population centers and its large scale bureaucratic organizations specializing in reducing individuals to numbers and the computerizing of social relationships.

This perspective is vital in order to make any positive in roads toward an understanding of ourselves and our social structures. It is important to note, as pointed out by Tiger and Fox,[10] that the agricultural and industrial civilizations have added nothing to the fundamental wiring of the human. We are designed to be efficient hunters and that includes all the wild emotions, inquisitiveness, fears, and social ties that were necessary in order for us to survive in the hunting mode of existence. And we are programmed fundamentally on a primate model. This programing was modified

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10. Ibid., p. 22.

and modified again and again during the more than seventy million years prior to our emergence as a distinct group from the rest of the order. For even in this perspective our magnificent forebrain is one of the new readjustments and we so clearly know from our own daily lives how much the cerebral cortex battles to control and direct our lower brain, the seat of so many of our emotions.

Man's past is one that covers millions of years as a hunting primate which is tied together with a new structure called the symbolizing brain. We have the capacity to have a rational, objective understanding of our emotions. When we nearly despair upon experiencing our helplessness at preventing wars, the decay and disgust of polluted cities, the impersonal organizations, racial strife and religious warfare and numerous other social and personal problems somehow we always come up with some cover all alibis. Some people blame it all on capitalism, communism, Dr. Spock's permissive parents, on the decline in religion, affluence, racism, maybe even the youth movement, the military-industrial complex ad infinitum.[11]

It reminds me of a group of blind-folded people who were allowed to touch one part of an elephant (either the trunk, tail, or separate legs, back, etc.,) and then asked to describe what it was they felt. Of course, all gave accurate descriptions of what they felt but it was impossible for any person to put it all together since they argued amongst themselves that their own particular view of reality alone was true. If they had taken the time to listen to what the other people contributed and then pieced the

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11. Ibid., p. 22.

information together then maybe they would have figured out that they were just touching different parts of the elephant.

Likewise, each of society's critics represents many true failings of the system they describe. But nobody listens to each other as in the elephant story. Just as when the people were amazed when they stood back and took off their masks and looked at the whole elephant that they saw how all the little pieces fit in and that every one was indeed a little bit right but in a very limited way in their perceptions of reality. In a similar fashion we must also stand back and take a look at man, the whole man, that is, his evolution. Only in this way can the little pieces of information concerning man which are contributed from such areas as sociology, anthropology, philosophy, religion, psychology, and many other aspects of man's life make sense.

Chapter 4

The Integration of Logotherapy within the Evolutionary Paradigm

Ultimately, the value of any particular activity can be measured by how it (the activity) enhances species survival chances (or the survival chances of individuals who possess genes for the same activity). The central question, "what value is evolutionary biology in understanding human behavior", centers around the theory's ability to explain and to predict human behavior so that mankind can better control the general directions of human actions.

According to Newtonian physics nature is completely deterministic (for every action there is an equal and opposite reaction). This implies that if one knew all past, present, and future physical and chemical parameters of all systems and interacting subsystems in the universe then all phenomena could be known with certainty. All the history of science demonstrates that the more that one knows the better he can predict what will occur (or the more parameters known the more accurate are the predictions). The reliability of predictions is directly dependent upon the number and type of facts from which the theory is derived. Therefore, from an historical perspective, especially in light of the accelerated pace in recent years of modern scientific research in geology, chemistry, biology and the subdivisions of each area, there has been an enormous quantity of supporting facts added to the theory of evolution. Consequently, the ability of evolutionary biology to explain diverse phenomena has increased

tremendously and accordingly so has its predictive potential.

It is reasonably assumed that a similarity in structure means a similarity in origin. This is the underlying assumption which ties man directly to the rest of the animal kingdom. By studying the comparative anatomy of man's ancestors in relation to their supposed environments, the origins of man's bodily structures are discovered. However, that which determines whether a structure is to be preserved by natural selection is the behavior which the organism elicits. If behavior is selected for, then the structure which causes the behavior will be preserved. Therefore, it is behavior which is central to the evolutionary process. So by studying comparative behavior of organisms thought to be ancestral to man it will give a good indication of the roots and causes of human behavior.

In studying those disciplines concerned with human activities we find man exhibiting all sorts of behavior. Patriotism, loyalty, rebellion, faithfulness, hypocrisy, love, territoriality, aggression, curiosity are only a few of the different examples of human behavior. Formerly the explanations of such behavior were thought to be found only in the ontogenic viewpoint of man's life in which environmental factors, such as the family and society, were sole determinants of behavior. However, recent investigations of animal behavior reported in the writings of Tinbergen, Lorenz, Hess, Fox, Tiger, Ardrey, Morris and others have shown that nearly every

behavior exhibited by man seems to have its origin in one or more of our genetic ancestors. The evolutionary advantages of such behavior becomes quite obvious upon reflection of the needs of individuals in relation to their societies.

This is not saying that man's behavior is not significantly modified by learning as affected by both family and society--it is. In fact, it is ingeniously designed by evolution to be modifiable. It is apparent that violence, prejudice, and love are considerably influenced by learning. But the significant point is: they are learned EASILY. Therefore, man has definite predispositions to certain types of behavior which have been selected for in his ancestors.

The behavior of man emerge from the physiology of a creature programmed to elicit them, at the onset of the correct stimuli. Remove the stimuli and one removes the behavior or distinctly changes or distorts it. Man is comparable to a computer that has been wired in a specific manner, geared to the various points in his life cycle and to handle and process certain types of information. The information must be of a specific type so that it can be handled but its content may vary considerably. Man, therefore, is wired in a definite way in order to process and emit information about various aspects of social life such as language and rules about sex and that it may handle this information only at definite times and only definite ways. Highly significant and detailed investigations have been performed by Piaget[2] on the processes of human development and especially

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2. Jean Piaget, "The Definition of Stages of Development," In J.M. Tanner and B. Inhelder (eds.), Discussions on Child Development, Vol. IV. New York: International Universities Press, pp. 116-135. 1969.

the development of the knowing process and concept formation. It is Piaget's contention that the child's intellectual growth consists of the development of certain concepts (or strategies) which permit the child to utilize the information his environment provides. The process of concept formation is sequential in nature and serves as the vital building blocks of future concepts. This programming is directly correlated to the life cycle which is both physical and behavioral at the same time. For example, the human infant begins to smile at a very predictable time, and the boy soon ends his days of shrillness to become a person more uncertain, more annoying to his elders. His behavior changes as it is programmed or designed to do. Indeed, not only human boys but also young males in many other primate groups suffer the disregard of their elders and the uncertainty of a transition from one role to another.[3] Further support for the concept of the wiring of certain behaviors into the life-cycle of the organism was provided by John Scott[4] who reported a critical period for learning territorial boundaries coinciding with sexual maturity in dogs.

If a complete understanding of an organism's evolutionary past is known then it can be stated that one would know why the organism is designed and behaves the way it does. With this knowledge in hand it is a lot easier to predict what type of behavior will be elicited from an

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3. Op. Cit., p. 17.

4. John P. Scott, "Critical Periods in Behavioral Development", Science, 1962, Vol. 138, 949-958.

organism within different situations. Endeavors that would put a stress on the design could then be predicted as well as those which wouldn't.

By understanding the design of the organism (in general, the species design or more specifically, the race design or ultimately the design of the individual) one would understand how, as Lorenz has stated it, man's parliament of instincts is integrated in order for the various components of man's society to work effectively together for the group survival. The analogy of parliamentary or congressional behavior with that of the diverse individual human emotional directions is quite appropriate. Often conflicting and opposing viewpoints are represented with parliamentary proceedings. The relative situation determines which perspective will win out and be expressed with the end result having aided the collective group survival. Even though diverse interests are present this permits the group great latitude in responding to a multitude of situations. Marvellous examples of how actions are controlled or released all in an effort to enhance the country's survival can be seen in any review of a congressional year.

The constitution of our instincts does closely resemble a parliament in the sense that it is nearly a complete system of interaction between numerous independent variables; its democratic nature has been formed through long years of natural selection; the end result is usually considerable behavioral harmony or at least tolerable and practicable compromise amongst the various interests (behavioral predispositions). For example, even though a species may act with aggression it doesn't preclude its members

from ever being cooperative, loving, helpful or kind. Actually aggression is an important component of these other behaviors and ethologists have strongly argued that we should consider aggression as a constructive force acting for the species survival. It is only when this constructive energy is transformed into violence that it can overturn our internal order and endanger survival. Even in these situations violence against predators can be easily seen in a positive light. There is a very delicate balance which must be achieved with respect to our parliament of instincts. Ethological studies have shown how various animal populations have managed such integrations. There must be enough aggression amongst the individuals of the same species in the same population to permit selection to occur and the various subfunctions to be served. This usually is aided by the process of ritualization which prevents internal violence and destruction of the population; however, violent opposition to external threats must be developed. The nonviolent aggression within and violent opposition on the outside always has to be delicately controlled. Individuals must be able to be violent in order to insure their integrity, yet they should be non-violently competitive with each other. The integration of the numerous different types of behavior permits an incredible degree of adaptability permitting the best response for each situation.

The maintenance of the proper integration and functioning of the "parliament of instincts" is absolutely necessary for the psychological well-being of the individual person. However, the disruption of this

delicate integration of our motivational components will lead to psychological problems of maladjustment. The School of Logotherapy has dealt quite successfully in numerous instances with many despondent people who have no apparent purpose in their life. Frankl maintains that happiness is the by-product of the quest for meaningful goals. In order to understand best the success of logotherapy it should be viewed in an evolutionary perspective. Although happiness takes as many forms as there are individuals, there are a number of generalizations that can be made. Many people find happiness in working with and helping other people, others find happiness in being mothers or fathers, or in the activity of discovering something or in working hard for an important cause. If one considers the examples that have been mentioned, all at different times have had very high survival value to the human species. Certainly, the survival value of good friendship (resulting in mutual aid under stress), responsible and loving parents (resulting in greater percentages of offspring survival), curiosity (causing novel and vital discoveries or inventions in many areas of life), and dedicated and reliable people (which would enhance the success of any group endeavor) cannot be seriously questioned.

These activities have been of undoubtedly great survival value to the human species in the whole course of its own evolution. Whenever there is behavior that is vitally important to the survival of the species, evolution should design some way to ensure that such activity is continued. A species tends to "enjoy" doing what has been vital to its survival: sex and eating

are the two most explicit examples. Evolution has designed positive feelings which would include such generalized feelings as happiness, pleasure, satisfaction, contentment, fulfillment, etc. with the performance of activities of extreme value to the species. Thus when a person does a good deed for someone it often gives the giver a good feeling. Thus, the saying, by giving one receives. The positive feelings are directly linked to the performance of a behavior which is important to the species. Consequently, good feelings are the by-products of the questing for a meaningful goal (the act of extending a friendship). Of course, meaningful must be defined in reference to an activity which has survival value to the species. Therefore, when people think that they are indulging themselves with various pleasures and vanities, they are right; but they are even helping the species more directly than themselves. Positive feelings exist because they are intimately tied with survival; for even as distasteful as some primitive hedonisms appear to us they are part of the evolutionary design ensuring that animals do what is required for their continued existence.

If the logotherapist or any counselor had an excellent understanding of the origin of man's body and behavior from a phylogenetic perspective the act of counseling would be set on a more solid foundation and the results would be more successful. If the goal of the individual is to lead a meaningful life then he or she must live in accordance with their basic design which can be best grasped by an evolutionary perspective.

Since evolution has produced a structure (the human mind) which can understand itself, man is now somewhat capable of directing his own evolution. In looking at the vast numbers of species which have gone extinct over the past millions of years it is easy to see how opportunistic and unreliable natural selection is. In other words, blind or non-directed evolution (from a perspective of the human species) is quite dangerous to our own survival. Therefore, the survival value of a mind which can direct its own evolution is incredibly important. A mind that can create a technology which can modify the environment and the genetic make up of the organism can certainly take much of the chance out of natural selection and thus cause the species to stand a better opportunity of avoiding extinction.

Chapter 5

The Efficiency of Biological Design as Determined by Evolutionary Mechanics.

It is vitally important to grasp an understanding and also an appreciation of evolutionary mechanics in order for it to become a constant influence in one's view of behavior. In this way one may establish an evolutionary paradigm which will enhance any understanding of human behavior.

When we view either an established structure or behavioral pattern this is the product of often millions of years of natural selection. Natural selection should really be viewed as a screening process whereby the most efficient organisms tend to get the most offspring successfully to reproductive age. In fact, the screening process of evolutionary mechanics is undoubtedly the most rigorous witnessed by man. This process may be isomorphically compared with the process of becoming a professional athlete. If one watches a professional game he certainly will marvel at how expert these players are, how specialized for their respective roles, both physically and motivationally to perform well. Let us briefly look at how difficult it is to become a professional baseball player.

The whole scheme of things starts off with millions of children with all kinds of hopes and aspirations of becoming another Ted Williams. This begins in Little League at about 9 years of age. By thirteen when Babe Ruth League starts and Little League ends the number of teams is always reduced and consequently a large number of individuals who played Little League

just get eliminated either because they were not as good as some others or because they wanted to direct their energies elsewhere. In either case a double selection is made for those having the necessary physical talents as well as the psychological motivation. This process continues with even greater selective pressure as we find often only one legion baseball team between two or three towns. By the time that we, as spectators, see a professional baseball game we are seeing the end result of a screening process which in theory has produced the best performers possible from the original raw material.

In a similar fashion all aspects of the human animal have been highly selected for and should be very efficient. The emotional dimension along with the physical have been integrated for optimum results. An example of the efficiency of evolutionary design can be seen in the female reproductive system and her behavior. As has been implied earlier the positive feelings associated with the act of sexual intercourse exists because it is designed to ensure the continuence of that behavior (sexual intercourse) in order to propagate the species.

It is a fact that human females are capable of participating in sexual relationships at any time. Although this is how they are able to perform, this statement doesn't really describe the way they actually do behave. If we neglect subjective impressions but only count objectively "copulatory success" Tiger and Fox[1] report that human females will copulate more often

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1. Lionel Tiger and Robin Fox, pp. 76-77.

at the midpoint of their cycles, or when they are ovulating, than at either end of the cycles. Michael and Zumpe[2] and Udry and Morris[3] have likewise demonstrated the highest frequency of copulatory acts at the middle of cycle for all other primates. Consequently, just as for the other primates, the physiological cycle of the human female is intimately joined to a behavioral cycle. The evolutionary paradigm would predict that when researchers get reliable data on both sexual activity and sexual feelings then it would be most likely true that, regardless of variations in class, culture, geography and protocol of sexual interaction there would be a general inclination for women to desire and to engage in sexual intercourse far more often when they are likely to conceive or when they are experiencing the fertile part of the cycle. This correlation may surprise many people. However, when one considers the most efficient use of energy consumption it becomes very clear that optimum utilization of sexual energies is best realized when it is coincident with the highest degree of procreative success. As expected from our evolutionary perspective we find the menstrual cycle is related to hormone levels which influence behavior in general and sexual behavior in particular. Here again it is found that physiological processes are related to social patterns of behavior, and that

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2. R. P. Michael and D. Zumpe, "Rhythmic Changes in Copulatory Frequency of Rhesus Monkeys (Macaca mulatta) in Relation to the Menstrual Cycle and a Comparison with the Human Cycle," J. Reproduction and Fertility, 1970, Volume 21: 199-201.

3. J. R. Udry and N. M. Morris, "Distribution of Coitus in the Menstrual Cycle," Nature, 1968, Volume 220: 593-596.

this is quite apparent where the sexual interaction occurs.

Another important piece of evidence for this ties in the sense of smell which is so vital in the sexual signaling system of primates. LeMagnen[4] has reported that women increase by incredibly large proportions their ability to detect the odor of musk and strong odors in general during ovulation. At this behaviorally intense segment of their cycle they need just a small fraction of the quantity of musk scent needed at either end of their cycle to detect its presence. Not only is the sense of smell affected, but Kopell[5] reports that so is the clarity of perception. In the three days just preceding and following menstrual bleeding, human females show an wide array of behavior disturbances. Thus, when her sexual excitability runs down and her body readjusts to prepare for menstruation she suffers from perceptual confusion and fails in tests where she has to discriminate between materials of different degrees of relevance.

Peripherally, an evolutionist can predict that rhythm birth control as advocated by the Roman Catholic Church, which is the abstainance from sexual intercourse during the fertile part of the cycle, will put an unusually strong emotional strain on the practicing couple since they are not supposed

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4. J. LeMagnen, "L'olfaction:le fonctionnement olfactif et son intervention dans les regulations psychophysiologiques". J. Physiol. (Paris), 1953, 45: 285.

5. B. S. Kopell, "Variations in Some Measures of Arousal During the Menstrual Cycle." J. Nervous and Mental Disease, 1969, 148 (2): 180-187.

to have sexual intercourse on the days when the couple are most easily aroused. This may be one of the reasons why rhythm is not one of the most successful methods of birth control. Furthermore, and quite importantly, by compelling the couple to have sexual relationships during the least excitable days of the cycle it may greatly diminish the enjoyment of the act for both members. The implications of this for couples practicing rhythm have yet to be examined. However, predictions certainly cannot be too favorable.

The female reproductive system functions in a very efficient way. The most highly successful organisms would be those in which psychological behavioral predispositions were tied most closely to normal physiological functions. If the connection is not too efficiently synchronized it creates waste and misdirection of energies. Waste of materials and energies can only create a drain on the system. Thus, there is a highly efficient integration of all components of the human body, both physiological and psychological, since they are the result of the long evolutionary screening process.

Chapter 6

Part 1. What Evolution Says about Economic Behavior in Man

The behavior of man in economics is as much the product of natural selection as any other aspect of man's behavior. Because man did not have the necessary qualities of the carnivore, human hunters required tools and weapons for the hunt. Human hunting also needed a special kind of social cooperation in order to be successful. Men needed to accomodate to each other and to the varied skills they unequally possessed, so they made bargains with each other.[1]

The hunting way became successful: From being at first only a supplementary activity, it later became the dominant force for the whole course of human life and it evolved to cope with life's ever increasing complexities. Our entire anatomy shows this development from our highly convoluted brain with its powers of speech and association to our striding walk and to our upright posture. From the rather obscure little man-ape australopithecine of south Africa man evolved into a very efficient hunting machine geared to the wandering life of the savannas and the intense pursuit of game. However, at the same time our psychological life, the emotions, intelligence and our social skills were adapting to meet the identical exigencies.[2]

Since no two people are equal in their abilities the successful hunting group must have blended various complimentary skills together. For example, one person could be an excellent fighter, while another might be a very efficient

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1. Lionel Tiger and Robin Fox, The Imperial Animal, New York, Dell Publishing Co., pp. 120-121.

2. Op. cit., pp. 120-121.

tracker; another may be poor at fighting but he may be able to make efficient weapons; the elders would probably be wealths of information, the young reserves of strength, and the entire group must work cooperatively for the life and success of the whole group. There was also the presence of competition amongst the members, for status played an important role in the life of the primate. A further characteristic of such a group was the division of labor between men and women and the requirement of each sex for the products and services of the other. The end result of the differentiation and competition was the bargain. Men as individuals and groups of men set up agreements based on the exchange of services and property. Obligations were therefore assumed by the exchanging parties. No single man was able to ensure his own survival; man never hunted by himself, he needed allies.[3]

The economy of the hunt, thus, made strong use of bargaining, speculation, calculation, taking of risks, insurance, making deals, the influencing of the distribution of goods, investment, capital accumulation, debt and obligation, and a whole line of other skills that appear quite different from those we are accustomed to exercising ourselves only since the context is very different. But, over the millions of years man evolved as an animal that received significant emotional satisfaction from having and using such talents.[4]

Women also exhibit dealing behavior, whether it is a female borrowing some flour or a Ghanaian mammy trader bargaining some cans of corned-

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3. Ibid., pp. 120-121.

4. Ibid., p. 123.

beef to a smaller trader in a village. Women can be found dealing and organizing numerous affairs which tend to keep many things going. But the big adventures and exciting hunts are male. Besides the male body being adapted for tropical savanna hunting in groups, much of his emotional life and many of the skills he very actively cultivates are connected to huntinglike activities. Our hunting past is a male animal designed for certain work and the seeking of certain satisfactions. He enjoys exchanging, solving, competing, speculating, cooperating. Understandably, he likes feeling prosperous but the prosperity cannot often contradict the public interest. Why? High status among males is closely associated with being the center of redistributive activity. The rich person appears odious if he is miserly; miserly behavior which is brought to its logical conclusion would put an end to social relationships because it would negate the fundamental importance of exchange and reciprocity. In all human economic systems which utilize the accumulation of wealth, and hence the existence of wealthy men, the forces toward and benefits from public generosity are universal and easily seen. This is not implying that the wealthy like this approach, for exploitation is also universal but it is a dangerous activity and only successful if backed by force.[5]

Nobody in the hunting band can expect to exploit anyone else too often. Individual existence is too delicate. An individual who hordes and does not redistribute would be in a difficult position if the situation was reversed.

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5. C. Levi-Strauss, "The Social and Psychological Aspects of Chieftainship in a Primitive Tribe: The Namebikwara," Trans. of the New York Acad. of Sciences, Series 2, Vol. 7, No. 1, 1944.

Thus, the hunting group was a face to face economy in which in individuals were tied into a series of personal obligations. Accumulation by a hunter is worthless, after a certain point; he could not eat more meat than a certain amount or use more weapons than he could handle. The successful hunter would convert his surplus into prestige. There is a mutuality of aims and indebtedness between the leader and the group. The central importance of being powerful is the control of distribution while the importance of accumulation is the sharing; thus, the outcome of all this behavior is at least in theory, food for all members of the group. Therefore, accumulation and generosity are complimentary aspects of the same process.

According to Marcel Mauss[6] there is an obligation to give as well as an obligation to receive and to repay. The belief in these obligations is universal in human society and the person who fails is either hated or punished. It is a fairly tight system founded on the economics of tight little groups working seriously at the business of survival. These types of motivations still remain with us but the perceptions of such are shielded within our civilization.[7] Lee has summarized the main features of the hunting economy in the following ways:

The primate base provides for (a) a rudimentary sexual division of labor, (b) foraging by the males, (c) the cooperation of males in a framework of (d) competition between males.

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6. Marcel Mauss, Essai sur le don, "Annee Sociologigue N.S.1 (The Gift, Cunnison, I.G. (trans.), London: Cohen and West, 1954.

7. R.B. Lee and I. Devore (eds.), Man The Hunter, Chicago, Alaine, 1968.

It is small-scale, face-to-face, and personalized.

It is based on a sexual division of work requiring males to hunt and females to gather.

It is based on tool and weapon manufacture.

It is based on a division of skills and the integration of these skills through networks of exchange (of goods, services, and women).

There are networks of alliances and contracts (deals) among men.

It involves foresight, investment, judgement, risk taking and a strong element of gambling.

It involves social relationships based on a credit system of indebtedness and obligation.

It involves a redistributive system operating through the channels of exchange and generosity; exploitation is constrained in the interest of group survival.

It bases status on accumulative skill married to distributive control -- again in the interest of the group as a whole.

It is important to see all these factors as integrated into the hunt. They are the social, intellectual, and emotional devices that go to make up an efficient hunting economy, in the same way that muscles, joint artification, eyesight, intelligence, etc., go to make up the efficient hunting body. They are the anatomy and physiology of the hunting body social. It is a system of the savannas and the hunting range, and it is the context of our social, emotional and intellectual evolution.

Many of the current social problems are intimately tied to our economic system and in the relatively recent changes it has undergone. These problems are quite new and what stimulates them is consequently also quite new. As little as about 25,000 years ago the number of humans was as few as 125,000 to an approximate maximum of two or three million.[8] The early humans had plenty of room in which to hunt. As the years and generations passed, tools, language utilization, and skills for organization became more efficient. All this led to man becoming more prosperous and consequently to more breeding success.

However, the agricultural revolution which resulted in considerable changes in man's daily life occurred approximately 10,000 years ago. The origins of agriculture and the population density which comes from forming communities near rivers, deltas and valleys were to strongly test man's basic hunting design. Agriculture provided us, as is popularly thought, with a food surplus, settlement, leisure, and the start of the virtual base-line of civilization.[9] But it additionally provided us with two conditions which figured to place the most intense strains on the supreme social hunter that we were (and still are): it provides us a hard to manage and ever growing population density; in addition, it gave us the despised boredom of the common task, the drudgery of constant year-round agricultural toil.

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8. E.S. Deevey, "The Human Population." Scientific American, Vol. 203, Sept., 1960.

9. R. Braidwood, "The Agricultural Revolution," Scientific American, Vol. 203, September, 1960.

It caused the formation of the peasant and while it did ultimately free a "creative" segment of the population that produced writing and all other advances of the civilized existence, it condemned the vast number of the increasing human community to a sedentary and servile existence.[10]

According to Tiger and Fox[11] the agricultural revolution was actually a great leap backward for man. It brought most of us back to the restrictive food-getting condition of our primate past: for we put most of our time in food-getting activity, every day, every year. It forced most people to occupy and rely on a small portion of land, and denied all but the rich of the pleasures and excitement of the hunt. It did, however, allow most to still wheel and deal and make some sort of agreements but it did not tie all this to the macrostructures of economic power. It made us, as individuals, no longer contributing to the future of the larger group but insecure and at the will of those who maintained the predatory existence. In the end it created slaves and serfs who were denied even restricted land and autonomy.[12] This occurred all within the short span of about 10,000 years. This happened to an animal that had been very carefully and masterfully designed through long years of natural selection to range and gamble, lounge and play, feast and forage - all in the wild quest of food over diverse and varied areas of

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10. R. Adams, The Evolution of Urban Society:Early Mesopotamia and Pre-Hispanic Mexico, Chicago, Aidine, 1966.

11. Lionel Tiger and Robin Fox, pp. 126-127.

12. M. Bloch, Feudal Society, London, Routledge and Kegan Paul, 1961.

the land.

To add to the adjustment the species would be struggling with while coping with the agricultural leap came another strain probably more complex and undoubtedly causing the numbers of people to increase almost geometrically. Approximately two hundred years ago or there abouts industrialization arrived and spun man into a new situation. Large increases in population, degradation of numerous environments, and a biological novelty - the wage earner - was born, with no one like him in past and no apparent place in the evolutionary design.[13] To add more fuel to the fire this rate of social change was speeded up to the point where any sense of continuity from generation to generation - a factor deeply engrained in the hunter's experience - was significantly diminished.

To look at all these changes which man has had to cope with speaks unbelievably well of the hunting brain that it had the capacity of dealing with and indeed sometimes even seeming to provoke these revolutions. But, however, this brain is undoubtedly still the old primate brain with the addition of our cerebral wrinkles.

In the identical way, man still has the ancient primate body designed to be a hunting machine by the savanna life experience. There has just not been enough time for an agricultural or an industrial brain or body to have evolved. The body was not designed for sitting all day behind a desk

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13. F. Engels, Condition of the Working Class in England, Oxford, Blackwell, 1958 (1892).

or for bending over and weeding in a field - as those people who do excessive amounts of either behavior often discovered to their dismay. Our emotional desires and satisfactions were not designed for these ends either.[15] It is quite often thought that, since man is nearly infinitely adaptable, that this does not matter. But is this true?

At each stage of these quick developments man had imposed on himself severe strains but undoubtedly new gains for the species occurred. The central point is, did the gains out-distance costs (or strains) ? In the strictly numbers view point the species prospered. It grew in quantity and dispersed and out placed other species in the battle to survive. But the costs on the specific individual in many cases were very high. And quite possibly the distortion of social organization that led from these developments may in the present and near future become disastrous. Therefore, in as much as any new economic system permitted the "players" some of the emotional and intellectual satisfactions of the hunt, it represented at least a so-called holding operation; and in as much as it robbed a majority of the "players" these satisfactions, it marked a definite loss. Tiger and Fox[16] have stated that the frustration stemming from the repression of the complete expression of the hunting syndrome lies directly behind much of the anger and alienation that have characterized socioeconomic revolt. Marx[17] has long ago described

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16. Op. cit. p. 127.

17. Karl Marx, Early Writings, New York, McGraw-Hill, 1964.

how alienation denied men of their contact with nature. Many contemporary workers are alienated not just from the end results of their work but also from the roots of their biology.

Economic systems must not only find ways of providing the food for the community but they also must emotionally satisfy the worker: the worker should love his work. In agriculture as compared to the conditions of the hunt described above, we might often find the lord living far removed from the workers. And in industrial environments the manager will often move on to bigger and better places. It certainly is a much more different situation for a worker to do a minute task on a small part of a larger matter than it is to create a hunting song, or to run as quickly as others to the scene, to talk about the feeling of the adventure, and to finish the job with either victory or failure but at least in friendly company.[18]

Even though the agricultural phase deprived many people of numerous behavioral satisfactions it didn't completely wipe out the psychic benefits in the cause of material achievements. In many tribal agricultural systems there is still the small scale face to face involvement, the immediate satisfaction of food requirements by way of one's own efforts, the making and undoing of alliances and bargains through the exchanges of goods and the pressure leading towards redistribution. Manquet[19] has reported that there is considerable evidence that the chief evolved quite simply as redistributing

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18. Lionel Tiger and Robin Fox, p. 128.

19. J. Maquet, The Premise of Inequality in Ruanda, London, Oxford Univ. Press, 1961.

centers in economic systems that developed greater complexities than the simple hunting group. Shapera[20] noted that in the Bantu culture that the chief's granaries are always available to the people. The garden products, cattle, and other goods that the chief takes as tribute almost always filter back into the system through the branching network of agreements and the retributive occasions of feasts and festivals. Large numbers of systems reflect a mixture in the way that some hunting is still performed or at least its behavioral analogue in tribal warfare occurs. There is continuity from generation to generation and everyone is a piece of the system to which he is needed and which he needs.

Darling has shown that the predominantly pastoral tribes in addition to having all these features have the further advantage of movement, of nomadism. The productive group needed for herding has quite a few similarities with the hunting group, even if the relationship to the animal life is significantly changed. Furthermore, some hunting or some similarities to the hunt are in operation: for example, the whole activity takes place out of doors and in an operationalized setting of movement across the territory, moving from place to place, and experiencing variety.[21]

What could be more removed from the arena of activity of our ancestral hunters than the factories giving off smoke and producing metals, or the

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20. I. Schapera, The Bantu-Speaking Tribes of South Africa, London, George Routledge and Sons, 1937.

21. F. Darling, "Pastoralism in Relation to Populations of Men and Animals," Cragg, J.B., and Pirie, N.W. (eds.), The Numbers of Man and Animals, Edinburgh, Oliver and Boyd, 1955.

incredibly complex massiveness of a large insurance business. However, even in these organizational settings the human being with its basic design must work and survive. How do these industrial economies help us to fulfill or strain our basic design?

Probably the most obvious characteristic of the industrial society is that of the division of labor. It seems true that the division of labor is more completely practiced in the industrial society than in most others. It is the basis of incredible work efficiency as well as industrial misery. Marx[22] stated many times his passionate hatred for extreme division of labor and Durkheim[23], while recognizing its value in organizational efficiency, was acutely aware of the extreme danger of creating a boredom second to none. Just the mental picture of a person spending his entire working life turning nut after nut on automobile after automobile on the assembly line easily can make one see Durkheim's conclusion. However, the division of labor by itself is not the cause of this misery. Men doing alloted jobs, which, taken in their entirety, would produce a final product was nothing new or harmful in human evolution. However, the primitive division of labor in the conditions of which we evolved occurred in the close, interpersonal context of the hunting group with all its other characteristics (described above). The contrast is not between the completely independent person on the one hand, who probably never existed anyway, and the over-specialized and depersonalized person on the other. The contrast is however, between the

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22. Karl Marx, Capital: A Critical Analysis of Capitalist Production, (3rd German ed., trans. by Moore, S., and Aveling, E.) London, S. Sonnenschein, Lowrey and Co. 1887.

23. E. Durkheim, De la Division du Travail Social, Simpson, G. (trans.), The Division of Labor in Society, Glencoe, Illinois, Free Tress, 1922 (1893).

depersonalized person, and the specialized person who is locked into a small group on pretty much equal terms with his peers - who realizes that by his alliances he can rely on a return from the group for his specific effort. He is part of the redistributive process and from the cumulative effects of his group's business he can definitely expect some reward. No matter how unimportant he actually is the group is responsible for him. The unalienated man is not the completely self-sufficient man but he is the socially sufficient man - and according to Tiger and Fox it is this feeling of social sufficiency that modern industrial organization endangers.[24]

Industrial organizations have done this by removing the majority of people from taking part in the predatory activity and transforming them into tools - or objects of exchange instead of being agents of the exchange. Although the agricultural system did the same thing to its peasants it at least gave them some control of their lives. Industry, in similar fashion to slavery, denied men of even that. The routines of factories with their unhealthy and unwholesome environments and the interchangeability of one jobholder for another were signs of a new sophistication in the elaboration of boredom. One had to labor in those miserable factories mostly because the system had very few alternatives for the large numbers of people that were forced into cities. One sold one's time and unskilled work activities. To sell your labor to the organization was an original economic creation for now the worker had the dubious distinction of not even having physical

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24. Lionel Tiger and Robin Fox, p. 132.

interaction with the purchaser and also lacking the chance to wheel and deal. Even the mercenary soldier was better off; indeed, he did sell his labor but he experienced some immediate results which the factory laborer was denied, such as adventure, the exercise of predatory skills, and booty and women. The factory workers had nearly all the disadvantages of the peasant but none of his advantages. In flowerly language he was free but in reality he was a wage slave.[25]

Did industry allow for any of the satisfactions built into the hunting animal's design? Well, it had one major advantage over a strict slave system: it provides men and women the opportunity to feed their families as a result of their own labor. However, the constant threat of unemployment soon became a long standing failing feature of the system, over which the laborers often had no control, and this of course, would add to their feelings of helplessness.[26] Obviously, there is no unemployment among hunters while employment is pretty much guaranteed for slaves.

Like the agricultural system, the industrial organization found its way from redistribution to exploitation. This had the result of placing the predatory life style in the hands of only an elite few; it likewise condemned most of the people to a life of subjugation and exploitation. Karl Marx's most significant perception was to demonstrate that this exploitation was not the result of inherent human evilness, but a property of the system itself. The owners usually exploited their worker without being tied into any system of redistribution.

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25. Op. cit. p. 133.

26. S. Lebergott (ed.), Men Without Work, Englewood Cliffs, New Jersey, Prentice-Hall, 1964.

Personal spontaneous generosity was always present in the context of charity, but the hunter's redistribution behavior was an obligation not charity. Historically, we find that eventually and always with extreme opposition of many economic theorists, governments have had to take over the redistributive activity that the system lacked. This came often as a result of revolt or gradually because of worker's peaceful demands. But no matter what caused it directly, it came.[27]

Our evolutionary background with its adaptation to the hunting economy predisposed us to expect definite satisfactions and to desire certain goals. Any economy which does not provide for these whether they are capitalist, socialist, communist, mixed slave or peasant will struggle as much because they don't deliver the psychological satisfactions as they do the material goods.[28] Thus, any system that relegates most of their citizens to positions outside central networks of exchange, production, and distribution are bound to falter.[29]

The fundamental economic predispositions of the human animal are compatible with numerous systems in various ways. Some systems make full use of some potentials and ignore other areas. What seems most important is not really how the different systems produce and distribute wealth but how

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27. Lionel Tiger and Robin Fox, p. 133.

28. Ibid., p. 134.

29. Ibid., p. 134

they allocate the right to behave in certain important or vital human ways.

From a theoretical point of view the laissez faire capitalist economy offers a large opportunity for expression of the inherent predatory tendencies and the many patterns of behavior tied to them. A high number of relatively small competing firms repeats the hunting milieu in many ways. However, this pattern may become quite easily distorted by both its own activities and its inclination to monopolistic competition and the polarization of wealth. The rise of ownerships among vast numbers of share holders and the formation of managerial elites and their bureaucratic structures can likewise change it beyond recognition. All these factors join together in many cases to deny most of the people a function in the predatory process and make very unlikely any equitable system of distribution.[30]

The communist or socialist economy, in contrast to the capitalist system, maximizes the redistribution activities but plays down or tries to eliminate altogether the predatory behavior patterns. In reference to social welfare, health, education, housing, and employment, the individual has a justifiable claim on the communities' resources - a community to which the individual is permitted and in fact encouraged to contribute his efforts with a feeling of important participation. However, this type of economy is always in trouble of stagnation because competition and predatory infighting have been wiped out. By eliminating both features the communist economy has removed a significant amount of initiative and innovation and the sharpness

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30. Ibid., 140-141.

that generates efficiency when anything of value, be it money, prestige or survival itself, is at stake. The development of the competitive "capitalist" processes which have been introduced into socialized economies strongly testify to the situation just described.[31]

Many have claimed that the mixed economy would be a solution to the problem. Tiger and Fox have suggested that predatory free business would be permitted, but the government would operate the larger service businesses such as railways, banks, hospitals and act by way of legislation and taxation as a redistributive center. However, they suggest that this economic structure creates the difficulty of establishing an optimum balance among the subsystems. The problem is identical as that experienced by the large bureaucratic organizations. Man was not designed to deal with organizations on this scale; however, there seems no real way of avoiding it especially with the size of our total population. The authors concluded that they are not sitting in judgment on the different economic structures but only to indicate what is peculiar concerning the evolved behavior of man, the economic animal, that such economic systems have to be aware of.[32]

Therefore, just as sexual intercourse must not only produce offspring but also provide enjoyment for its own sake if a pair-bond is to "take," so too economic activity should not only effect the production of wealth but it must result in behavioral satisfactions if people are to realize their human

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31. Ibid., 140-141.

32. Ibid., 140-141.

potential. It is most definitely true that every known economy can be dehumanizing and the critics of such systems are very outspoken. However, as in the analogy of the blindfolded people describing different aspects of the elephant's body, each of the critics of the various economies also describes very accurately the failing of each individual situation but there is really no common thread of unity amongst these critics. Therefore, these critics have had a difficult time finding the truly human element that is often denied in those wealth producing, and people-abusing and consuming economic machines.

In conclusion, for any truly synthetic understanding of human economy economic behavior must be seen to be as much the product of human evolution as every other aspect of human nature. To deny a man's right to exchange, to make deals, to be in debt and to repay is as harmful as to remove his right to sexual satisfaction or any of the other numerous satisfactions designed into the human animal.

Part 2. What Evolution Says about Woman's Role in the Economy

The reality of the sexual division of labor must be handled by each economic system. The roles of males and females have traditionally been quite distinct from each other. Lionel Tiger in Men in Groups has proposed that the specialization for hunting broadened the differences between the behavior of males and females. The hunt favored behavioral patterns which set up arrangements so that males worked together in groups while females handled the maternal and some gathering activity. Besides there being evolved biological differences between males and females in perception, brain size, posture, hand formation, locomotion, etc., there also evolved social structural changes. The male-female union for reproductive functions and the female-offspring union for nutritive and socialization functions became wired into the life-cycles of the creatures.[1] Tiger has further suggested that the male-male union for hunting functions also became wired to insure equal non-randomness in the activity of social relationships in this regard as in reproductive ones.[2]

The development of the hunting way of life meant significant changes in diet and this was accompanied by anatomical changes. Additionally, as a result of the nature of the prey hunting increasingly needed more efficient

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1. Kenneth E. Bock, "The Comparative Method of Anthropology," Comparative Studies in Society and History, Volume 8, Number 3 April, 1966, p. 277.

2. Philip E. Slater, "On Social Regression," American Sociological Review, Volume 28, Number 3, June, 1963, p. 339.

forms of co-operation than had in theory presumably been present in groups where all noninfants got their own food and where a complex division of food-gethering labor was not needed.[3] According to Campbell the co-operative groups taking part in the hunt would have been all male and there would have been very strong selective pressure favoring such exclusive male bonds.[4]

Two situations follow from the fact that females would usually be pregnant or nursing their infants nearly all of the time. First of all, most adult females wouldn't be able to act within the hunt without lessening its efficiency. Secondly, any female who did join in would be at the very least more apt than her sisters to lose offspring, miscarriage and have a death by accident. The contributions, according to Tiger, of non-maternal female behavior to the genetic pool would not be as great as the contributions of those women who accepted a more clear-cut sexual difference and enhanced the group's survival prospects chiefly by full-time motherly and gathering behavior. An interesting corollary of possibly the same process is the reduced reproductivity of career women. The higher her occupational position, the less chance a North American female is to be married and have children.[5]

In similar fashion, just as females who engaged in the hunt with males would be at a long run genetic disadvantage, so also would those males who

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3. Richard Hofstadter, Social Darwinism in American Thought: 1860-1915, University of Pennsylvania Press, 1945, p. 174.

4. Frank Beach, "The Snark was a Boojum," American Psychologist, 1950, Volume 5, pp. 115-124.

5. Lionel Tiger, Men in Groups, p. 10.

allowed females to join the hunting party. Even when not "burdened" by pregnancy or babies, a female hunter would be slower, usually less strong and quite possibly subject to changes in emotional composition as a result of her menstrual cycle, as well as less efficient than males in the ability to adapt to changes in temperature. Furthermore, the females may interfere with the co-operative nature of the group by initiating competition for sexual access. Male hunters who permitted females into their groups would be, as those females themselves, not as likely to contribute to the genic pool than presumably the hunters who maintained male separateness at these times. A broad number of male-female physical differences seem to strengthen this reconstruction of evolutionary events which produced them.[6] For example, John Napier has reported differences in modes of locomotion between males and females,[7] while A. Kortlandt and M. Kooij noted sexual differences in the ability to throw spears, rocks, etc.,[8] Tiger, commenting on a personal communication with J. S. Weiner, noted that males have a greater adaptability to temperature changes than females and related this directly to hunting practices

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6. Ibid., p. 60.

7. John Napier, "The Antiquity of Human Walking," Scientific American, 216, 4 (April, 1967), p. 57. There are differences which are most directly related to pelvic structure associated with hunting if only because female pelvic structure limits females from the type of movement useful and maybe even vital for hunting. If one recalls that modern day Bushmen hunters hunting an animal may travel more than twenty miles in one day, the utility of specialized locomotor adaptations is very obvious.

8. A. Kortlandt and M. Kooij, "Protohominid Behavior in Primates," Symposia of the Zoological Society of London, No. 10, 1963. Throwing style of chimpanzees and gorillas is quite similar to human female throwing style; however, human male throwing is unique among primates.

in tropical savannahs.[9] Margaret Mead[10] has also pointed out that males demonstrate greater spatial geographical ability while Maccoby[11] has reported males to be more aggressive than females. These are all differences which relate more clearly to differences in behaviors like hunting or defense than to child-bearing and rearing. It is also known that there are predictable and disruptive effects on female performance that depend on their menstrual cycles. Several reports indicate that females receive some fourteen-percent lower grades on examinations during the premenstrual days, when they are at a formitable disadvantage.[12,13]

Although there are other physical differences between males and females it probably is of greater importance in today's western world to consider not the physical features but the intellectual, social and emotional skills of females. In today's western industrial society there are relatively few positions that require such great arm strength and fleet footedness that females could not meet the needs. Women can and do operate large trucks, airplanes, elaborate machines, and power assisted controls of cranes, etc. There is

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9. Lionel Tiger, Men in Groups, p. 60.

10. Margaret Mead, Continuities in Cultural Evolution, Yale University Press, 1964, p. 98.

11. E. E. Maccoby, (ed.), Readings in Social Psychology, Holt, Rinehart and Winston, New York, 1958, pp. 323-326.

12. K. Dalton, "Menstruation and Acute Psychiatric Illness," British Medical Journal, 1959, 1: 148-149.

13. K. Dalton, "Schoolgirls' Behavior and Menstruation," Brit. Med. J. December, 1960.

very little biological justification for thinking that there is any job which men now perform that women cannot do. And the reverse is also true: with the exception of bearing and suckling of offspring there is really no "women's work" that a man could not do. Contemporary ideas of job and social equality of the sexes have tended to compel us into the domain of a society in which male and female jobs are basically interchangeable.

However, in spite of such relatively equal abilities in job potential for both males and females in most human cultures anthropologists affirm that a distinction is made between women's and men's work. Even where distinctions are not very defensible they are nevertheless still made. For example, in one village men may carry water and women plant crops where as in another village relatively close by the women carry the water and the men plant the crops. The next general feature of this division of labor by sex is that some jobs are broadly regarded as the correct domain of males and others of females. Hunting, the manufacture of weapons and the construction of boats are nearly universally regarded as male, while such jobs as grinding seeds and gathering food are seen as females' work in most places. This behavior seems to follow directly from the hunting past.[14]

It is more difficult to explain the dogged persistence of the division of labor by sex in societies with various forms and degrees of industrialization, different climates, histories, etc. According to Tiger and Fox there seems to be a tendency to define some work as female and some as male and maintain

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14. Lionel Tiger and Robin Fox, p. 144

this separation whatever the content and whatever the cost.[15]

Even in places where equality between males and females in the labor force has been made by law the differentiating tendency persists. A newspaper report concerning Soviet women in the labor force noted that:

> Soviet women have the right to work; but mounting protests insist that the women get too large a share of dirty, heavy and unskilled jobs.
>
> The gangs of earth-digging, brick-carting, snow shoveling, and asphalt-laying women to be seen in most Soviet streets, with the men supervising or sitting comfortably in the cabs of their machines, are one of the first impressions to strike visitors.
>
> Giving statistics about the employment of women in heavy manual work, the Literary Gazette today called for additional legislation to protect the feminine labour force. It must be noted that all the professions are open to women, and it is no surprise to meet women sea captains, judges or industrial managers.
>
> Nevertheless, a study carried out at a Saratov construction site showed that out of 1,212 persons employed in heavy manual labour 1,030 were women. Out of 136 diggers not equipped with mechanical aids, 119 were women. Conversely, in jobs where mechanical equipment was used only 138 of a labour force of 1,033 were women. There is the same picture in agriculture.
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> One reason suggested by the Literary Gazette was that heavy jobs have much higher rates of pay.[16]

Even in the United States it was not until 1963 that females were finally granted equal pay for equal work by law.[17] Regardless of this legislation strong opposition to equality still remains. Wide discrepancy between males' and females' wages were present in the United Kingdom as

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15. Lionel Tiger and Robin Fox, p. 144.

16. Kyril Tidmarsh, "Right to do the Hardest Work," The Times, February 16, 1967.

17. "Equal-wage Bill is Voted in House," New York Times, May 24, 1963, (western edition).

recent as 1966. Even in Sweden, which is often thought to have an effective female working force, the situation is nearly as unfavorable to women as the English one. The average hourly pay in 1964 in Sweden was 40 cents lower per hour for women as compared to men. Furthermore, high level posts and high salaries are quite disproportionately held by men.[18]

Also, in the Soviet Union, where over 80 percent of the medical doctors are females, nevertheless women tend to concentrate on pediatrics and obstetrics while surgery is almost all male.[19] In sub-Saharan Africa, Robert LeVine observed "conspicuous uniformities" in the differentiation by role in all of the major institutions of society and on the basis of a number of tested indices, implied that females living in the traditional-type of differentiated communities are happier and show less evidence of ill health than the "liberated" female.[20]

In politics and economics human communities appear to become sexually differentiated so that males dominate. Where females do apparently have certain amounts of success in these areas this seems to stem from a self-conscious process of designed change rather than a natural change. However, in numerous countries, women's employment has significantly increased[21] and there is a definitely wider range of possible occupations that have been

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18. Lionel Tiger, Men in Groups, p. 140.

19. Ibid., p. 140.

20. Robert LeVine, "Sex Roles and Economic Change in Africa," Ethnology, 5,2 (April, 1966), pp. 186-189.

21. Lionel Tiger, Men in Groups, p. 142.

accessible. But it still does remain that the overall pattern is for women to work for men.

The male domination in the economic and political arenas is a species-specific behavioral pattern which is directly linked to the fact that males tend to bond in situations involving power, force, and numerous other conditions. Females seem to be naturally excluded from these bonds. It must be realized that these broad patterns are biologically wired into the organism. These different expressions of male dominance and bonding in such various communities are precisely what an evolutionist might predict from a species so highly adapted to its environment and to which learning is so important an adaptive process. Archaelogical evidence now support the claim that hunting is at least 14 million years old. This evidence nearly compels us to accept the sexual differentiation as outlined above.[22]

This program of male-bonding for important political and economic concerns is not a program as ancient as sexual reproductive behavior or maternal or infant behavior but it is nonetheless a very ancient one which is designed to still excite strong commitments, emotion and action. A very important social implication is the real possibility that these male bonding patterns form the foundations of all community action and organization.[23]

Tiger has suggested that the male bonds of politics, work and war are the behavioral mechanisms by which the small communities join under certain conditions to create the large societies in which most contemporary humans

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22. Ibid., p. 144.

23. Ibid., pp. 144-145.

live. When human groups enlarged beyond about ten to thirty people it became important to develop bonds of super and subordination and some distribution of labor and of defense duties. This bond is customarily male.[24] According to Washburn[25] early man lived in quite small groups and that we have consequently evolved to feel strongly about only a small number of individuals. The male bond and male interactions evolved to form the foundations of community structures. Tiger states that from an evolutionary perspective female means, among other things, being involved in specific interactions.of a personal type while "male" implies activities on a larger scale, with the possibility of greater impersonality, with greater direct and active concern to community integrity and social dominance. Frank Young in Initiation Ceremonies has noted that

> male solidarity is redefined as community solidarity, as...female solidarity (is)...redefined as family solidarity.[26]

What does this mean for contemporary women with principles of equality of job opportunity being so strongly emphasized today? It should mean that although we must recognize that men and women should have equal opportunity in our society we should also realize this does not mean they are the same. To deny there are sexual differences is to hurt not only the man but also the woman by making each insensitive to the needs of the other. Certainly

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24. Ibid., p. 145.

25. S.L. Washburn, "Conflict in Primate Society," The Social of Early Man, Aldine Books, Chicago, 1961, pp. 11-13.

26. Frank Young, "Initiation Ceremonies," Family, Socialization and Interaction Process, T. Parsons and R. Bales (ed.s). Free Press of Glencoe, Ill., 1955, p. 141.

it is the option of women to question and to oppose whatever they desire concerning the ways in which men organize their time and their activities. However, over the long haul, the interests of those people trying to ameliorate the conditions of women may be best advanced by understanding the readiness of men to bond together and perhaps their biological need to do so and by working with these predispositions rather than against them.[27]

Possibly the most efficient tool women may employ could be their understanding of what they are essentially up against and how cautious they should be in attempting to change patterns which may be deeply rooted in the design of male behavior. Women must realize that men need men just as they need women if their design is to be fulfilled. As Tiger concluded:

> it may be as biologically necessary for men and women to divide when they meet in groups as it is for them to couple when they meet alone.[28]

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27. Lionel Tiger, "Why its a Man's World," The New Yorker, 1970.

28. Ibid.

Chapter 7

Evolutionary Biology: The Basis of Interdisciplinary Studies

The underlying perspective of this dissertation is that an understanding of the theory of evolution will aid in interpreting and predicting human behavior. It is really not an astonishingly new development to utilize biological theory for the analysis of human behavior. However, it is important to show historically how deeply encrusted the resistance is to view man, his individual and social behavior, as being as much a product of evolution as any other aspect of the biological world. As far back as Aristotle and his classifications it was believed that man had a special place relative to other animals and that in the total view of life man was understood to be different from other animals not just in degree but also in kind.[1]

Another major source of opposition to the theory that man is only one among numerous groups of animals has derived from several religious sects which proposed that man is the result of a special act of creation by God and consequently is not subject to the same rules of behavior and morality as other animals.

Additionally, even though there are numerous people who claim to accept at least intellectually the theory of human evolution many of these same people just cannot or won't accept its widespread emotional and moral implications. In the Judeo-Christian culture which effects the entire western world the calling of a person an animal has most definitely debasing and

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1. Kenneth E. Bock, "The Comparative Method of Anthropology," Comparative Studies in Society and History, Volume 8, Number 3 April, 1966, p. 277.

insulting overtones.[2]

Besides the rejection of darwinism by religious fundamentalists the transformation of the darwinian theory into social darwinism was to later play a major role in its rejection by many of the leading intellectuals. Therefore, even though darwinians such as Kropotkin and Lester Ward tried to link the social darwinians with reactionary politics and accused them of faulty extrapolations of darwinian theory, social darwinian views held sway for a while. As a result of the "red in tooth and claw" philosophy as well as its extremely eugenic societal orientation a strong reaction arose against the use of biological analogy in the social sciences.[3]

In the field of psychology the emphasis on behaviorism and the theory of learning completely dominated any attempts to study what, if any, innate predispositions of behavior existed for any animal. In fact, Frank Beach[4] has stated very assertively that American psychology has been unbelieveably behavioristic and only concerned with so very few species - most often the Norway rat - and such limited behavior such as conditioning and learning - that it has been unable to make very reliable comparative psychological generalizations.

In sociology and anthropology evolutionary theory's influence fell off

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2. Philip E. Slater, "On Social Regression," American Sociological Review, Volume 28, Number 3, June, 1963, p. 339.

3. Richard Hofstanter, Social Darwinism in American Thought: 1860-1915, University of Pennsylvania Press, 1945, p. 174.

4. Frank Beach, "The Snark was a Boojum," American Psychologist, 1950, Volume 5, pp. 115-124.

quite rapidly when social darwinism lost favor with the intellectual segment of society. New emphasis was quickly directed to methods of field study and analysis. Fairly reliable monographs and empirical research provided the basis for building new theory and this seemed to settle the question of innate behavioral predispositions and their social implications. Also, a further gulf seemed to separate physical anthropology from its social and cultural neighbors; even the research of the physical anthropologists appeared not to be directly concerned with problems of human evolution, but rather of questions of archaeology and racial distributions, etc. Excluding the works of Freudian and Jungian followers no really significant study of innate behavior was even remotely in touch with sociology and anthropology.[5] Robert Erwin[6] has criticized historians for failing to effectively deal with human prehistory and for generally by-passing non-verbal records of ancient societies in the writing of history. This type of reaction was most likely to occur as long as the nature-nurture dichotomy was reasoned to be realistic, as long as the idea existed that there was a "critical point" below which pre-human organisms existed and above which humans created culture.

In spite of the heated controversies which surround the subject it is pretty clear that the nature-nurture and instinct-learning dichotomies reflect a fundamental misunderstanding of the motivation and direction of behavioral processes. This type of dichotomy carried to their respective extremes would

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5. Lionel Tiger, Men in Groups, p. 10.

6. Robert Erwin, "Civilization as a Phase of world History," American Historical Review, Volume 71, Number 4, July, 1966.

probably conclude that innate behavior is that which appeared in the absence of an environment, while learning is behavior which needed no organism.[7] The problem often seems to have divided most thinkers because of political orientation rather than for scientific reasons. Socialists and numerous other reformers have strongly defended the position that human behavior differed in kind from animal behavior since altering the environment could cause nearly any modification in personal and social behavior with the case of Lysenko as the extreme of this perspective. Conservatives stated that racial and social differences are the result of differences in genetic endowment. Consequently, they claimed that social reform was wasted effort for the most part. Though the darwinian theory of selection related mostly to success in leaving surviving offspring capable of reproducing the anti-environmentists interpreted the theory to indicate that contemporary inequalities were unstoppable and "pre-set".

A very strong and, of course, predictable reaction set in against the conservative interpretation. Tiger[8] has explained that the lack of research on innate behavioral predispositions was caused by an increasing refinement of welfare economics, the democratization of politics, the lessening of inequalities in privilege and a nearly universal antipathy to the results of racism and imperialism on non-European countries. Aggression became seen as response to different kinds of frustration; it wasn't innate. Hostility could be nearly eliminated if the environmental conditions would be controlled.

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7. Thomas E. McGill (ed.), Readings in Animal Behavior, New York, Rinehart and Winston, 1965, p. 1.

8. Lionel Tiger, p. 12.

For the "liberals" social hierarchies were caused by the exploitation of the masses by the leaders. Socialist leaders tried to create societies with no social hierarchical differences, while governments instituted proegalitarian measures. These environmentalist ideas finally culminated in America's War on Poverty and the numerous federally sponsored programs which were designed to actively assist the disadvantaged.

Thus, the idea that human social interactions as well as the private psychological experiences were manageable and changeable in regard to sociological theories tended to discredit the theory of a human nature which is definable and unchangeable.[9] Consequently, there was very little study on innate behavior.

According to A.L. Kroeber

> "Psychologists have become very unwilling to discuss the inherent psychic nature of man. It is definitely unfashionable to do so. When the subject is faced at all, it is usually only to explain human nature away as fast as possible and to pass on to less uneasy and more specific topics."[10]

The rejection of biological explanations for human behavior was tied to potential and real fears of extreme racism and eugenic practices. But, moreover, the rejection was also tied to the inadequate data and the forthcoming indefensible conclusions which were often made on very sensitive issues. Additionally, technical, methodological, and empirical improvements in the social sciences supported the view that the scope of useful conceptual tools were broad enough. Consequently, it was deemed un-

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9. Op. cit., p. 13.

10. A. L. Kroeber, Anthropology, New York, Harcourt, Brace, 1948, p. 61.

necessary to attempt to assimilate biological concepts which had been shown to be untenable. Even though there was an attempt to keep the question open, it was generally viewed that in the absence of more accurate and more detailed biological data very little could be contributed by human biologists. There appeared no real threat that biological discoveries would upset the advances of "non-biological" social science. However, Pitirim Sorokin in Contemporary Sociological Theories in 1927 concluded that:

> "The greater and more accurate are the findings of biology, the more accurate are going to be the biological interpretations of social phenomena, and the more powerful influence they are likely to exert on sociology in the future."[11]

The central question is: do we now have that "greater and more accurate" data within biology on which can be based a biological view of man? It has been the effort and argument of such evolutionary behaviorists such as Tiger, Fox, Lorenz, Goodall, Hass, Simpson, Mayr, Ardrey, Morris, Wynn-Edwards, Muller and numerous others that the biological or evolutionary framework is now solid enough to supply a most powerful and unifying influence to the social sciences.

In spite of the additional data of synthetic theories of zoologists, only in few places have biological inroads penetrated the methodological array of the strong traditions of sociology and anthropology. Classical sociology has always distinguished between "human action" and social action. This separation presumes a fundamental difference between "biological" and socially "learned" behavior. This attitude shows a

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11. Pitirim Sorokin, Contemporary Sociological Theories, New York, Harper, 1927, p. 355.

rejection of the evolutionary behaviorists' hypothesis that the instinct-learning dichotomy is misunderstood and scientifically paralyzing. In a true-false question which appears in the teacher's handbook for an introductory sociology text it is stated as true that "One quite certain principle of sociology is that very little, if any, human behavior is inherited."[12] Furthermore, Michael Bantan has stated that "sociological problems are independent of biological problems."[13] Further demonstration of how far sociologists had drifted away from the evolutionary paradigm was demonstrated in a survey reported by M. Popovich[14] which showed that out of thirty leading American sociologists nobody said that the study of the biological factors in social behavior is of significance. Indeed, students of sociology in the United States often take minor courses in mathematics, psychology, etc., and often no biology.[15]

However, anthropology is much different as compared to sociology. Significant research by physical anthropology concerning human phylogeny and early human social life lead to a very broad acceptance of the idea that the study of the historical evolution of man and behavior is vital and

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12. Earl H. Bell and Sirjamaki, John, Instructor's Manual to Accompany Social Foundation of Human Behavior (2nd edition), Harper and Row, New York, 1965, p. 5.

13. Michael Banton (ed.), Darwin and the Study of Society, Quadrangle Books, Chicago, 1961, p. 178.

14. Mihailo Popovich, "What the American Sociologists Think About Their Science and Its Problems," American Sociologist, May, 1966, Volume 2, p. 134.

15. Lionel Tiger, p. 16.

possible.[16,17,18] Research with primates in natural and controlled settings have fantastically mushroomed in the last decade. Many gains have been made revealing the significance of learning and culture in causing differences of behavior and social structure in primates of the same species. The late-coming realization that animals have "culture" just as humans have "instinct" has enlarged the perspectives of both anthropologists and biologists.

Levi-Strauss[19] has emphasized the importance of basing the framework of social anthropology on the biological nature of the creature. Likewise, Jean Piaget[20], in his statement to the Plenary Session of the International Sociological Congress, indicated the importance of the biological orientation in helping social scientists to determine within what range of possibilities the human being operates.

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16. Irven Devore, Primate Behavior:Field Studies of Monkeys and Apes, New York, Holt, Rinehart and Winston, 1965.

17. S. L. Washburn (ed.), The Social Life of Early Man, Chicago, Aldine Books, 1961.

18. F.C. Howell and F. Bourliere (ed.), African Ecology and Human Evolution, Chicago, Aldine Books, 1964.

19. Claude Levi-Strauss, "The Scope of Anthropology," Current Anthropology, 1966, Volume 7, p. 116.

20. Jean Piaget, "Le Probleme des Mechanismes Commune sans les Sciences de L'Homme," Transaction of the Sixth World Congress of Sociology, Volume 1, International Socialogical Assoc., Geneva, 1966.

It is the contention here that the traditional concept of man as an unprogrammed and also pretty much "non-animal" just cannot be viewed as tenable in view of the advances within the different branches of science. The time has come for the evolutionary paradigm to be adopted as a genuine tool of explanation and prediction in all human related areas.

While commenting on the implications of evolutionary biology Tiger[21] has stated that it would be important for political scientists to attempt to find out if man is inherently hierarchical or not. It has been said for hundreds of years since the time of Aristotle that man is by nature a political animal, but the nearly sole area of study has been on the meaning and form of "political" and the "by-nature" has not really been examined too much. It is vitally necessary for the understanding and prediction of the behavior of animals to know as exactly as possible what are the parameters of their social behavior. In theory anyway there is no sound reason for political science students not to engage in the study of the politics of other animals. The comparative data and broadening of horizons which undoubtedly would follow this study are quite useful. Tiger contends that with the aid of contrasting and comparable information concerning other species, such research may evolve some cross-cultural generalizations about political behaviors. These would be quite helpful to political scientists desiring to develop forms of political analysis which won't be culture-

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21. Lionel Tiger, p. 22.

bound and which may offer predictive potential. It may be also useful to determine if biological sex is a constant influence on human political systems in the manner that it is in numerous other primate species. Unfortunately, because political scientists have not been active in biological questions, there are very meager cross-cultural studies of male-female differences in political behavior with the noted exception of differences in voting pattern.

There are also ways in which a knowledge of evolutionary theory can aid the social sciences. The important discovery that primates likewise develop cultural forms in addition to species specific "programmed" behavior may prove to be as significant to sociologists as the Hawthorn reports were for economists. The Hawthorn studies found that industrial workers reacted not only to material incentives (piece work) but also to the style and content of the managerial approach. The so called "rational man" of economics was shown to be a gross simplification.

If future cross-cultural research demonstrates that males and females differ significantly not only in reproductive behavior but in other types of behavior this would cause important consequences for the hypotheses about social behavior which are primarily concerned with explaining the structure and process of social systems only in a social framework. Even though general sociological theory is structurally receptive to the input of biological facts such assimilation has been too slow in occurrence to have any great importance to the discipline. For even though one of the biologically

programmed traits of man is to be flexible or "plastic" this does not say enough. It is vital to know to what degree, when and most importantly why. And the why questions are dealt with most effectively by evolutionary mechanisms.

Furthermore, since the investigation of man's current behavior is directly tied to the development of hypotheses about evolution it is really the obligation of authentic sociologists, psychologists, or any other people working in the areas of understanding human behavior to direct their data to the evolutionary framework. For as the evolutionary paradigm becomes more firmly established it should be actively embraced so that the benefits of sociological (or whatever disciplines are concerned) data can be put to its best use. August Comte, the father of sociology, once said that sociology would not be a successful discipline until it could deal with animal societies.

It must be finally realized that to be a proficient sociologist, psychologist, educator, historian, political scientist, or biologist one must first be an evolutionist, for it is in evolutionary mechanics where all behavioral disciplines discover their unifying theme.

During the course of this paper glimpses have been taken at some very general characteristics of social structures and processes that appear consistent for nearly all human societies. These have been viewed as end products of the evolution of patterns of social behavior for the human species. From these common characteristics that we share with our evolutionary relatives

the consequences for the biology of behavior that developed from the hunting revolution to the development of modern "civilized" man have been considered. It was seen that the ancient primate brain did not disappear but was enlarged and complemented by the hunting forebrain. The final product is an animal that needs, in fact, demands certain stimuli and one that gives out definite behavioral manifestations. What I have attempted is to focus on some of these basic imputs and outputs within various cultural contents especially within the western-technological society.

In viewing the millions of years of our hunting evolution it was seen that some of the fundamental needs which evolved into our basic design were:

> needs for space to move in, for a share of the communal kill; for participation in the predatory activity of the whole group; for a chance to rise in status through merit; for an opportunity to take risks; for the means to make deals and alliances; for exploration and novelty when young; for a sense of security derived from close association with the mother; for education geared to the realities of the life cycle; for accurate knowledge of the environment; for a chance to be brave and prove oneself; for a place at the triumph feast; for an acknowledgement of individual worth; for children and caring for them and the protection and security that accompany this; for recreation and free use of the imagination; for intense need to contribute with dignity to the community of which one is part.[22]

However, equally natural for man is for him to create hierarchies, to try to dominate or coerce other people, to depend on violence, to connive and to scheme, to seduce and to exploit, etc. Maybe man would be happier if it were possible to make a Utopian return to the simple hunting existence. But this is out of the question. The world has too many people now for such

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22. Lionel Tiger and Robin Fox, p. 238.

a return. Recent and future communities will have to continue to deal with the tension between the fundamental needs of a hunting primate and the situation that it has generated for itself. It seems hard to picture human society without violence, selfishness, oppression and injustice. These are as integral a part of human life as their opposites - love, altruism, and fair dealing.[23]

The insights acquired by an evolutionary paradigm do not propose to lead man to his pie in the sky Utopia. In fact, predictions of many current behavioral trends can only be discouraging. However, it is the contention here that the development of the evolutionary perspective will leave mankind less helpless in the long run. With this paradigm we should be able to evaluate what the individual or collective problems actually are and how to handle them now with a knowledge of how they originally came to be problems; that is, how they place a strain on man's basic design.

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23. Op. cit. p. 238-239.

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