

ENCYCLOPEDIA OF LIFE SUPPORT SYSTEMS

Contribution

6.4.6.  
-----

**SOCIAL PROBLEM DIAGNOSIS:  
A Sociopathology Identification Model**

By

*Paris Arnopoulos*

Concordia University, Montreal, Canada

Keywords

Anatomy, community, culture, data, deontology, diagnosis, dogma, ecology, economy, energy, epistemology, ethics, existence, function, ideology, information, matter, method, model, nature, norm, pathology, physiology, polity, power, problem, reality, semiology, society, sociomass, sociophysics, space, symptom, system, taxonomy, time, value.

# **SOCIAL PROBLEM DIAGNOSIS**

## **A Sociopathology Identification Model**

### ABSTRACT

Now as never before, the future of life on earth is seriously in doubt because of the worsening global problematic which threatens human survival. The haphazard crisis management reaction to a plethora of problems, can only solve some by creating others. The question then is how can such crucial social problems be treated in a more systemic and systematic way.

The contemporary world is a very complex and chaotic system where the casual observer is deluged by diverse signals of disparate events usually transmitted through the mass media. The resulting information overload is confusing and overwhelming, therefore, it is difficult to decode and evaluate the significance of what is going on, let alone do anything rational about it..

This study attempts to contribute to a better interpretation and comprehension of social phenomena by developing a model of social problem identification. The enormity of this task however necessitates a delimitation of its scope and content to an abstract perception and conception of the human condition.

On the basis of work already done by this author in defining and classifying social problems based on a Theory of Sociophysics, the attempt here constructs a general diagnostic model and then exemplifies it to the contemporary world system by combining a formal protocol and a decision making program whose algorithm arrives at logical conclusion from given premises.

In doing so, this article includes an epistemology, axiology, semiology and pathology of social systems, as the necessary and sufficient components of sociodiagnostics. A successful construction of such diagnosis is a prerequisite for social anagnosis, prognosis and eventual therapy. With this ultimate purpose in mind, this essay is a small step on the long road towards more sustainable life support systems.

***P. J. Arnopoulos,***

Montreal, Canada  
Spring 2000.

## TABLE OF CONTENTS

GLOSSARY: Terms; Acronyms; Concepts.

INTRODUCTION: Problem; Purview; Purpose.

1. SOCIOPHYSIC ANATOMY: SUM
  - 1.1. Syntax
    - 1.1.1. Frames: SET
    - 1.1.2. Aspects: MEF
    - 1.1.3. Spheres: ESE
  - 1.2. System
    - 1.2.1. Sociomass HAD
    - 1.2.2. Sociomorals LEF
    - 1.2.3. Sociosectors PEC
  - 1.3. Symptom
    - 1.3.1. Criteria
    - 1.3.2. Indices
    - 1.3.3. Taxonomy
2. SOCIOPROBLEMATIC PATHOLOGY: ITO
  - 2.1. Cognitive Inputs
    - 2.1.1. Epistemology
    - 2.1.2. Deontology
    - 2.1.3. Physiology
  - 2.2. Contemplative Conversion
    - 2.2.1. Functions
    - 2.2.2. Opinions
    - 2.1.3. Traditions
  - 2.3. Conceptual Output
    - 2.3.1. Problemology
    - 2.3.2. Pathology
    - 2.3.3. Methodology
3. SOCIODIAGNOSTIC METHODOLOGY: SAS
  - 3.1. Collective Condition
    - 3.1.1. Semiology
    - 3.1.2. Data
    - 3.1.3. Semiosis
  - 3.2. Human Values
    - 3.2.1. Ideology
    - 3.2.2. Dogma
    - 3.2.3. Axiosis
  - 3.3. Social Problems
    - 3.3.1. Pathology
    - 3.3.2. Symptoms
    - 3.3.3. Syntaxis
    - 3.3.4.

CONCLUSION: Summary; Perspective; Projection.

BIBLIOGRAPHY: Selected Background Sources.

## Glossary

Axiosis: normalization of relevant symptoms or selection of significant norms.  
Community: reproductive, cognitive, interactive, or symbolic structure of social system.  
Culture: traditional principles and values reflecting the way of life of a human society.  
CADM: Coda-Activity-Data-Memory, requisite components of Artificial Intelligence.  
DAP: Diagnosis-Anagnosis-Prognosis, the three phases of the gnostic or epistemologic process.  
Diagnosis: method or result of examining systems to discover their problems or abnormalities.  
Economy: extractive, productive, convertive, or metabolic infrastructure of social system.  
Ecosphere: natural periphery as the external environment of planet Earth.  
Egosphere: personal perspective as the egocentric core of individual human nurture.  
ERP: Empiricism-Rationalism-Pragmatism, main epistemologic ideologies of human cognition.  
ESE: Ego-Socio-Eco-spheres, concentric circles representation of universe of discourse.  
HAD: Humans-Artifacts-Domestics, constituting the sociomass of civilization.  
HDI: Human Development Index, a quantitative measure of QoL developed by UNDP.  
ITO: Input-Transformation-Output, conversion process of various factors through a system.  
LARK: Language-Art-Religion-Kinship, the four anthropological variables of human culture.  
LEF: Liberty-Equality-Fraternity, generic ideological triad of core social values.  
MEF: Matter-Energy-Form, substantive and essential components of reality.  
OSC: Objective-Subjective-Collective, criteria distinguishing normal from abnormal conditions.  
Pathology: scientific study of organic diseases or systemic malfunctions and abnormalities  
PEC: Polity-Economy-Community, principal sectors of social system.  
PIM: Problem-Identification-Model, a systematic method to define social problems.  
Polity: regulative, legislative, executive, or cybernetic superstructure of social system.  
Problem: disturbing situation of an observer or dysfunctional condition of a system.  
SAS: Semiosis-Axiosis-Syntaxis, the three phases of the Diagnostic process.  
Semiosis: perception of interesting signals or collection of indicative symptoms.  
SET: Space-Existence-Time, conceptual framework of reality parametric configuration.  
Society: system of structures and functions relating people, their creations and possessions.  
Sociomass: the sum total of the quantitative weight of all the material substance of society.  
Sociophysics: theory emphasizing the general physiological foundations of social systems.  
Sociosphere: a social system as the collective culture of the human species.  
SoL: Standard of Living, economic measure of average income level of society.  
SUM: System Unification Model of Sociophysics related to General Systems Theory.  
Symptom: index of manifest appearance or epiphenomenon of a problem.  
Syntaxis: determination of main problem or decision defining a critical disease.  
System: set (interrelated group or interacting collection) of units (members, components).  
TAS: Thesis-Antithesis-Synthesis, transformation sequence of the dialectical process.  
TIP: Triadic-Interface-Paradigm, nature-culture-nurture metaphors in Sociophysics.  
QoL: Quality of Life, holistic index of a sustainable social condition.  
UNDP: United Nations Development Program, publishing annual Human Development Report.  
W5: what-where-when-who-why, journalistic questions describing the parameters of a subject.  
WHO: World Health Organization, a specialized agency of the United Nations.

## Summary

In view of the complex problems facing the contemporary world and the underdeveloped capacity of humanity to handle them, the purpose of this study is to present a general sociopathological identification model, exemplified by a preliminary diagnosis of global problems. The epistemology and methodology for this task is provided by the Triadic Paradigm and System Unification Model of the recent Theory of Sociophysics.

Accordingly, this study first makes a systematic anatomy of the **social** system. This operation defines and clarifies the basic notions of its conceptual framework, revolving around a SET (space-existence-time) configuration as the primordial parameters of reality. Within it emanate concentric ESE (eco-socio-ego) spheres, along with their MEF (matter-energy-form) components. With the above structural aspects of social systems, it then looks into their manifest appearance. In this respect, the significant phenomena of society can be observed and measured, so as to standardize them for comparative purposes. Since the ultimate search here is for possible social problems, their symptoms or manifestations may thus be recognized.

After physiology of society, comes the turn of pathology. This means studying **problems**, defined as “disturbing situations or dysfunctional conditions,” which are unusual events drawing attention to themselves and begging for a response. Although problems may be psychological, physiological, social science is primarily concerned with social problems which may be dealt by constructing a Problem-Identification Model which follows an input-transform-output process thereby distinguishing problematic phenomena.

Finally, having presented the context of our physiology and content of its pathology, the study concentrates on the concept of diagnostic methodology. Timely **diagnosis** uncovers the early warning symptoms of problems and prevents their catastrophic deterioration. As both means and end, diagnosis follows certain definite steps to identify disturbing symptoms, so that they may be dealt with before their damage is irreparable. Diagnosis thus combines an inductive-deductive decision-making process, as well as an empirical-rational final conclusion of general applicability.

On the basis of this model, the tentative diagnosis here suggests that the world suffers from a complex syndrome of interrelated ailments. Its problems range from economic (capitalism, commercialism, consumerism) and social (elitism, ethnocentrism, urbanism), to political (statism, militarism, terrorism) and cultural (imperialism, materialism, nationalism). Some of these problems are found at their worst in some regions and sectors of the world system. In addition to these social problems, there are personal (alieny, apathy, anomy) and natural (pollution, depletion, entropy) maladies which complete the global pathological roster. These various diseases, alone and in combination, make the world a dysfunctional system, whose problems are so wide and deep as to constitute a global pandemic. Thus identified, defined and classified, this maldevelopment problematic, concludes this exemplary diagnosis as a preliminary test of the proffered model.

## Introduction

The present world is a very complex and chaotic system. Casual observers are deluged by diverse signals of disparate events, mostly transmitted through the mass media. The resulting information overload is confusing and overwhelming; therefore it is difficult to interpret and understand the significance of what is going on, let alone utilize its content for any intelligent plan of action.

The primary aim of this study is to contribute to a better translation or interpretation of social phenomena by relying on the Triadic Paradigm and System Unification Model of the recent Theory of Sociophysics. Within this overarching conceptual framework, we herein search for a scientific way to examine and determine the existential condition of contemporary social systems.

The method as well as the result of this examination to discover and determine problems or abnormalities is called “diagnosis”. This knowledge expanding process is a necessary requirement to determine the viability of all life support systems, including human societies. This article undertakes that task by presenting a sociodiagnostic model which considers the critical problems of the world, along with their ecologic and economic, cultural and political importance. The enormity of this project however, necessitates a delimitation of its scope and content by a high abstraction of its model and gross aggregation of its data. Consequently, the methodology used here is logico-deductive, viewing particular factual instances within the overall perspective of general theoretical premises, out of which certain conclusions follow as the final diagnosis.

Thereby, this paper is organized around a tridimensional frame. The first dimension elucidates the three words of the title in a systematic sequence of chapters on: Social Physiology; Problem Pathology; Diagnostic Methodology. Accordingly, it covers the physiologic context, problemologic content and methodologic concept of its subject-matter. The second dimension divides each chapter in three sections, following a syllogism of general contentions, specific conditions and operative conclusions. This construct can be tabulated in the following array which may also serve as a two-dimensional Table of Contents.

CHAPTERS / / SECTIONS	1.0. CONTEXT	2.0. CONTENT	3.0. CONCEPT
0.1. CONTENTION	1.1. Syntax	2.1. Cognition	3.1. Semiosis
0.2. CONDITION	1.2. System	2.2. Contemplation	3.2. Axiosis
0.3. CONCLUSION	1.3. Symptom	2.3. Conception	3.3. Synthesis

Finally, the third dimension juxtaposes the real versus ideal aspects of our subject and then tries to combine them dialectically, thus following a thesis-antithesis-synthesis format. Obviously, this third dimension cannot be easily illustrated here, but it should be kept in mind as we proceed systematically throughout the text.

## 1. ANATOMY OF SOCIOPHYSICS

Before tackling the problematic content of our subject, we should first have an idea of its physiologic context by performing an anatomy of the social system. This is best done by the Theory of Sociophysics, whose System Unification Model, we now summarize.

### 1.1. BASIC SYNTAX

Our approach begins by defining and clarifying the basic notions of its conceptual framework. This task is necessary as the foundation which supports more complex concepts. Illustrated in Diagram 1, the scheme here represents our universe of discourse, revolving around a SET (space-existence-time) configuration as the primordial parameter of our reality. Within it emanate the concentric ESE (eco-socio-ego) spheres, along with their MEF (matter-energy-form) components, as follow.

#### 1.1.1 SET Frames

Although SET implicitly underlines all realistic discussions, it is explicitly emphasized here as the fundamental premise of our perspective which involves:

- Space location: local (hundreds sqkm)-regional (thousands)-global (millions);
- Existence inclusion: light (thousands kg)-average (millions)-heavy (billions);
- Time duration: short (days)-medium (years)-long (decades).

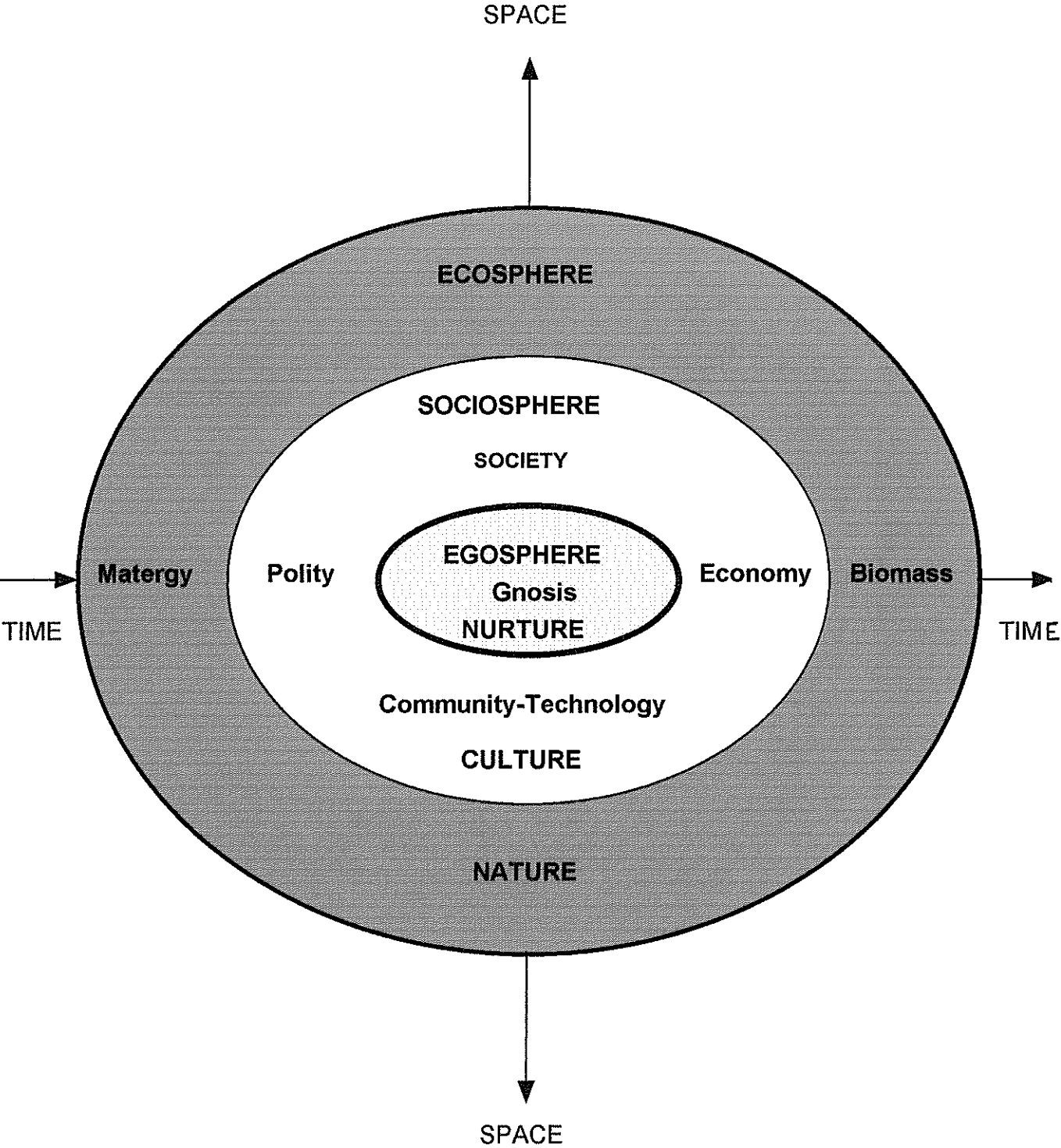
This SET firmament and its measurement is significant because human sense apparatus can distinguish objects or subjects in some places for certain periods. Attention is thus focused on extraordinary things, changing phenomena or fluctuating movements which register in our minds. Space (s) envelopes physical existence and delimits its extent by determining location, scale and distance. More specifically, topology and geography provide important aspects of space and significant variables of position and motion. This is especially so in geopolitics, where power is directly correlated to territorial imperatives and strategic configurations.

Along with space, time (t) forms our four-dimensional frame. As space measures distance between points time measures duration between events. So as geography compares concurrent positions, history follows succeeding periods. The difference, of course, is that unlike the perception of three-dimensional static space, time appears unidimensional and its arrow always flies from the past through the present into the future.

Combining space-time is the notion of motion. When some distance is covered in a certain time, we speak of displacement between two points. Utilizing a mathematical notation as the best shorthand and manipulative tool, we define the rate of motion as velocity:  $v=s/t$ , representing the ratio of distance divided by time. From Democritos and Heraclitos to Hobbes and Newton, natural philosophers thought that the essence of science was the study of bodies in motion. Accordingly, the idea of movement is fundamental in all dynamic systems.

This compound concept gives rise to the necessity of existence, because something must exist and move through space-time. For this reason, our ontology distinguishes between being and void; assuming that there is something rather than nothing and focusing on existence as our relevant substantive content.

-1-  
MULTIDIMENSIONAL  
REALITY





### 1.1.2 MEF Aspects

Our framework postulates the significant content of existence to be matter-energy-form. This MEF content of reality is closely interrelated and interacting within its SET context. It should thus be briefly explained here.

The primary attribute of matter is mass ( $m$ ). Having volume or displacement, it occupies exclusively a place for some time. Matter provides the concrete basis of reality and the stability of existence. Within the space-time field, material objects are of a certain size (micro-macro) and last for some time (ephemeral-epochal). Space is partly filled with matter which forms distinct objects. The quantity of material or number of bodies filling a given space is determined by the notion of density:  $d=m/s$ . The number of people living in a certain territory, for example, is of a particular density depending on the size of the population, divided by its land area.

Pure materialism, however, only explains one aspect of reality; energy ( $E$ ), defined as the ability to move or act ( $A$ ) in time:  $E=A/t$ , provides another. Accordingly, somebody has energy if it is able to do something. This ability depends on whether it applies to position or motion. Masses in high places possess great potential energy, just as bodies in rapid motion acquire much kinetic energy. Motion is thus a simple kind of action, as a result of which moving matter attains a certain momentum ( $q$ ) equal to an object's mass and velocity:  $q=mv$ , which with a bit of simple transposition means that  $E=qv$ .

Ever since Einstein's famous equation  $E=mc^2$ , matter and energy have become equivalent. Since one can be converted into the other, they may be considered as two sides of the same coin. Energy activates matter and makes things happen, thus complementing the static character of mass with its dynamic attribute. As elucidated later on, since energy is matter-in-motion, it becomes the source of work, force and ultimately power.

Finally, the third aspect of being is form or order. It is this aspect that gives matter its shapes and energy its symbols, thus infusing cosmos into chaos. Order informs patterns and processes, data and coda, systems and structures, thus gives meaning to things and events interpreted by the human mind. Although form per se is evanescent or immaterial, information is carried by matter-energy and translated by intelligence.

### 1.1.3 ESE Spheres

Our conceptual framework distinguishes three realms of existence. Using the above criteria, their classification consists in imagining three concentric spheres, grouping everything into an:

- Egosphere: a personal center as the egocentric core of individual nurture;
- Sociosphere: a social system as the collective culture of the human species;
- Ecosphere: a natural periphery as the external environment of planet Earth.

In this trispherical ESE model, both the subconscious and the supernatural worlds are ignored as unknown and mystic externalities beyond our epistemologic ability.

From such perspective, nature provides the outermost all-inclusive environment of reality, represented by an outermost circle. It is the realm of hard facts and natural laws or the domain of divine order and chaos independent from and indifferent to human dictates or desires. As studied by physics, chemistry, biology and ecology, this contextual domain frames our universe and sets the outer limits of human knowledge.

At the other end of this spectrum, at the innermost center of our concerns, is the nurture of human beings with its internal noosphere of self-conscious thoughts and ideas. We are not here concerned with those human aspects reflected in the arts and humanities, but rather with the cognitive aspects of the mind related to gnosis. Any subconscious domain in the dark inner world of the psyche is likewise beyond our purview.

Between the eco and egospheres lies a sociosphere of human culture. In it, the units of human action range from the smallest (minds, individuals) to the largest (continents, civilizations), via the middle (tribes, nations). Although society cuts through the realms of acts, facts and words; it is primarily concerned with interpersonal relations and only marginally with extrapersonal or intrapersonal ones.

## 1.2. SYSTEMS

Social systems possess both quantitative and qualitative aspects which ultimately make them more than the sum of their parts. This complexity emerges out of multiple interrelations of various simple components interacting according to basic rules. As open, dynamic and spontaneous self-organizing systems, organisms or societies require certain qualitative and quantitative descriptions involving intangible attributes or subtle impressionistic perceptions of ethic and esthetic traits.

### 1.2.1 Sociomass: HAD

The first and foremost determinants of real systems are structures and functions. We thereby define society as a set of structures and functions relating people, their creations and possessions. This definition of a social system includes both mental and material aspects of human existence in space-time. The physical mass of a social system may thus be shown as a sum of these three aggregates:  $ms = mh + ma + md$ , where:  $h$ =humans (people);  $a$ =artifacts (tools+goods);  $d$ =domestics (plants+animals).

As the weight of organisms is a significant measure of their condition, so the mass of societies indicate their gross size, both absolutely and relatively. More specifically, the ratio of people to goods and tools reflects social wealth and industrialization, whereas that of people to space shows social density and urbanity.

Other similar measures of sociomass serve as normative parameters upon which social health as well as wealth can be established. The physical hygiene of a society may be understood as a sum total of the health of its constituents. Along with longitudinal rates, such as mortality and longevity, or comparative measures such as national rankings, these quantities form the first and simplest indicators of social conditions.

### 1.2.2. Sociomorals: LEF

Besides their material aspects, social systems also possess mental attributes creating cultures or ways of life consisting of LARK (language, art, religion, kinship). These produce various theologies and ideologies serving as ideal norms for popular beliefs and behaviors. Setting up standards and making judgments seems to be part of human nature, distinguishing between right and wrong, true and false, good and bad. This process of evaluation and value possession is then inherent in the human condition and the fact-value dichotomy confirms this innate tendency.

Once we accept a human value-instinct, the question becomes whether there are any universal pan-human values. Ethology poses three main sources of generally admitted normative values:

- Natural: Physiologic imperatives and biologic norms, based on existential reality;
- Rational: Logical deductions and scientific inductions, created in the human mind;
- Cultural: Traditional principles and legal rules, developed by human societies.

Different combinations of these standards set the parameters of acceptable behavior in any society and spell out its rules of the game. In the world at large, natural laws, international customs and dominant paradigms define the bulk of general standards and periodic protocols.

Natural Law proponents assert that there are certain values based on natural tendencies that can be discovered by human reason. From Aristotelian biology and Thomistic theology to Hobbesian physics and Marxist economics, the Natural Law school proposed preservation, procreation and actualization as such organic values, shared by all living beings, including humans. Opponents of Rationalism or Naturalism either deny the existence of absolute standards altogether or decouple their necessity from our desirability. In its Lockian declaration: “ought” does not follow from “is”; therefore norms can only be relative, based on either cultural or personal preferences.

Yet, although they differ in many details, these norms can be reduced to their lowest common denominator that sets standards of human thought and action in all societies. These may be described in generic terms as the famous Liberty-Equality-Fraternity triad. So much so that sociomorphals may be identified as their LEF function:  $S=f(l,e,f)$ , depending on the particular combination of individualism, egalitarianism and collectivism they promote. Accordingly, an emphasis upon each of these values determines the normative priorities of various societies.

Herein, the most significant variables relate to social morality. As guides in social relations and actions, ethics moderate between natural egoistic tendencies of organisms and cultural altruistic ideals of humans. In this respect, social systems differ in some degree between their individualism and collectivism or liberalism and communism, as they try various mixtures of private and public control. These different moral standards determine whether particular social conditions are considered normal or not. Obviously, a liberal-individualist ideology tolerates different thresholds, where social problems begin, than a social-communist one. Similar objective social indices therefore will be subjectively judged as normal in certain regimes and abnormal in others.

In this wide range between the polar extremes of egoism and altruism, global moral standards exist as a compromise somewhere in the middle. Whether this moderate mixture becomes a golden mean depends on the proper development of the world system as a global society. Until then, there will be different opinions as to what indices define a healthy system. Be that as it may, as well taken as both sides are, at this juncture of rapid globalization, the relativist position must necessarily rest upon a globalist one. We should thus use an eclectic selection of salient points from various sources to derive the most general, reasonable and useful norms constituting our fundamental values.

### 1.2.3 Sociosectors: PEC

All human societies combine the above duality as moral-material systems. The particular mode of production, distribution and consumption for matter, energy and information in different societies indicates their physical-ethical condition based on the standards enunciated above. As studied by social

science, society is divided into three main functional sectors where love, gain and fear interact. An anatomy of social systems then may be best described as composed of the:

- Polity: regulative, legislative, executive, or cybernetic superstructure;
- Economy: extractive, productive, convertive, or metabolic infrastructure;
- Community: reproductive, cognitive, emotive, or symbolic structure.

These sectors can be studied in either chronological or topological perspective. Here we are primarily concerned with comparative sociological aspects, thereby marginalizing historical and geographical ones. Describing these standards according to their structural-functional specificity, we can then speak of political elitism, economic capitalism and cultural pluralism as particular sectoral combinations of social systems. Of course, each of these sectors may be further sub-divided into smaller ones, such as the primary, secondary and tertiary aspects of the economy; the religious, educational and artistic aspects of the community; or the legislative, executive and judicial aspects of the polity. In this way, social problems can be localized in particular institutional organs or functional orders, rather than systems as a whole.

### 1.3. SYMPTOMS

With the above structural aspects of social systems, the point now is to look into their manifest appearance. In this respect, we should be able to observe and measure the significant phenomena of society, so as to standardize them for comparative purposes. Since we are ultimately searching for possible social problems, we must first recognize their symptoms or manifestations.

#### 1.3.1. Criteria

The SET parameters combined with the MEF measures give the classical identification of objects by substance, position and velocity. In the case of social systems, substance is their MEF, position is spatial location and motion is nomadic or sedentary. Since by now most societies are geographically fixed, their most significant variables are MEF attributes and internal motion.

Social systems can be measured as to their quantity and appraised as to their quality, since they have both substance and essence or mass and form. These variables indicate the system's consistency, activity and potency, reflected in:

- Statics: persistent, legal, spatial, hierarchic, customary and traditional institutions;
- Dynamics: functional, procedural, historical, chronologic and temporal operations;
- Dialectics: relational, interactive, conflictual, analytic and alternate fluctuations.

According to these perspectives, symptoms can be measured both absolutely and relatively, comparatively or diachronically. In any case, statistical measures are the best method to represent aggregates, thus represent the most significant data in social science. That is why societies assign expert organs to gather statistical information about collective activities as essential measures for determining social conditions.

The ultimate purpose of all these quantitative measures is to establish qualitative standards. Human Quality of Life (QoL) indicators have thus become general reflections of overall social welfare which includes a sufficiently high social production and consumption measured by their Standard of Living (SoL). On that basis, any sensible definition of QoL must contain such measurable indices as longevity and mortality, nutrition and education, health and wealth.

Global correlation between wealth generation (SoL) and energy consumption (kcal) is almost linear (> 0.9). In order to generate \$20,000 GNP/cap, for example, wealthy societies consumed 300GJ/cap of primary energy, compared to the \$200 and 3GJ of poor societies. Yet, there is little connection between the subjective personal satisfaction derived from QoL and the objective socioeconomic indicators of production or consumption by SoL. Beyond a certain point, few intangible ingredients of QoL require high energy inputs by SoL, so diminishing returns apply both to social utility and welfare. An effective way to find the optimal energy needs for QoL is to plot energy consumption with life expectancy. In such correlation the inflection point is situated between 50-100 GJ/cap and 75 years. Before this point small energy increments make a great difference in longevity, whereas beyond it almost none. A similar curve is produced by correlating energy and education, as well as other variables.

### 1.3.2. Indices

Medicine recognizes three most significant indices of organic conditions:

- Weight: quality & quantity of material substance in total mass & its distributed amount;
- Temperature: degree of heat level in average internal molecular activity;
- Pressure: circulation of force flow per unit time in systolic & diastolic pulses.

These indices could be adapted to social systems by measuring their standard parametric quantities or state variables as:

- Volume (Matter): content amount, space occupation, mass density, specific weight;
- Heat (Energy): activity level, temperature degree, potential dynamic, random motion;
- Power (Force): systemic strength, environmental pressure, directed thrust.

If such standards become accepted for social, as there are for organic systems, one may then measure how close actual performances come to them. In that case, any deviation from these bench marks would mean some degree of abnormality.

These indices should be measured in their various aspects, best described by the well-known W5 questionnaire:

- What is involved? dimensions of case in question and its syndromes;
- Where is it located? geographic position and epicenter of problem;
- When is it timed? chronologic period, duration or length of term;
- Who is affected? people under the influence and environmental conditions;
- Why is it measured? purpose of exercise and possible by-products.

To those basic aspects, of course, one can add some more, depending on the details required or afforded. Questions of how the indices are to be measured and how much they will cost, as well as other queries may be wanted or needed to complete one's investigation. Here, we can only give a glance of the central indices which could or should comprise global norms. By their very nature such norms must be rooted on the evolutionary viability and maturity of humanity, rather than on idealized harmony of ecological coexistence or wishful thinking of perfect models.

### 1.3.3. Taxonomy

In order to exemplify how vital social statistics could be organized, we have tabulated them by intersecting their social aspects and sectors. The first PEC dimension contains the usual monopolies of sovereign states in:

-Security: external defense, internal law & order, civil services & military armed forces;  
 -Currency: economic interests & functions; money & coinage, taxes & duties;  
 -Nationality: exclusive ideals & values, defining customs & traditions, ethnic mores & morals.  
 Each of these sectors exhibits certain symptoms that may be classified in a second dimension containing their static, dynamic and dialectic aspects, examples of which are given therein. As we search for a semiology to describe and characterize social systems, we look for significant measures which indicate their state. By identifying these indices, we could then try to determine their normal ranges and thereby recognize when they go beyond them to abnormality.

Systemic conditions should be measured by both capital stocks and transient flows, whereas present measures emphasize flows and ignore stocks. Such well-known indices as GDP, income, taxes, etc, may be good measures of economic flows, but leave out large areas of social stability and activity. Even a basic economic index as the GNP is a very controversial measure because of its doubtful significance. Without entering this debate, we can accept the usefulness of such index, but like many others, only for a well-defined scope of economic production. Beyond that, we need many different indices to measure various other social structures and functions. In our scheme, these indices can be organized around the three significant poles that best measure the state of a system: i.e. mass or volume, force or pressure and energy or temperature. These three are the classic scientific indices for all physical systems, thus they should also measure at least the basic physical aspects of society.

Index Classification Matrix  
 [Economic-Social-Political x Static-Dynamic-Dialectic]

	Static	Dynamic	Dialectic
ASPECTS	Structural Volume Density Mass Space	Functional Pressure Velocity Force Time	Relational Temperature Activity Energy Motion
SECTORS	Stock	Flow	Share
Economy Property Metabolic Wealth	Capital Plant Savings	Production GNP Investment	Distribution Gini Market
Society Community Informatic Health	Population Demography Shelter	Reproduction Technology Public Opinion	Consumption Communication Circulation
Polity Security Cybernetic Stealth	Government Constitution Support	Decision Regulation Demand	Participation Organization Debate

On this basis, as the table illustrates, the GNP becomes a sub-index of economic pressure because it merely measures the strength of a metabolic (ingestion-digestion-excretion) function of society in producing goods and services. Similarly, saving accounts measure the accumulated economic surplus of the system and the Gini Index its distributed heat or temperature; keeping in mind that all these are specified in their spatial (local, regional, global) and temporal (ephemeric, episodic, chronic) attributes.

Of course, economic indices are much more accurate and measurable than social or political ones, thus skewing our knowledge on the basis of partial information. Yet it would not be so difficult to measure social mass or weight, by totaling the humans plus artifacts and possessions. Such indices and ratios would give a better idea of the degree of industrialization of a society, its material wealth, density and other useful measures. This exemplary index presentation, elucidation and classification, completes the general anatomical sociophysics of our subject, thus making it possible to move on to its particular pathological problematics in the next chapter.

## 2. PATHOLOGY OF SOCIOPROBLEMATICS

After the physiology of society, it is now time to consider its pathology. To do so, we need to study problems, defined as “disturbing situations or dysfunctional conditions,” that are unusual events drawing attention to themselves and begging for a response. Although problems may be psychological, physiological, or sociological, as social scientists, we are primarily concerned with the last type.

Defined as such, we identify social problems by constructing a Problem-Identification Model (PIM) which follows an input-transform-output (ITO) process to distinguish problematic phenomena. The synoptic Diagram 2 illustrates the main structure and process of this model. This chapter discusses the model by following its corresponding elements sequentially from top to bottom, as each section looks respectively into problem cognition, contemplation and conceptualization.

### 2.1. COGNITIVE INPUTS

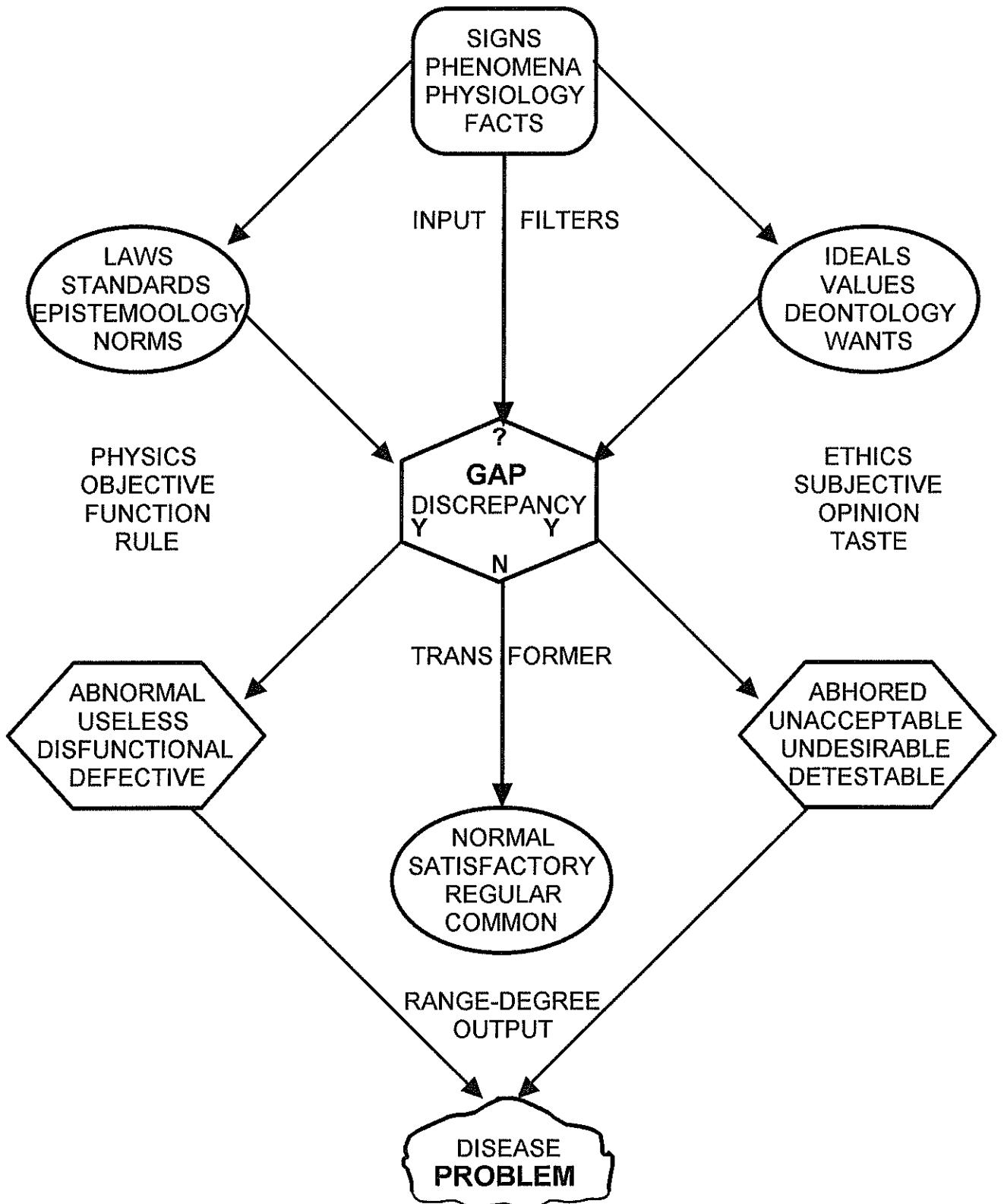
Since accurate observation and correct interpretation are the primary steps of the scientific method, we begin with an empirical receptivity and methodical sensitivity that recognizes the existence of problems by entering the first phase of the PIM algorithm selecting and dichotomizing perceived phenomena into problematic or not. The question here is how do we distinguish the plethora of phenomena directed or mediated from around us. Many disparate signals registering on human senses compete for attention and action. In order to manage such empirical bombardment, we must have a reality test separating critical from trivial ones. To do so, we rely upon the provisions of epistemology and deontology.

#### 2.1.1. Epistemology

Any discussion of human cognition raises the question of how we know “reality”. From traditional theologic sources of knowledge to modern scientific ones, we have gone through many epistemologic beliefs. With this surfeit of choices, we selected three most likely sources:

- Empiricism: belief in scientific treatment of phenomenal evidence by sensitive observing, measuring and testing, so that truth corresponds with reality.
- Rationalism: overall belief on human reason as best way of discovering truth, understanding and explaining reality, so that validity is consistent with rules.

-2-  
PROBLEM  
IDENTIFICATION  
MODEL





-Pragmatism: basic skepticism of absolute principles, tentative or uncertain nature in all knowledge and falsifiability of proof, so that opinion concords with functionality.

On this ERP basis we assume that knowledge is possible by a combination of sense perceptions, logical conceptions and pragmatic propositions. This attitude keeps an open mind to different evidence criteria and reality tests, without considering any one as conclusive or final. All it assumes is that the proper mixture of these fact finding sources provides an optimal recognition and appreciation of reality. It should be kept in mind that knowledge can best be understood as a system of meaningful information. As such, it should be organized according to some taxonomic scheme which classifies a variety of facts or ideas in a simple logical manner. To do so requires a model corresponding with reality, without being identical with it. In social systems, these deterministic standards are given by various laws and norms, authoritatively set out as cononic texts or paradigmatic codes and accepted by the established scientific community. Accordingly, perceived events fall into acts of God, nature of things or law of the land; otherwise they are mistaken or ignored.

### 2.1.2. Deontology

Apart from its objective external inputs, knowledge is determined by a given subjective internal configuration and relative position, because sentient beings conceive reality from a particular self-centered perspective. As the Aristotelian dichotomy of physis and techne puts anthropos in the center, we classify inputs from our trispheric point of view: personal-psychological; collective-sociological; natural-biological. Beyond the material body of each organism, the inner world of man consists of the noosphere of one's private thoughts and feelings: personality; psychology; idiosyncrasy.

Above the reptilian brain, evolution has developed the mammalian brain, divided into the right and left hemispheres. Thus in addition to the basic instincts of all animals, humans also possess the self-consciousness of introspection, emotion and reason. These higher faculties enabled humanity to rise above its natural animal origins and create culture. This development was made possible by both individual and collective efforts that evolved personality and society in parallel stages. Thus man emerged as both a natural and social animal, partaking of both realms.

That fundamentally egocentric model is attenuated by human socialization which adds some altruistic traits to its basic animal egoism. Social relationships involve moral considerations, thus raising society above the purely brutish natural laws of the jungle. Since man is defined by sociability, as well as rationality and emotivity, we herein concentrate on social relationships. Whether set by secular ideals or religious faiths, these relations are determined by the mores and morals of traditional social values. The signs of external reality then are accepted or rejected according to the criteria of common sense, church dogma or party line.

### 2.1.3. Physiology

On the basis of the above epistemologic and deontologic filters, we can now present our physiology by outlining the fundamental givens that characterize reality. These correspond to a MEF triad, showing both sides of the matter-energy coin, as well as its orderly form. Our social reality then consists of matter-energy and form in various combinations or permutations. Physical reality intrudes upon us by its material substance and cannot be ignored. Similarly, the obverse of the material coin is the energy animating

actions and events. Life is a particular combination of matter and energy with emerging metabolic, genetic and informatic functions.

Unlike the transportation of matter and energy by physical displacement, the communication of information involves translating signals and interpreting symbols by mental processes. In this respect humans have gone further down the evolutionary road in the ability to derive meaning out of complex signs and ultimately to develop a reflexive introspection of conscience and self-consciousness. Accordingly, we accept the impersonal determinism and fortuitous randomness of reality, as well as the intentional voluntarism of humanity. This combination of natural and cultural factors allows for knowledge of facts and responsibility of acts, both of which are essential for social diagnosis.

## 2.2. CONTEMPLATIVE CONVERSION

Given the above tools, human contemplation contrasts factual observation against functional operation and ideal imagination. In either case similarities or differences are compared and gaps between them noted and judged. In general, a gap or inconsistency indicates a problem which may be either: quantitative (too much or too little) or qualitative (too bad or too good). Something that diverges from its norm in some way is problematic, the wider the gap, the greater the problem. As such, a problem may be too much too soon or too little too late and even too good or not good enough.

Establishing and following norms is then the critical requisite for distinguishing between normal and abnormal, hence identifying a problem. Whether implicit or explicit, certain criteria underlie decisions in such matters. Following Galileo's distinction between primary (mathematical- objective) and secondary (human-subjective) properties of reality, our criteria are classified as:

- Objective-Natural: systemic structural-functional; mechanic-organic systems;
- Subjective-Personal: idiosyncratic desirable-preferable; random-human tastes;
- Collective-Social: democratic customary-traditional; ideologic-theologic opinions.

### 2.2.1. Objective Functions

Objectively speaking, something is considered normal if it falls within preestablished statistical norms. These norms are determined either per definition or per operation. A system is normal when it meets the specifications of its construction and operates in its optimal capacity, otherwise it is abnormal and problematic. If something is badly made, it is defective, improper or useless. If it does not work well, it is malfunctioning in a suboptimal way or it is completely unworkable. In any case, if such gap exists between some normative standard and some measured appearance or performance, a structural fault or functional problem arises.

Medical science classifies health problems or organic illnesses as:

- Infection: external parasitic agents invading an organism, causing disease;
- Dysfunction: internal malfunctioning organs of a process, causing illness;
- Mutilation: missing structural parts of a system, causing infirmity.

Social science could use a similar typology to classify its problems. In that vein, for example, the Hern Hypothesis compares the four symptoms of malignant neoplasm tumors of cancer with the impact of human culture to planetary nature:

- uncontrolled rapid and random growth of some components of the system;
- invasion, infection and destruction of the adjoining life forms;

- metastasis or colonization to far away places by secondary tumors;
- homogenization of individual components into an undifferentiated mass.

Two of these four attributes suffice to diagnose cancer in either natural or cultural systems. If that metaphor is correct, the main difference between physical and social cancer would be that the former is mindless, whereas the latter is mindful and could stop before it destroys its host.

Such mindfulness begins in a recognition of objective global norms which maintain and promote life on this planet. Created and maintained by life, the earth's atmosphere is about 80% nitrogen and 20% oxygen. Since Gaia is a morphostatic-homeostatic-homorheotic system, life's window of opportunity opens in a narrow range of temperature (0-50o); nutrients (50-100%) humidity (20-80%); acidity (3-9); salinity and gravity (~1g). Anything disturbing these ecological norms should thus be objectively considered as a planetary problem.

Starting with this knowledge, experts can estimate the impact of culture upon nature. One such estimate is given by Ehrlich's I=PAT formula, where: Environmental Impact=Population x Affluence x Technology; and Affluence = Capital Stocks / population x material throughput / capital stocks; Technology = Energy / Material throughput x Environmental Impact / Energy. This formula implies that the carrying capacity of the world at its present technological level can only support 20% of its population at an industrial SoL. The carrying capacity of the natural Earth at any particular time thus determines the sustainable limits to growth of the social world.

Human activities which go beyond normal ranges, such as spewing toxic oxides (O=50%; CO2=15%; NO=15%; Oz=20%) in the air, create unhealthy conditions. In a pH log scale between Acidic (1) and Alkaline (15) levels, acid rain ranges between 1-4 and normal rain around 5, while neutral is 7. Although acid rain is a relatively low level regional problem, it damages many sensitive species everywhere.

Similarly, the normal CO2 level of 275 ppm compares unfavorably with the actual which is around 350 ppm, resulting in global warming of 1o C rise for each 100 ppm increase. As for CFCs, for every 1% decrease of ozone they effect, there is a corresponding 10% increase of skin melanoma in humans alone. Although we have a thermoregulatory capability unmatched by any other mammal, thus not affected much by temperature variations, UV radiation damages all animal life, since 1% increase in UVB results in 2% increase of cancer.

From these examples, it is evident that societies suffer diseases, malaises and infirmities, depending on whether their problems are ecologic or systemic, functional or structural. So although there is a dearth of objective standards for social systems, it is possible to identify their problems by labeling systemic conflicts or malfunctions as:

- Political:judicial interpretation of disputes or formal recognition of public conflicts.
- Economic: technical determination of inefficient industry or dysfunctional commerce;
- Communal: collective identification of unhygienic conditions or cultural disarray;

Any of these problems or their permutations causes widespread pain and suffering as an adaptive response to social danger. The intensity, duration and extent of such suffering, can thus be used to measure the seriousness of social problems. A Human Misery Index could be established to scale social suffering which panetics could then try to identify and eventually treat.

### 2.2.2. Subjective Opinions

Unlike objective norms, subjective problems rest in the eyes of the beholder. Humans discover problems when they find something unacceptable or undesirable. In that sense, anything disliked or disapproved becomes problematic. The reasons for such subjective opinions may be genetic, situational or random. Personal, individualistic or idiosyncratic taste cannot be judged: "*de gustibus non disputandum.*"

In many cases, particular likes or dislikes, attractions or repulsions, may determine whether someone considers something to be a problem, if it does not suit one's taste. Very little can therefore be said about such reasons that may be treated as random and unpredictable byproducts of human nature. Personal problems only become socially significant when they are shared by large numbers. When one's paranoia becomes mass hysteria, it rises from private to public concern. Only when such numerical coincidence transforms individual problems to collective conditions and can it be treated by statistical aggregations of social science.

### 2.2.3. Collective Traditions

Between the hard external natural functions and the soft internal personal tastes, lie relative social standards that develop over time to form collective criteria of customary norms, thereby establishing some social order and modulating multiple personal contradictions which could lead to chaos. The sources for these collective norms, in order of stability and longevity, are:

- Fundamental Morality: natural ethics, secular philosophy, religious dogma;
- Dominant Ideology: cultural mores, traditional customs, community standards;
- Ephemeral Popularity: temporary fashions, mass taste, public opinion.

Here problems arise when real facts based on empirical observation affront ideal norms founded on ideology, morality or popularity. The distinction between right and wrong or good and evil, determine social acceptability; thus what a society considers unfair or unjust is the central criterion of social problem identification. Whenever a critical mass of people dislikes something, it becomes a social problem. Of course, the public is also fickle and its opinions change. For that reason, tradition and religion crystallize more functionally proven criteria in the long-run and thereby stabilize what is considered problematic, thus attenuating or moderating transitory situational fashions that maintain a critical continuity of customary legitimacy.

## 2.3. CONCEPTUAL OUTPUT

Our model has indicated the bases upon which problem-identification is carried out by individuals and collectives. We can now complete this discussion by presenting its outcome. Camus' concept of absurdity involves the antinomy between the human mind's desires and the external world's resistance, leading to disappointment and disillusionment. In order to minimize such malaise, any balanced and open-minded diagnosis of current conditions must include not only regret and despair, depression and exasperation, but also elation and admiration, faith and hope. But since we are here interested only in problems, we put aside normal or positive results, selecting solely abnormal or negative ones for consideration.

### 2.3.1. Problemology

PEC problems occur on various (local, regional, global) levels of the social system, thus have different functional and structural impacts. The more massive or complex a system, the more risky and extensive or difficult and intractable its problems. Equally, the more open and dynamic a system, the more urgent

and cumulative its problems. These correlations imply that as systems become more delicate, their problems become more sophisticated, as is the case with the modern world. So if we want to improve our capacity to understand and resolve them, our problemology must also become more developed. Undoubtedly, there are so many problems in the world that to many people they seem infinite or indefinite. So our first task is to create a typology for them.

The first extensive attempt to identify social problems was published by the Encyclopedia of World Problems & Human Potential. This project discovered and classified almost 10,000 world problems, identified and documented by 15,000 INGOs. In a different project, the US Library of Congress identified 1,200 world problems, but another independent study only recognized 50 of them. Finally, the Rio Conference discerned 40 fundamental problems which had to be solved by the year 2000, as part of its Agenda 21.

Of course, by playing with numbers, one can come up with any figure; since it all depends what categories and levels of abstraction or aggregation is used. But whether they are counted in tens or in thousands, what is important is that the disturbing or dysfunctional situations in the world are recognized and dealt with.

### 2.3.2. Pathology.

Pathology is the study of disease: hence it is concerned with systemic malfunctions and abnormalities that arise from either internal pathologic (destructive) behavior of the system itself or external pathogenic (unhealthy) condition in its environment. In either case, the system suffers an illness or has a problem. To begin with, organic diseases are classified by nosology as disabilities of: physical (motion, weight); physiological (temperature, pressure); chemical (digestion, respiration); biological (generation, reproduction); or psychological (perception, emotion) nature. To these, we now add social pathology, obviously based on an organic analogy, whereby society is seen as a patient and social problems reflect a disease of the body politic. These may be structural (institutional) or functional (operational), either of which result in a suboptimal performance and an undesirable state of affairs.

A general attribute of all dynamic systems is to resist or repel disturbances. If they cannot do so, they try to compensate by taking corrective countermeasures to restore the status quo ante. Disease may be nothing more than the manifestation of this defensive mechanism by which a system reacts to danger or injury. However defined, disease is an extraordinary condition, focusing attention to itself and calling for counteraction. Since this point of view assumes the existence of a normal or healthy state from which any deviation is considered undesirable, social pathology becomes a normative study of contradictions or discrepancies between real and ideal states. Consequently, the central hypothesis of pathology is that the greater the gap, the worse the disease. The difficulty is that social ideals are notoriously subjective and elusive, especially in dynamic or pluralistic societies. Both social reals and ideals are relative to place and time, since sociological conditions or traditions change much faster than biological situations or specifications.

Nevertheless, ideals or norms do exist as part of the conceptual standards of cultural paradigms that, whether epistemologic or ideologic, determine our thoughts and actions by distinguishing true from false or right from wrong. Although there is a superstructure of various relative local and temporal cultures, there does exist a fairly lasting global infrastructure of similar fundamental panhuman norms. The dominant paradigm of our modern Weltanschauung, for instance, forms a rationalistic-humanistic

melange: its rational aspect emphasizing a scientific methodology and empirical epistemology, whereas its humanistic facet accentuating an anthropocentric deontology and secular axiology. In spite of that, many sociopolitical obstacles have made a sociopathology quite an underdeveloped field. Unlike natural and medical sciences that have an established corpus of concepts and knowledge, humanities and social sciences do not; lacking even formal definitions of terms.

WHO, for instance, has an official definition of biological health as “a state of complete physical, mental and social well-being, not merely the absence of disease or infirmity,” Per definition, there are about 30,000 diagnosed organic illnesses, 5,000 of which are genetic, only a third are medically treatable today. Of these, the abridged three digit pathological inventory of WHO lists approximately 1,000 organic diseases, of which less than 10% are usually found in any particular society; the rest being of such rare and exceptional occurrence that need not be taken into account in normal situations.

Of course, nothing like that exists for social problems. What is interesting here is that medicine now considers the “social well-being” of people along with their physical and mental state, as a necessary condition of holistic health. Although ideal states are rarely attained by real systems, normal groups or individuals function adequately in less than perfect conditions. So, a more pragmatic compromise could admit as diseases only significant deviations from established statistical or acceptable norms. The closest the world has come to defining social health is the HDI (Human Development Index) of UNDP (United Nations Development Program).

This noteworthy initiative could well become an incentive to find further and better indices of social health as the necessary prerequisite establishing a social pathology. As the world becomes increasingly interdependent, such development should be part of a global endorsement of universal standards, much like those widely recognized norms of ISO (International Standards Organization).

### 2.3.3. Methodology

In order to achieve the above ends, we must have the proper means. From what has been said so far, it seems that a cognitive ability best derives from an intelligent activity. Whether natural or artificial, intelligence is defined by its systemic and systematic traits. It should therefore be made explicit what until now has been implicit in the discussion by spelling out our methodology.

First of all, intelligent or problem-handling systems have two main components:

- Memory: a capacity to store data for recall whenever required for treatment;
- Activity: a capacity to operate the system and process the data in some way.

This dual structure and function complement each other in the treatment and storage of information, permitting the system to learn and cope with problems, hence maintaining or improving its viability and chances for survival.

This systemic capacity, requires that the above components contain some:

- Data: distinct bits of information suitable for manipulation;
- Coda: programmed instructions on what to do with the data.

Thus, both natural and artificial, intelligence combine empirical percepts with theoretical concepts in order to apply general programs and instruct coded patterns to particular operations and specific calculations. Juxtaposing the above structural context and its content, we get the 2x2 array of the four interrelated cells shown below.

CONTENT	FORM	Memory	Activity
Data		Information Storage	Information Process
Coda		Program Storage	Program Process

This above matrix provides the basic capability for any intelligent system to function effectively, be it a mechanic computer, an organic brain or a social system. Its general characteristics will therefore be utilized as the specific components of the methodology used here, to be explained in the next and final chapter.

### 3. METHOD OF SOCIODIAGNOSTICS

Having presented the context of our physiology and content of its pathology, we can finally concentrate on the concept of diagnostic methodology. Timely diagnosis uncovers the early warning symptoms of problems and prevents their catastrophic deterioration. As both means and end, diagnosis follows certain definite steps to identify disturbing symptoms, so that they may be dealt with before their damage is irreparable. Diagnosis thus combines an inductive-deductive decision-making process, as well as an empirical-rational final conclusion of general applicability.

Naturally, social systems differ from organic or mechanic, because the former are usually larger and looser, thus making diagnosis more defuse and difficult. Yet, the basic principles of Sociophysics are valid here, so the fundamentals of diagnostic methodology should apply to social complexity as they do to natural simplicity. Combining information, intuition and intelligence, the diagnostician must figure out what principles apply to what cases and what facts are relevant to each, chosen from a variety of alternative options. Out of the plethora of confusing facts and contradicting norms, fuzzy logic could select and describe relevant symptoms. Discretion in all cases is critical, because obvious facts may be irrelevant while obscure rules may decide the case.

In order to simplify and clarify the complexity of this process, we distill its main steps into a diagnostic algorithm of three crucial and distinct operations:

- Semiosis: perceiving interesting signals or collecting indicative symptoms;
- Axiosis: normalizing relevant symptoms or selecting significant norms;
- Syntaxis: determining main problem or deciding critical disease.

These three steps are closely interrelated, yet it is important to distinguish them as separate activities. Together, they form the operational definition of diagnosis and provide the necessary and sufficient protocol for its performance. Diagram 3 outlines the main components of this model.

Evidently, that we have used the four structural elements of artificial intelligence, combined with the problem identification model of the previous chapter to produce the above diagnostic diagram. In order to explain and exemplify it, we next follow its step-by-step algorithm. Obviously, SET constraints prevent its rigorous testing, so we can only

give a simple presentation and illustration of its potential. To do so, we show how a generic diagnosis could be carried out, given sufficient resources. Since our exemplary diagnosis could apply to the economic, political and cultural health of humanity, we investigate the problematic gap between given symptoms and standards as the criterion indicating the existence and extent of present world conditions.

As our central example, we have chosen the global megaproblem defined by the wide gap between the principle of equal admission and the practice of unequal possession. This issue is important because it creates grave economic and political, cultural and natural, substantive and procedural syndromes. The growing demands of the world's majority for a more equitable share of its resources take place at a time of increasing friction and congestion, dismay and disparity; pollution and depletion, uncontrollability and incapability.

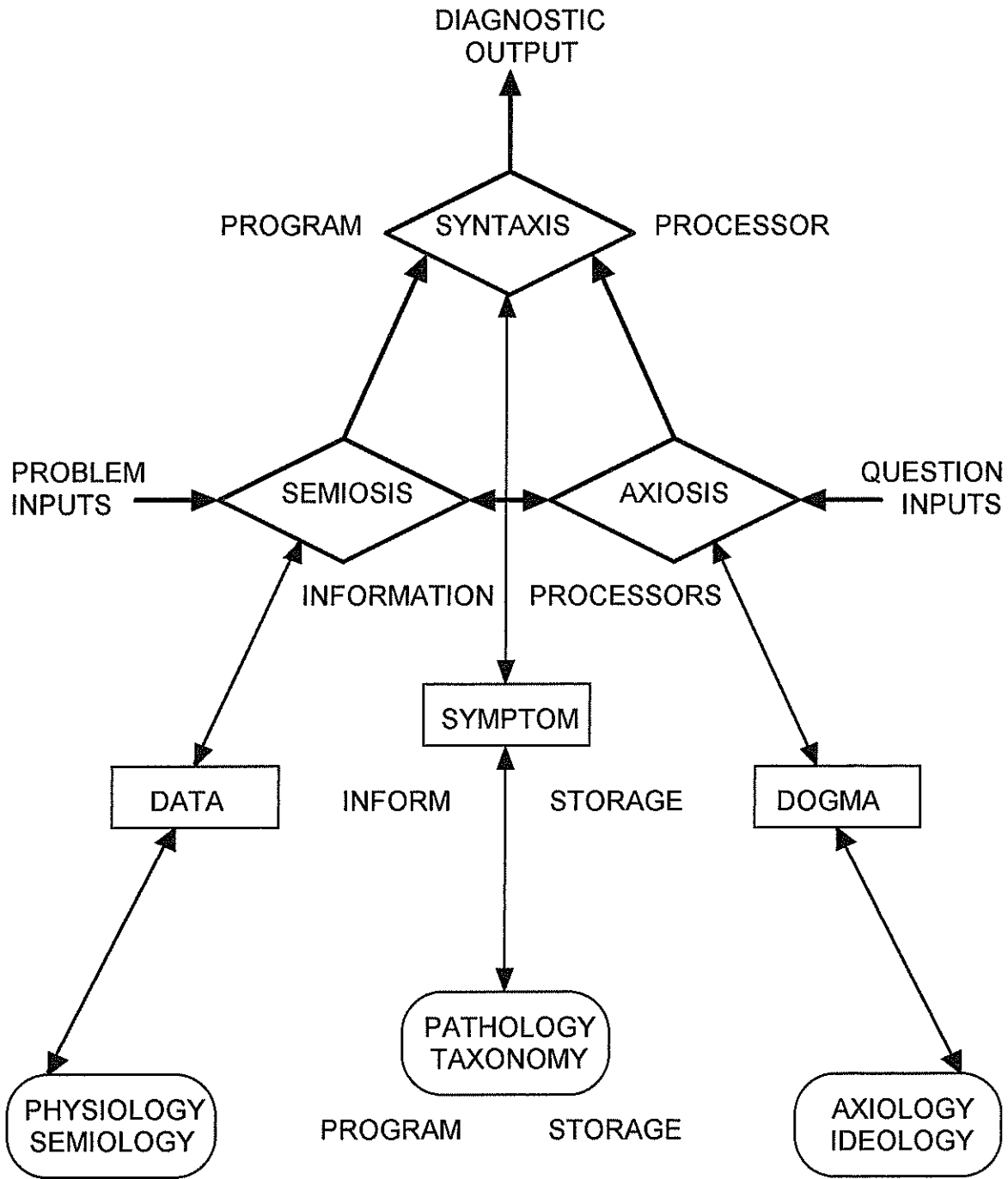
Since the invocation of policies influences their implementation, a preliminary diagnosis is that we are faced with an extremely complex problematique of interrelated issues. The world presents a stark picture of opposing elements: fantastic wealth and pathetic poverty; superior technical sophistication and inferior political institutionalization; superfluous mass-production and obsequious maldistribution. All these and other contradictions coexist throughout the world, culminating in the infamous intersecting North-South (rich-poor) chasm and East-West (conservative-progressive) schism. The material production-distribution issue divides industrially underdeveloped Africa, Asia and Latin America from technologically overdeveloped North America, Western Europe and Pacific Oceania. This geoeconomic confrontation is a classic example between "haves" and "have-nots"; the former trying to maintain the status quo of their privileged position, while the latter pressing for a more equitable redistribution of the global commonwealth.

The ideological contradiction-confrontation conflicts the traditional Eastern theism with liberal Western secularism. This geopolitical antagonism is another classic example between progressive and retrogressive movements, of those who wish to maintain traditional values or cultures and those who wish to change them far and fast. These intersecting conflicts between retrenchers and reformers, revisionaries and reactionaries are always going on, but are now speeding and spreading more than ever. For these reasons the two cross-cutting hemispheric fissures constitute a conspicuous and suspicious situation crying for diagnosis.

In order to define issues and identify problems, sociodiagnostic techniques combine documental reading and environmental scanning. Accordingly, we carry out systematic reviews of authoritative literature, supplemented by direct observation and statistical accumulation. This research of primary and secondary sources should provide sufficient examples to illustrate our diagnostic model. It should be kept in mind to distinguish between objective data (facts and figures), subjective bias (values and opinions) and collective conclusions (symptoms and synthesis). These caveats protect our epistemology, ideology and pathology; doubting or discounting certain observations, prejudices and judgments of some documents perused or many experts consulted. On that basis, we extract specific statements or propositions classifiable in set categories and treatable through the steps of semiosis, axiosis and syntaxis. So whether specific diagnoses are explicitly recorded or not, it is possible to attribute implicitly suggested comments and opinions that could lead to a tentative diagnosis under the headings summarized below.



-3-  
DIAGNOSTIC MODEL



**STRUCTURAL-FUNCTIONAL  
COMPONENTS**

### 3.1. NATURE OF THINGS

The first step of diagnosis consists of a semiosis or recognition of problem-indicators. A social problem or pathology is a well-defined condition, composed by a particular combination of symptoms or empirical phenomena. Symptomatology studies certain observations which acquire information and define situations by:

- Selection of relevant signs from a peripheral phenomenology;
- Codification of raw data into a recognized symptomatic typology;
- Combination of particular symptoms into a well-defined pathology.

Factual information is obviously the primary input of our model whose function is to store, process, recall and use it as a symptom. As empirical indicators of problems, symptoms manifest systemic dysfunctions, providing their operative evidence and extensive measurement, whose basic unit is the coded datum. For example, in order to determine if a crime has been committed, we look for its various symptoms in the *corpus delicti*, complaints of its victims or denunciations of its witnesses. Evidence of violent, unlawful or antisocial behavior, thus constitutes symptoms of criminality which may be quantified as the measure of a social problem.

Obviously, the proper selection of symptoms is extremely important in the identification of problems. Discovering certain indices rather than others makes all the difference in avoiding a misdiagnosis. The selection criteria must therefore be as explicitly stated and correctly identified as possible. The task of semiosis then consists of processing certain factual inputs with the relevant data and programs stored in our system's memory as follows.

#### 3.1.1. Data Bank:

The information inputs first have to be integrated into the data base of our model. That is to say, the observed measurements should be compared with previous statistical measures of similar cases in order to see whether the case in question fits a canonical pattern or not. Quantitative measurement produces robust information. In the social sciences, this ranges from demographic data, census surveys, material inventories, economic indicators, trade and financial statistics, to public opinion polls and similar softer measures of human thoughts and actions. Unfortunately, such data is not always forthcoming, so less reliable measures often have to do.

The information base used for the examples here is rather soft, consisting of particular impressions of experts or expressions of authors. These were collated and compared with the general authoritative works in our bibliographic bank describing the world from a more abstract and macroscopic perspective. In this way, we can detect a range of impressionistic opinions, most of which fall within the established mainstream, while a few skirt its radical fringes. In order to distinguish the various degrees of centrality in these perspectives, we need to regress to the basic physiologic paradigm that validates and legitimizes present authoritative knowledge.

#### 3.1.2. Physiologic Paradigm

Information is selected by epistemologic standards that determine what facts are noted and others ignored. This choice may be eventually traced to incipient or instinctive reasons, whose paradigm is

reflected in either semiotic tenets or physiologic theories. Modern science emphasizes empiricism as the mainstay for fact recognition from which derive symptoms and their problems.

The theory of cognitive dissonance tells us that facts are credible only if they fit or confirm a preconceived paradigm, otherwise they are ignored or discarded. In the same way, the denial syndrome tends to overlook fallibility so as to avoid disappointment. To correct such errors, Popper's critical rationalism calls knowledge only whatever is vulnerable to refutation. This fallibilist criterion infuses a scientific skepticism to all theories, thus avoiding either dogmatism or nihilism and rejecting scientism.

For this reason, a picture of the world based exclusively on such econometric indices as GNP are inadequate and misleading. To remedy the prevalent economic myopia, a more sophisticated epistemology must be pluralistic, flexible and interdisciplinary, so as to include various indicators. Consequently information should be gathered not only at an aggregate level by expert consultation, but at the grass-roots by public opinion. In that way, societies can be studied from the inside by subjective involvement and outside objective impartiality.

### 3.1.3. Semiosis:

Combining a quantity and quality of participant-observers, we can get a good idea of what is a realistic perception, given the present state of knowledge. Juxtaposing hard information and soft opinion, we are able to draw a satisficing picture reflecting the human condition. Such conditional semiosis notes the various views and their standard deviation, thus emphasizing the most acceptable interpretation of statistical information, enlightened observation and public opinion.

The mental image emerging out of this eclectic process is full of vivid colors and sharp contrasts. On one level, the world is a heterogeneous place where some regions are endowed with a lot of natural resources and others with barely any. These natural differences are exacerbated by cultural factors, creating great urban centers of high demographic density and large industrial complexity with super economic productivity in some countries and almost empty deserts or small subsistence communities in others.

On another level, the world is a network of interrelations and interactions, where exchanges of goods, services and people is ongoing. In this network, there are modes of high activity, advanced technology and rapid communication, as well as massive organizations and powerful corporations. The world stage has its hot spots of high friction and conflict or frenzied material production and energy consumption, at the same time as there is modicum cooperation and regulation of its activities, so that the global system presents some semblance of law and order.

This picture of the world is then painted with contrasting colors: life-death, war-peace, love-hate, liberty-slavery, activity-passivity, tradition-innovation, tranquility-turbulence. So much so that it reflects contradictory and paradoxical aspects, difficult to understand or reconcile. That is why interpreting such disingenuous state of affairs is so difficult and agreeing on a single meaning next to impossible. What we do know is that we like some parts of this picture and hate others. What we disapprove, we call problems and it is on these that we focus our diagnosis. To do so properly, semiosis provides the correct facts and objective figures upon which we can next make our subjective judgments and finally draw their valid conclusions.

## 3.2. HUMAN VALUES.

In addition to information and observation, diagnosis requires interpretation and evaluation. Having considered factual inputs, we now tackle their critical translation. Here we are dealing with qualitative questions rather than quantitative problems, therefore we have to use different criteria. As semiosis determines the veracity of arguable conditions, axiosis evaluates the validity of questionable situations. This phase involves the question whether the incoming signals constitute a social issue rather than a physical problem. By the test of axiosis, we determine the social gravity of a problem, thus deciding the human significance of a question.

### 3.2.1. Dominant Dogma.

After determining the objective reality of a problem, we must now decide on its subjective morality that can only be answered by normative comparison to given desiderata. Such standards of preference fit within the dominant dogma of what is morally or legally acceptable. From universally applicable natural laws, we therefore move to locally valid cultural codes. Between these two extremes, there is international law that is now developing global standards of jurisprudence. The corpus of this world law includes multilateral agreements, universal declarations, human rights conventions and interstate treaties that set the rules of individual and governmental conduct throughout the world.

From the above norms derive certain rights and duties of what is acceptable human behavior and social obligation. These givens assign preferences and list priorities according to which one is able to decide between good and bad or right and wrong. Accordingly, it is taken for granted not only that people should not be tortured or killed, but they should not be left to die of disease, hunger or malnutrition; that violence be minimized and cooperation maximized; that life is preferable to death and human life is most valuable.

Of course, those platitudes are so general as to allow for different interpretations and differential applications. Nevertheless, broad as they are, these dogmatic beliefs always and everywhere have been shared by most people and form the premises of ancient religions and modern civilization alike. For this reason, income maldistribution statistics or war casualties and pictures of emaciated children or mass graves are abhorrent because they do not live up to our ideals of civilized society. On the contrary, If our culture accepted wide standard deviations or saw hunger and murder as natural, then misery or agony might be mentally interesting but morally insignificant. It is only when people believe in social equality and their dogma includes a narrow range of wealth distribution, that one finds great disparities disturbing. In that case, a situation must be deemed problematic to the extent that it deviates from a legal rule or legitimate norm.

### 3.2.2. Ideology.

Moral and legal standards ultimately depend on the underlying theological or ideological paradigm that provides the theoretical assumptions upon which axiosis rests. The indispensable tool for any interpretation of events then is a belief in some fundamental ideal criterion. In social science, the most basic shared values may be summarized as the following dodecalogue relating to:

Ecosphere

Supernaturalism: Everything is created and ruled by God, in whom we trust.

Naturalism: humanity should live in harmony with the natural environment.

Sociosphere

Legalism: everyone should be treated equally and equitably under the law.  
Moralism: one must act in respect and consideration of those concerned.  
Socialism: a community should share collectively its commonwealth.  
Liberalism: individuals should be left free to realize their full potential.  
Populism: all citizens should participate democratically in public affairs.  
Nationalism: people should be able to determine their destiny independently.  
Pacifism: humans should settle their disputes by peaceful and lawful means.  
Pluralism: different cultures should coexist in toleration of each other's beliefs.

#### Egosphere

Humanism: man is measure of all things, possessing inalienable human rights.  
Individualism: people should strive for self-reliance to the best of their abilities.

These general aphorisms seem to uphold common panhuman ideals and thereon evaluate their perceived indicators. Obviously, all these ideals are not consistent. Many are mutually exclusive and contradictory, therefore cannot be equally maximized at any particular time or place, but must be ranked or prioritized. Therein lies the innate difficulty of consistent evaluation and the moral anguish of the human condition.

#### 3.2.3. Axiosis.

Judging all these contradictory principles and weighing their worth in particular situations is the task of axiosis. Of course, maintaining a proper balance among competing claims and exercising a broad perspective is the primary mark of human wisdom, unfortunately reserved to only a few. Nevertheless, everyone should attempt to approach these ideals in a realistic equilibrium of materialism and idealism.

By combining social laws and basic norms, we see the world in a rather negative or pessimistic perspective, because actual world conditions hardly ever correspond to ideal values. Accordingly, human inequalities become social inequities, of which the world is full. As a result its most striking characteristics are: unequal distribution of wealth, food, resources, education, health, housing, employment, etc. These inequalities exist both within and between societies, so the rich and poor confront and conflict with each other across neighborhoods as well as continents.

This conception of widespread social injustice is perhaps our central moral dogma. The notorious North-South Gap (75:1 rich-poor income ratio) represents the most unpalatable and insidious imbalance in the global system, thus creating a very volatile situation. Added to that economic disequilibrium, are other critical conflicts, such as cultural (Eastern fundamentalism versus Western liberalism) and political (democratic constitutionalism versus dictatorial authoritarianism), not to speak of man's inhumanity to man or the proliferation of dangerous weapons in the hands of fanatics, terrorists or sociopaths. Last but not least, there is culture's increasing abuse of nature, leading to environmental pollution and resource depletion and threatening the extinction of many species, including ours. All these signs run counter to human values, so must be interpreted as danger signals, attesting to the general malaise of the planet. Thus both the exploitation of man and the degradation of earth are symptomatic of the world's outstanding critical condition.

#### 3.3. GLOBAL PATHOLOGY.

The final step in diagnosis synthesizes the two previous ones by comparing their results to a given pathogenic symptomatology. As such, syntaxis combines empirical data and normative dogma to define

problems within a formal nomenclature. The inputs to this operation are significant abnormalities as determined previously. The question now is what do these ideofactual discrepancies mean? For an answer, we regress first to symptomatology and then to pathology as follows.

### 3.3.1 Salient Symptoms.

Symptomatology requires a dictionary of symptoms, collecting, grouping and classifying them as indices for certain pathologies. Like a dictionary, this taxonomy provides standard synonyms for terms and should be used consistently in all cases. When a particular combination of symptoms fits the definition of a disease, then the diagnosis is successfully performed by identifying and labeling the abnormality in its terminology. If the symptoms do not fit any known problem, then either they describe a new disease or a false index. In either case, we suspect that something is wrong, but do not know exactly what it is or what to call it.

To complete our continuing example, we now have statistics indicating that 90% of the population of a country earns only 10% of its income, owns 5% of the land and 1% of the capital. Moreover, most of its people are undernourished, uneducated and unhealthy. What social disease these symptoms constitute? To find out, we search our symptomatology to see if it contains such indices that define a particular problem. It may be that the package of the above statistics denotes underdevelopment. In that case, if the actual measures fit close enough to the underdevelopment symptoms, then we are well on the way to a reasonable diagnosis.

Recapitulating the salient indices gathered so far, we rely on statistical data and anecdotal acts to produce the following set of symptoms for the world: periodic and regional inflation or depression; over and under-employment, material dearth and wealth, economic paucity and obesity, population morbidity and illiteracy, political inefficacy and instability, cultural or religious intolerance and intensity. We note that large groups of people and even entire societies suffer from these contradictions. There is no point here repeating all the complaints that people have with their lives. Needless to say, these symptoms range from the simple and banal physical annoyances to the complex and controversial mental maladies. They aggregate individual discomfort and pain to collective misery and suffering, so a timely diagnosis is the first step to preventing their exacerbation.

As typical symptoms to help our diagnosis, we outline some widespread social PEC symptoms, surrounded by their physiological and psychological syndromes:

-Physical: Pollution; depletion; overpopulation; disease; infection; malnutrition; deforestation; dehydration; diversification; intoxication; destruction; despeciation; acidity; salination; desertification; hyperthermia; erosion; eruption; contamination.

-Cultural: breakdown; mistrust; decline; contempt; immorality; confusion; ignorance; marginalization; exclusion; isolation; ghettoization; ignorance; illiteracy; crime; racism; brutality; crowding; inhumanity; discrimination; vandalism; fear; malcontent; anomy; nihilism.

-Economic: unemployment; inflation; devaluation; absenteeism; sabotage; theft; bribe; waste; debt; deficit; obsolescence; fraud; debt; maldistribution; volatility; poverty; insolvency; exploitation; deprivation; dislocation; stagnation; disparity; inefficiency.

-Political: discontent; bureaucracy; impotence; inefficiency; insecurity; irresponsibility; corruption; repression; abuse; militarism; illegality; injustice; war; terrorism; torture; violence; instability; ungovernability; demagogy; disloyalty; treason; tension; friction.

-Mental: loneliness; alienation; anxiety; boredom; dysfunction; illness; delusion; depression; insensitivity; disorientation; insanity; stupidity; hypochondria; paranoia.

Of course, some of these symptoms may constitute diseases in their own right, depending on the level one wishes to make a diagnosis. Technically, a symptom must be a directly observable and accurately measurable phenomenon, whereas a disease is a well-definable symptomatic package. Such symptomatic overlaps and problematic similarities make misdiagnosis a bane of the profession. In any case, the point here is that it is all a matter of proper observation, classification and definition.

### 3.3.2. Pathology.

As it happens, what there is of social pathology is vague and moot, thus open to various and varying interpretations. Nevertheless, social scientists can recognize certain symptoms close enough to diagnose a particular condition. The disagreement is mostly semantic in its labeling, that is why we are here arguing for the necessity of a common nomenclature. Whether consciously aware or consistently applied, nominal norms are indispensable to evaluation. All our method does is raise an implicit or instinctive diagnostic process to a higher explicit and expositive level.

Like individuals writ large, societies suffer from a variety of maladies which accumulate and spread from their individual members. Thus, apathy, anomy and alieny, inevitably spill over from private to public diseases. Social pathologies then have a direct correlation to natural pathologies, as the following examples indicate:

-Hypertrophy, obesity, addiction, boulemia, consumerism, gigantism, megalomania.

-Hyperactivity, manic-depression, hyperventilation, hypertension, aggression, hubris.

-Hyperbromy, toxicity, diarrhea, pollution, infection, contamination, epidemy, contagion

This set of typical symptoms could spell out what may be termed as the general disease of maldevelopment, manifested in two opposite states: under and over-development. Obviously, the former hypoanaptixis indicates the atrophy or poverty of most countries in the world which have been stalled in a preindustrial state, whereas the latter is reflected in the few hyperanaptic postindustrial systems.

Extreme deviations from the norm by either too much or not enough of something are unhealthy or unhygienic in either ecologic or economic systems. That is why, not only poor, but rich societies are full of stresses and strains. Many of their people suffer from anxieties by trying to keep up with exacting social and economic pressures. Time becomes scarce, either when income is inadequate or abundant, whether it is spent in producing too little or consuming a lot. Growth addiction increases needs and wants, contributing to insatiety and leading to both progress and hubris. Thus, since modern societies are legitimated by continuously rising prosperity and standard of living, they result in galloping liberalism and individualism, antagonism and hedonism.

This pathologic greed or wretched excess, indicates a type of maldevelopment which some societies have missed while others surpassed. Such condition is manifestly unhealthy and unsustainable. On the contrary healthy development, measured by a sustainable quality of life and standard of living, is a process of systemic maturation and attainment of natural potential. Whether organic or politic, individual or social, viable development has thus become the value ideal or holy grail of the modern world.

Against it are compared various forms anti-, non- and un-development, as the widespread diseases of globalization. These pathologies may be classified as:

-Structural: relating to the topology of local, regional or global problems.

-Functional: relating to the ontology of personal, social or natural problems.

Of course, most diseases are a complex amalgam of various factors and symptoms. The problem of famine, for example, is not merely lack of food production, but of poverty, corruption, chaos, conflict, mismanagement, war, oppression and maldistribution. Although these multiple symptoms are difficult to disentangle, efforts should be exerted to recognize and distinguish them as indices of related but distinct diseases.

### 3.3.3. Decisive Judgment.

This last step of diagnosis depends on a well-formulated pathology against which symptoms are judged. This means that the various symptoms observed must be collected and collated into a definite set that corresponds to some recognized problem in our pathological lexicon. So in this final stage, we have to compare the perceived symptoms with the conceived diseases and thereby draw the appropriate conclusions. Having determined the salient facts on the one hand and procedural rules on the other, one should be able to make a proper diagnosis. As such, the extent of a problem is proportional to the discrepancy between facts and values in any given case.

On that basis, we have identified nine critical contemporary world problems:

- Scarcity: Overpopulation, leading to natural resource and fresh water depletion;
- Inequality: Rich-Poor standard of living Gap, increasing frictions and conflicts;
- Immunity: Mutant pathogens overpowering drug efficiency, spreading epidemics;
- Inability: Decision-making inefficacy in complex systems, increasing uncertainty;
- Insecurity: Proliferating global terrorism and sophisticating organized crime;
- Ecology: Adverse interaction between economic growth and natural conservation;
- Ideology: Increasing intolerance of religious, ethnic, racist groups, creating conflicts;
- Technology: Accelerating and disorienting change creating unemployment;
- Economy: excessive accumulation and rising expectations of capitalism.

Overall, we can say that Gaia is a global ecosystem suffering various pathologic and dermatologic ills. As a middle-aged planet, the earth is a high risk candidate for cancer, by rapidly evolving a relatively intelligent species. As such, humanity is equivalent to skin melanoma, a malignant tumor or neoplasm with widespread metastatic potential throughout its planetary host. Under the circumstances our final diagnosis of the global ecosphere may be termed as a disease of galloping humanitis: consisting of people plague or population pollution, much like a locust epidemic, whose main symptoms are:

- Exfoliation-deforestation-desertification-dehydration-deoxygenation;  
general degradation due to agriculture and forestry.
- Acid-indigestion-oxidation-sulfurization-nitrification-carbondioxidization;  
ground contamination due to industrial combustion.
- Anozonemia-aerosolemia-frigorifitis;  
atmospheric depletion due to CFC gas consumption.
- Hyperthermia-greenhouse-fever;  
global warming due to CO<sub>2</sub> and methane emissions.

Having said that, we must repeat that the purpose of such dramatic summary diagnosis is to exemplify our model procedure and may not necessarily or exactly correspond to reality. For a real or true diagnosis, we would have had to follow a more rigorous path, including the various prerequisites



enumerated throughout this study, something which is manifestly impossible to have done here and now. In any case, it must be kept in mind that intersystemic metaphors are always risky and should be carried out prudently, lest they teach us the wrong lessons. Although comparing biologic with sociologic systems is generally heuristic and realistic up to a point, it need not be carried out to logical conclusions or ridiculous extremes. That is why we have combined both rationality and sensitivity to point a way towards what could become an optimally pragmatic diagnostic method for life support systems.

### Conclusion

On the basis of this study, our general diagnosis concludes that the world suffers from a complex syndrome of interrelated ailments. Its problems range from economic (capitalism, commercialism, consumerism) and social (elitism, ethnocentrism, urbanism), to political (statism, militarism, terrorism) and cultural (imperialism, materialism, nationalism). Now as never before the future of life on earth is of great concern, because many complex problems seriously threaten human survival. Some of these problems are found at their worst in some regions and sectors of the world system. The North-Western world suffers mostly from overdevelopment (senility, decadence, obesity), whereas the South-Eastern world suffers mostly from underdevelopment (violence, overpopulation, poverty). In addition to these social problems, we have personal (alieny, apathy, anomie) and natural (pollution, depletion, entropy) maladies which complete the global pathological roster. Man's finite objective natural needs have exploded into infinite subjective social wants. His frustration of inadequacy and insecurity has produced dark shadows of hostility and terror, whereas his techné and science have developed at the expense of spirit and soul. As a result, possessive materialism defines man by his ownership of commodities rather than by his existential worth.

These various diseases, alone and in combination, make the world a dysfunctional system, whose problems are so wide and deep as to constitute a pandemic. Thus identified, defined and classified, this maldevelopment problematic, concludes our exemplary diagnosis as a preliminary test of the proffered model. The endless litany of miseries and catastrophes inure people to compassion and attune them to indifference. The more desperate the situation, the less responsible people feel for it and the more irrational their reactions. Therefore, before our problems can be properly treated, we have here stressed the need for a scientific diagnosis. Awareness, knowledge and understanding must precede policy planning and acting.

Problem-identifying is only the beginning of a long road towards problem-solving. To complete the necessary epistemic process, we must include not only diagnosis, but anagnosis and prognosis. This DAP sequence creates knowledge about present conditions, as well as its causal historical antecedents and probable future consequents, thus exhausting the past-present-future arrow of time. Here we have only engaged in problem statics carried out by a synchronic diagnosis, thus leaving the history, etiology and prophesy of problem dynamics for a diachronic study. Diagnosis is a prerequisite to the knowledge of problems and their scientific treatment, therefore, it should eventually lead to a probable therapy. That is why, posing the right questions, as we have done, is half way to a correct answer.

Once the triphasic DAP process is complete, we could know as much as possible of any subject, after which comes a more enlightened consideration of the most desirable public policy prescriptions leading to an optimal social therapy. On this premise of intersystemic similarity, we utilize knowledge in one domain to further understanding in another. Transferring analogies, like mixing metaphors, however, is a

dangerous undertaking, so should be done prudently. In this long path to a scientific treatment of life support systems, a diagnostic model is a crucial need.

### Selective Background Bibliography

This study is sufficiently original not to require direct citations or specific references to previous works. Nevertheless, it is based on the accumulated knowledge in various sciences which is integrated herein. The bibliography listed below consists of selected monographs which are the considered highlights in the interdisciplinary field of social problemology spanning this generation. Although the subject of social diagnosis has not received the attention it merits, the relevance of these titles in this area is self-evident.

- C. Abt (ed): The Evaluation of Social Problems. Sage, L. A. 1976  
S. A. Barber, et al. Problem-Solving in Political Science. Merrill, Columbus, 1971  
H. S. Becker (ed): Social Problems. Wiley, NY, 1968  
A. Birenbaum & E. Sagarin (eds.): Social Problems, Scribner, NY, 1972  
R. Brody: Problem-Solving. Human Sciences Press, NY. 1982  
K. B. deGreene: Sociotechnical Problems. Prentice-Hall, N.J. 1969  
R. A. Dentler: Major Social Problems. Rand McNally, Chicago, 1972  
S. N. Eisenstadt (ed): Comparative Social Problems. Free Press, NY, 1964  
E. P. R. C. Contemporary Societal Problems, S.R.I. Menlo Park, 1971  
C. Eden: Messing About in Problems. Pergamon, NY, 1983  
J. Fetzer (ed): Sociobiology & Epistemology. Reidel, Dordrecht, 1985  
A. Gabus & E. Fontela: Perceptions of the World Problematique. Battelle, Geneva, 1975  
S. Gordon, World Problems. Batsford, London, 1971.  
R. N. Henshel: Perspectives on Social Problems. Longman, Don Mills, 1973  
R. N. Henshel: Reacting to Social Problems, Longman, Toronto, 1976.  
G. J. Klir: Architecture of Systems Problem-Solving. Plenum, NY, 1985  
E. M. Lemert: Social Pathology. McGraw-Hill, NY, 1951  
K. Mannheim: Diagnosis of our Time. Routledge, London, 1943  
R. K. Merton: Contemporary Social Problems. Harcourt-Brace, NY, 1971  
I. Miles: Social Indicators of Human Development. UNUP, Tokyo, 1985  
R. F. Murphy: The Dialectics of Social Life. NY, 1971  
J. Rachels: Moral Problems. Harper & Row. NY, 1971  
P. N. Rastogi: Policy Analysis & Problem Solving, Sage, N. P. 1992  
J. R. Ravetz: Scientific Knowledge & Social Problems. Oxford, NY, 1971  
J. E. Robertshaw et al. Problem-Solving. McGraw-Hill, NY, 1979  
E. Rubington & M. Weinberg: The Study of Social Problems. Oxford, NY, 1971  
E. Sainsbury: Social Diagnosis. Routledge & Kegan Paul, London, 1970  
Secretariat: List of Social Concerns. OECD, Paris, 1973  
Human Development Report. UNDP, NY, 1999  
E. O. Smigel: Handbook on Social Problems. Rand McNally, Chicago, 1971  
F. I. Turner (ed): Differential Diagnosis. Free Press, NY, 1983  
U. I. A: Encyclopaedia of World Problems & Human Potential. Brussels, 1994  
F. Vidal: Problem-Solving Methodology. Dunod, Paris, 1971  
P. Worsley: Problems of Modern Society. Penguin, London, 1972.

Last but not least, the following six publications of the author, are the indispensable theoretical foundations of the presented diagnostic model.

P. J. Arnopoulos: Sociophysics: Chaos and Cosmos in Nature and Culture.  
Nova Science, NY, 1993

Sociopolitics: Political Development in Post-Modern Societies.  
Guernica, Toronto, 1995

Cosmopolitics: Public Policy of Outer Space Affairs.  
Guernica, Toronto, 1997

Exopolitics: Classical Theories of Foreign Policy.  
Nova Science, NY, 1999.

Conceptual Framework of Human Concerns for the Medium-Term Plan.  
BEP Report, Unesco, Paris, 1974.

“Social Problematics: Towards a Systematic Definition.” in:  
H. F. Didsbury (ed): Future Visions: Ideas, Insights and Strategies.  
World Future Society. Bethesda, MD, 1996

-----