

This is a scanned and slightly edited version of my only copy of an untitled paper presented to Joseph Haberer's Politics of Science Class the Spring semester of 1973 and sent to Paulo Soleri, a popular counter-culture architect for a while in the 70's.¹ Perhaps an acknowledgement section was in the original but not in this scanned copy. I should have acknowledged my soon to be wife, Susie Carter, for typing the manuscript from my terrible handwritten version often with text with text movement by circles and arrows, many tiny written inserts, and abundant marginal notes. In 2016 I scanned a copy of the text she typed using a text recognition program, Omni 10, which digitized the text with few errors, and many of those were just ink smears. I then imported the files to Word, removed page breaks, reformatted all text and paragraphs, and applied the spell checker. It seems she corrected most of my spelling errors that I often make. So a belated thanks, Susie.

Introduction

In the next few hours I shall outline a design for a society of the imagination. This design is arbitrarily restricted to one coherent community or city, but may be applied to any scale of community, personal to global, depending on your imagination. The conjectural community does not represent a static entity fixed in time and space nor restricted within defined behavioral limits, but is, rather, a heuristic model that allows continual dynamic self-design for an evolving society. Certain assumptions are inherent within the model, including an undefined mechanism that carries our present society from now to then.

Parts I and II describe the pre facto conditions that exist in time after an inherent transitory period from the 1y present. These givens, or basic assumptions, are divided into two major parts. Part I is the physical setting of the community. This setting includes the structural units of habitation for commercial, industrial and individual use. Also included are systems for the transportation for materials and people, waste disposal, air circulation, water circulation, communication linkages, power transmission and any other facets of the physical environment modified by man to meet his criteria for acceptable living conditions. The technological (both hardware and software) state of the art is assumed to be coincident with the requirements of the described physical setting.

Part II contains a description of a pre facto information flow system based in part on the physical limits defined in Part I, and in part on the feedback loops of the information flow system itself. An arbitrary division of this system into three subsystems, political, economic, and educational, has been utilized in order to facilitate a simplification of the task of description. It should be remembered that each of these subsystems is entirely dependent on interactions with the other two for its character and functional manifestations. They are not discreet, separable entities which can exist independently.

Many changes from the present functional forms of interaction within these systems are defined as existent realities with little discussion concerning their feasibility or conjectured effects. A complete discussion of each of these changes would be beyond the scope of this paper, or any paper, but Appendix A has been included to give consideration to some of the effects of one proposed change -- the elimination of advertising from the economic flow system.

Taken together the changes described in Parts I and II create an environment within which the individual -and community as a whole must find behavioral outlets for internal desires and aversions. Part III describes some outlets -and defines them as psychological, philosophical, and sociological milieu. Individual responses to any physical and mental environment are considered under a section entitled "The Psychological and Philosophical Milieu", while the interaction of individuals within the tetrahedral environment is reserved for the "Socio-logical Milieu". Part IV contains three appendices that serve to further explore the ideas presented in Parts I and II.

¹ I wrote this while living with Mark Wilkerson, who was familiar with what I was doing, as we smoked dope every night and shared our thoughts, and mine often strayed to the Tetrahedron. Mark knew that his friend Ben Fugenzi was interested in some wacko in Arizona and had spent time at his "commune", Paulo Soleri. Thus I met Ben and found Paulo. My transmittal letter to Paulo is reproduced at the end of this documents.

Part I: Physical Setting

Structural Framework of the City

The city described on the following pages is completely contained within the walls of a single building. To so enclose an entire city requires a design for a huge structure that can support its own weight, the weight of its inhabitants, and the weight of the material accretions of modern living. This building must also offer extreme flexibility for the design of multitudinous varieties of operational units of space necessary for the functioning of a city; i.e. the heterogeneous nature of human activity must be able to express itself within an externally homogeneous structure. These criteria are both met in the geometric form of a tetrahedron.

A tetrahedron is a solid geometric form enclosed by four intersecting equilateral triangles. It resembles the Egyptian pyramids, but has only three sides and a base as opposed to the pyramid's four sides and a base. The base can be arbitrarily defined as any of the four triangular faces since a tetrahedron possesses six planes of symmetry. Structurally, a tetrahedron is defined by a center and four apices equidistant from the center and along radial lines at the maximum possible distance from each other.

The tetrahedron is the geometric form of the very earth itself, and the moon beyond. Its structural form is a characteristic of the unit cell of the silicate minerals which compose more than 99 percent of the earth's crust. In the rocks of the eternal hills (which are not really so eternal) this form manifests itself as the SiO₄ tetrahedral unit cell in the crystallographic complex of the major rock forming minerals. A quick look at a display of silicate crystals attests to the infinite forms that can be built from this one basic unit form.

The stress in a tetrahedron is so distributed that large forms composed of interlocking unit cells can be built with a skeletal superstructure which need be no stronger at any point than the supporting strength necessary to uphold one unit cell. Within the structural characteristics of interlocking tetrahedral unit cells are hidden the secrets of why the earth does not collapse under its own weight, and how a structure may be built to house an entire city.

The tetrahedron is nature's most common basis of structural organization. The hexagon, a planar variation of combined tetrahedral unit cells, manifests itself in unexpected ways. A few organizational forms adapted to hexagonal patterns are brain circuits, blood circulatory patterns, river systems, and honey bee combs. Thus the choice of the tetrahedron for the dwelling cell of man is neither radical or absurd, but rather, a conservative move that attempts to utilize man's knowledge of nature to adopt man's living conditions to a form more coincident with nature's guidelines for organizational behavior.

Units of Habitation, Commerce and Industry

The unit cell tetrahedron of the large tetrahedral building is considered the standard unit of habitation. Dimensions of 10 meters per side for each of the four enclosing equilateral triangles is arbitrarily chosen as the defining dimension of the unit cell. Given a unit cell with a horizontal base ten meters on a side, the standard habitation cell can have a first floor with 43 square meters and a second floor of 13.9 square meters, if the second floor is 3.65 meters above the first floor. If the second floor is only 2.65 meters above the first, 17.5 square meters can be obtained on the upper floor. If two adjacent horizontally based unit cells are considered, possible floor space is more than doubled and is equalized on the two levels. Truly adjacent unit cells are rotated 60° related to one another which accounts for the more than doubling of the floor space in two horizontally based adjacent cells.

Until the space in the tetrahedron is purchased by an inhabitant, it is owned by the state. Thus any purchaser of space must buy it from the state. The selling value of space is measured in cubic meters. The cost of one cubic meter is constant throughout the entire tetrahedron, and equals the cost of construction at the time of purchase. The minimum amount of space that can be purchased is one unit cell. An individual, commercial enterprise, or industrial firm may buy as many adjacent cells as wanted or needed for its desired purposes. An industry may require 100 or more adjacent cells to obtain the floor space necessary for its manufacturing activities, whereas a family may need only one or two cells to meet its space requirements.

Any purchaser of space may sell its own space back to the state at any time for the same price paid to the state less any damage costs assessed on the basic tetrahedral structure. If an inhabitant moves out of the tetrahedron, the price of purchase is returned; if the move is within the tetrahedron, ownership of locations is transferred, and payment is made to the state or by the state depending on damage costs, changes in construction costs, and changes in volume of owned space. In order to vacate space, an inhabitant must return the space to the "skeleton" condition in which it was originally purchased. All walls, floors, additions, and improvements must be removed so that damage costs can be assessed on the basic tetrahedral structure, and the space can be resold by the state in its original naked condition.

Any space purchased from the state is privately owned by the purchaser. The only restrictions on its use are 1. it may only be sold to the state, and 2. it may not be rented to anyone for any purpose. Other than these restrictions the use of owned space is left to the discretion of the owner. The cost of floors, walls, ceilings etc. must be paid by the owner. Fiberglass shells of infinite variety in color, shape, and texture could be used to fill the space with form. Modular partitions designed to fit the dimensions of the unit cells could be easily and inexpensively assembled and disassembled. A market for recycling the modular partitions could further lighten the cost of forming the space in the desired manner of the occupant. The numerous possible unit cell configurations of private space, plus the infinite forms of modular partitions offers the society of the tetrahedron variety in internal architectural designs undreamed of in a box-oriented society. Internal form will replace external form as a medium of architectural design.

Transportation System

Included within the initial design of the tetrahedron are certain zoned corridors comprising a three dimensional network which can be minimally extended to touch every unit of habitation. This network of space is designated as public and may not be purchased for private use. The conduits of life - the transportation, water circulation, air circulation, waste excretion, communication linkage and power transmission systems - are to be formed within the space of the public network. Each of these public systems will be discussed in the following sections.

The network of transportation corridors must provide public access to every unit of habitation in the tetrahedron. Access for an occupant to the transportation network is to be through a system of first order corridors. These corridors are to be the only public access channels for any unit of habitation; i.e. there is to be no connection between private habitation units or between private habitation units and any higher order transportation corridors. The location of the first order corridors within the tetrahedron cannot be determined until the three dimensional private space becomes occupied.

As occupancy proceeds the first order corridors will be located so that they connect to the closest second order corridor in Cartesian space. Second order corridors are located in the original design of the tetrahedron, but their locations may be altered as occupation proceeds. These corridors are to be bidirectional passageways in the horizontal plane. A medium divider, such as flower boxes, sculpted designs etc., separates the two movement directions. These dividers should have numerous connections between the two passage directions, and be low enough (about waist high) to permit eye contact and conversation across the medium. The second order corridors lead into and out of horizontal third order corridors, which are bi-level one way passages permanently located in the original design of the tetrahedron. Each level in a third order corridor contains unidirectional passageways. Third order corridors lead to and from the vertical transportation corridors, a system of elevators located around the perimeter of the tetrahedron. Each elevator is for unidirectional use only. All upward moving elevators are located on one and one-half sides of the overall structure; the downward moving elevators on the other side of a vertical symmetry plane, passing through the tetrahedron. Each elevator has a preprogrammed series of stops that cannot be altered or controlled by persons using the elevators for vertical transportation.

The confluence of third order passageways and the intersection of the horizontal third order corridors and the vertical elevator corridors, large, non-commercialized open areas provide regions that facilitate social intercourse among the members of the community. The parks or agoras, are designed to partially recreate the outdoor environment within the tetrahedron. Closed circuit three-dimensional television images can be utilized to monitor and project the changing visual sky conditions on the roof of the agora. Temperature within the agora can be varied based on a tempered curve derived from mean daily temperatures. A large variety of partitions - trees, rock cliffs, large hanging gardens - are emplaced in the agora to allow groups of people of varying sizes to meet alone in sight but not in sound. The partitions

should be partially sound absorbing to temper the din of constant activity, but emplaced such that no area in the agora is totally isolated in sound from adjacent areas. Many open areas conducive to "lying around" and exchanging personal feelings, thoughts, ideas, and silence in a leisurely manner are located at numerous places within the agoras. Low artificial foam rubber hills covered with a pleasurable feeling artificial grass carpet could be utilized to achieve this required environment. The total environment of the agora is designed to encourage social intermingling on a personal level. To reduce distractions from personal intercourse, the agoras are to contain no areas of commercial activity. No stores, newsstands, hot dog vendors, or leaflet distribution table can be emplaced permanently or temporarily within the agora. No informational or directional signs can be placed in the agora; nor televisions or other entertainment media. Within the agora the only means of experiencing human information exchange is personal conversation and interaction.

Located on the horizontal plane that divides the volume of the tetrahedron in half is the largest of the agoras. This entire level is one huge open area. All vertical transportation corridors have a terminal point at this level where all upward and downward moving elevators reverse their direction of movement. Any person wishing to cross this level in the vertical dimension must walk from one side of the tetrahedron to another in the horizontal plane in order to continue her journey. This forces a large degree of social intermingling of all variety types at the hub of the transportation system.

The transportation system outlined above is an efficient means of providing interconnection between any two points within the three dimensional space of the tetrahedron. If the base of the tetrahedron is 1.0 km on a side, the farthest any would have to walk to reach any point in the building would be about 2.0 km (about 20 minutes at 6 kph, an average walking speed). The combination of two way passages, one way passages, and agoras encourages social intermingling while retaining a smooth flow of movement. The three dimensional character of the system will encourage a three dimensional outlook on the world and man himself rather than the two dimensional perception prevalent ' today in our two dimensional world of movement.

Water, Air, and Waste Systems

The circulatory systems for water, air, and waste are all contained within one three dimensional network of corridors similar to the network of the transportation system. As with the transportation system, each unit of habitation must have at least one point of access to this circulatory network. Each of the circulation systems within this single network is totally independent of the other two systems. Each system is closed within the tetrahedron from the point of input to the point of discharge allowing discharge from a centralized point where effluent modification can be easily controlled.

The water system is a totally closed recycling system. The source of input to the tetrahedron is a well field located in an aquifer with transmissibility greater than 2.5×10^{-4} . After use of the water by inhabitants of the tetrahedron, it is collected at a water treatment center and subjected to tertiary or quaternary treatment. After treatment the water is injected back into the aquifer up gradient from the well field closing the circulatory loop. Some water may be recirculated within the tetrahedron after treatment without being injected back into the ground, but any effluent from the tetrahedron is placed back in the aquifer to assure a continual supply of groundwater.

The air system is an open system with reference to the atmosphere, but closed within the tetrahedron. Intake areas should be located on a regular grid on all three sides of the tetrahedron's outer surface. Bi-directional fans spaced along the circulation corridors can be utilized to help push or pull air through the circulatory network. The movement direction of air flow can be controlled to take advantage of atmospheric pressure differences on various sides of the building, the flow direction always being from the highest to the lowest pressure. At discharge point on the low pressure side, effluent modification devices will remove whatever particulate and gaseous materials are considered detrimental to the atmosphere as it interacts with man. Total circulation time for any molecule in the air should be less than one hour from intake to discharge.

Waste circulation can be accomplished by the use of vacuum and gravity driven flow systems located in the circulatory corridors. All waste from every unit of habitation can be collected at the bottom of the tetrahedron where separation

for recycling or secondary use can be performed. Secondary uses of waste include fertilization of croplands, energy generation by combustion, and aggregate fill for earth surface modification projects.

Information - Communication System

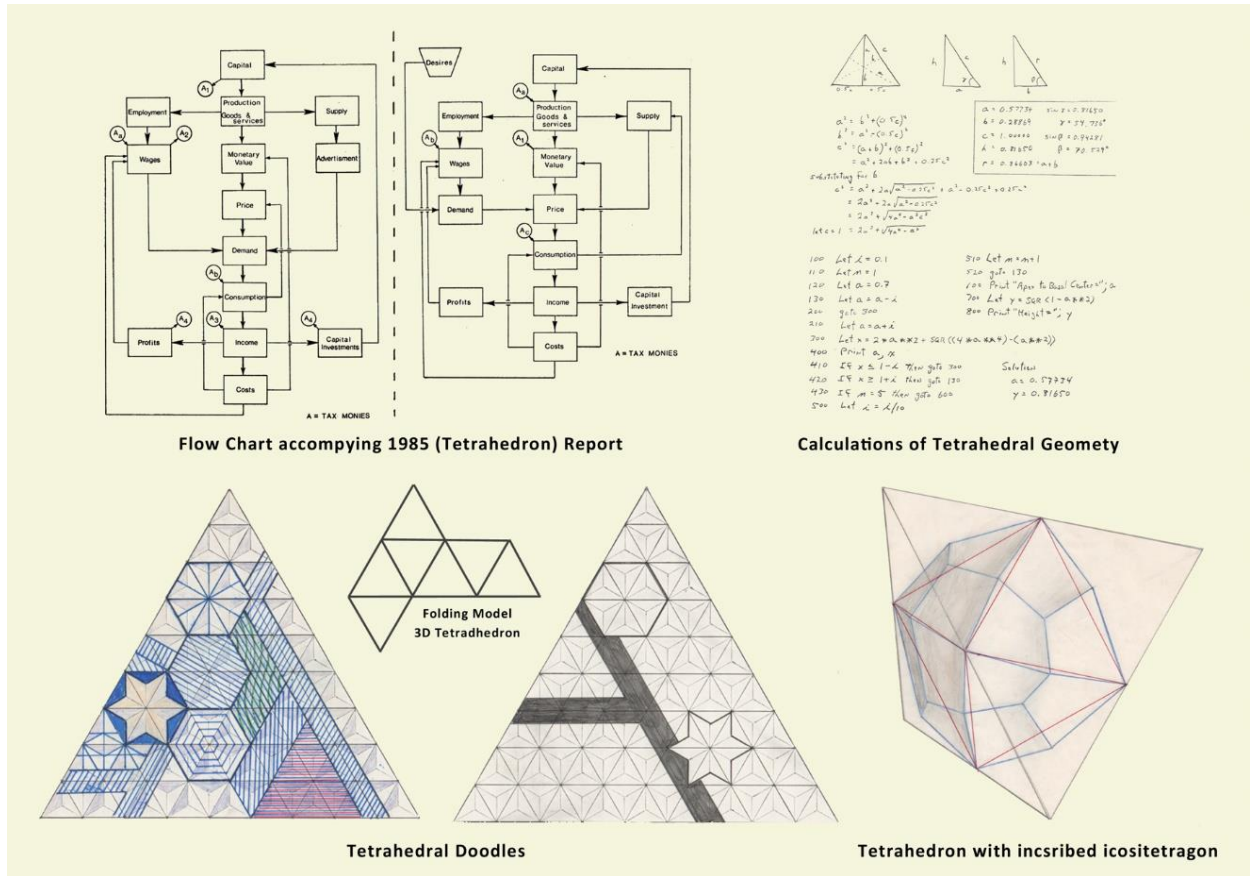
One of the most important facets of a society's character is the technological means by which information is gained, stored, and transmitted. The advent of computers and electronic micro circuitry has produced astonishing changes in traditional means of information flow. The society of the imagination presented here will live in a world dominated by the effects of electrically, machine-stored and transmitted information. A state built and maintained computer shall be at the behavioral, if not the physical, core of the tetrahedron. This computer shall be a library for all published writings, copyrighted films, statistical and mathematical tables, recorded sounds, and all other items of transmittable information. The wisdom of mystics, poets, kings, priests, and soldiers shall be centralized within one electronic brain. The material contained in the -computer shall include an exhaustive index of all items of information contained in the circuitry. The index will be analogous to our present patent index but infinitely more complex. The index shall be cross referenced by author, subject matter, geographic locality, historical period, size of information item, and code number to call the item desired for terminal display. Once the indexing system is comprehended, a user can retrieve any information she desires : a training program to instruct them in the skills required for a particular j-ob; philosophy of Lao Tzu and Camus; or fantasia in a three dimensional audio-visual experience.

An integral part of this computerized system of information storage and transmission is the users retrieval terminal. Each unit of habitation is provided by the state with a terminal from which access to all the information contained in the computer library is possible. The cost of the terminal is included in the cost of skeletal space purchased by an occupant. A state financed training school will instruct anyone in the use of the system language by which items of information are retrieved. Hardware and software capabilities are assumed as coincident with the system requirements.

The communication linkages between computer library and unit cells are contained within the public corridors. Each terminal has a code number which can be used as a symbol for communication links between any two terminals. The unit cell terminal includes a display screen upon which writing, paintings, films, television shows, etc. can be displayed by digitizing processes. For visual media such as film and magnetic visual recording the display can be three dimensionally perceived through the use of laser projections. A three dimensional audial system is included in the terminal hardware. This terminal area is private and inviolate by the state for any reason. The information available to all inhabitants of the tetrahedron is the same regardless of socio-economic status, criminal proclivities, occupational position, or governmental dictates. This computerized information system is the foundation of the tetrahedral society, and the base upon which much of the following discussion is built. A system that provides instantaneous private access to any desired information by any inhabitant of the tetrahedron is my dream and fantasy. The wisdom of sages and the buffoonery of clowns is equally accessible to all.

Power Transmission System

The power required to support the systems described above is great. A breeder or fusion reactor located some distance from the tetrahedron is to be the source of required power. An underground transmission line brings the power to the city, while the public corridors provide the network to distribute the power within the building. The hot water effluent from the reactor can be used to create a park with a series of cooling ponds. Each cooling pond will have its own particular biotic assemblage that can be played with by ecologists and biologists and enjoy by naturalists and cretins. Power is no problem - only the control of power for non-destructive uses is the problem for modern man to solve.



Part II: Flow System

As alluded to earlier, the style in which a society handles its information is a dominating factor in total of causation of selective perception. You are selectively perceiving abstractions that are transmitted from me to you via the intermediary of writing techniques. I am controlling a large part of your conscious perceptual processes, but I am not within your sensual environment. You cannot at this instant exert any control over my thought, but you demand that I exert control over yours the instant you perceive the abstractions symbolized in printing on this page. You hold in your hands an item of information. Various aspects of an information flow system are part of your present perceptual and physical environment. Part is to be found in the meaning your perceptual processes are giving to the symbols printed on this page; part in the symbols I am giving to the meaning my perceptual processes endeavor to convey. Other parts of this system are the pen and the ink in my hand, the typewriter that will transform the symbols into print, tomorrow and yesterday, and the ink and paper in your hand. Two "right nows", both true, refer to different times relative to each other, but the same time relative to each of us two. The flow of information creates and eliminates time.

What is this thing called information, which by movement can be so powerful as to create the universe and eliminate time? To find guidance in answering this question, I turn to the ancients. The Romans combined "in" with "forma" to provide an ancestor of our word "information". Information refers to anything that is in form. I will not attempt to solve the riddle of whether or not form must be recognized by human perception in order to exist as information (the tree in the woods?), but I will list a few examples of things recognized in forms.

The words written on this page are symbols which have a precisely definable form, a series of letters with a fixed form strung in a very particular order. These written words, then, are information. Words can also become information if they are transformed into vibrations flowing through the atmosphere as precisely formed sound waves. Words are forms utilized to convey perceptual meaning from one person to another. Knowledge put in word form is information;

feeling put in word form in information. All words are information, and educational systems which enhance control over words are facets of the information flow system.

The idea knowledge and skill required to make a chair have been transmitted to the form you now sit in. Material objects all have form; forms unaltered by man are information about non-human activity, forms altered or created by man are information about man. Historical information is contained within the architectural forms of the pyramids; psychological information is contained within the forms of the products we desire and demand today. The flow of materials (man-made forms) through the economic system is another type of information flow.

Our abstractions of freedom, liberty, democracy, constraint, tyranny, and monarchy, are all transformed into organizational forms. The form of government in a society is the concept of government in the minds of people within the society put in form by laws and guns. The political system which constantly changes its form is yet another facet of information flow. The total system of information flow is a closed sphere containing the movements of all mass and abstraction with form. All portions of this sphere are dependent on all other portions for their character and velocity of movement, but the following sections will consider the educational system, the economic system, and the political system as separable entities of the total information flow system of the society of the imagination.

Educational System

Given a possible access for all to the computer library and the knowledge that a human being will learn what she deems necessary to obtain her desires. The society of the tetrahedron will provide no compulsory or optional public primary education. The onus for internalizing the rudimentary information necessary for life sustaining activities falls on the individual and small private organizations, the family and peer group. For a developing child living in an environment that offers instant retrieval of any informational item, learning of academic skills and accumulated human knowledge will depend in large on the proclivities,

interests, and areas of expertise of the child's parents, and personal associates. Included within the library are various programmed learning courses that will facilitate mastery of the basic academic skills, reading, writing, and arithmetic. When and if the child learns these skills is left to the discretion of the child and his parents. No private tutorial institutions of learning may be established within the space of the tetrahedron, but a tutor may be solicited into the home of the child with money or friendship. The child's home is to be her own learning center.

A system of secondary education is to be assisted by the state. The cost of space, facilities, and instructors necessary to offer directed learning in specialized areas will be paid by tax monies. Admission to the secondary education system is open to anyone, child or adult, and contingent upon successful demonstration of minimum academic skills and accumulated learning by the applicant. A test designed to ascertain the possession of the required skills and knowledge by a person desiring secondary education is administered by an education board composed of tertiary education tutors. The test is closed book, monitored, and exhaustive. Minimum skills and knowledge required for successful passage of the test are comparable to but more inclusive than those required to obtain 600 on the present SAT test. Subject areas tested are language (both reading and writing), mathematics (calculus mastery), art, history, psychology, biology, geology, ecology, chemistry, physics, politics, economics, sociology, philosophy, and computer programming. A separate test is offered in each area and once successfully completed need not be taken again. A test in any subject area may be taken as many times as desired until the test is successfully passed or desire abates. Admission to the secondary education system is granted upon an individual's demonstration of minimum required learning in 80% of the subject areas.

Immediately after admission the student is given another series of tests in each of the above mentioned subject areas. Each of these tests is considerably more inclusive than the admission test. To obtain a "degree" the student must successfully pass 64% of these tests (80% x 80%). These advanced tests are all open book (or open computer as the case may be), non-monitored, and possess no deadline for completion. Courses in each of the subject areas are offered to assist the student in answering questions, solving problems, and formulating hypothesis necessary to complete the tests. Since the only requirement for a degree is completion of 64% of the open book tests, no tests, grades, or credit

are given for the offered courses. The courses are merely to assist the student in his self-continued learning environment.

Successful completion of a secondary education degree allows admission to the tertiary educational environment. This environment offers the student the opportunity to pursue her interests in a chosen field of interest under the direction of a tutor. Again, as in secondary education, the costs of this learning environment are paid by tax monies. Each student works directly under a tutor who guides the student through a series of learning situations. The completion of this phase of education is totally dependent on the subjective evaluation of the tutor. Granting of academic certification by the tutor to the student certifies the student to herself become a tutor.

The function of the educational system is to create an environment that opens the world of information to an individual who is then able to self-create the tools necessary to form a perceptual foundation of complete knowledge. Its function is not to train operating units that are necessary for maintenance of a progressive economic system.

The training skills required for functional operation of the industrial machinery is also obtained through non supervised use of the computer system by inhabitants of the tetrahedron. The computer library contains training programs to instruct users in the skills required for performance of any specific job. Upon successful completion of a specialized exam, which determines if the skills required for a specific job are in hand, a person may apply for work in the job area covered on the exam. The exams are designed and administered by the employing organization. Reference lists are included on the take-home, open book exam which cite items of information that will assist acquisition of the knowledge necessary for job performance. Once a person has applied for a job she remains on a list of job applicants from which hired personnel are randomly selected. Exams exist for every job that is available in the tetrahedron and must be passed before application for employment can be considered. Certain personality traits may be included as part of the job requirements, but must be specified on the exam and measurable by examination. As with the educational system for academic knowledge, the training system for functional skills is dependent on individual self-motivation and learning. The whole education training system of learning in the tetrahedron is founded in the belief that if total information is available to all, the psycho-ecological niches necessary for the functioning of the society will all be filled. What these niches are is a matter of conjecture reserved for later.

Economic System

The information flow within the economic system of the tetrahedral society shall be through the medium of a minimally restricted free market. The states attitude shall be essentially laissez-faire. There are two areas in which the state can exert influence on the free flow of money through the economic society. The first is at the loci of withdrawal from and injection into the system of tax monies. The source of government income is limited to taxation of a producer based on the monetary value of the goods or services produced. The monetary value of a good or service equals the cost of production of that good or service. Taxes are equalized for all producers in that the tax rate is constant applied to the monetary value of each item produced. Depending on the state's demand for tax monies the withdrawal of money from the system can be as large a proportion of the gross tetrahedral product as allowed by the decisions of the political system. Other facets of the flow system of money such as prices and wages shall adjust to the conditions imposed by tax removal on production by centralizing the source of government income in one place, the society shall lessen the options for governmental influence on the flow of the market; allowing the ups and downs of the laissez-faire system to manifest themselves.

The distribution of tax monies into the system shall be more diversified. Four areas of state spending are 1. to provide the subsistence level of food and clothing to every person living in the tetrahedron regardless of her economic status (i.e. every person, adult or child, living in the tetrahedron receives the same welfare payments), 2. to provide services desired by the political system, 3. to provide capital, wages, and consumption costs necessary for the manufacture and maintenance of the central computer library and its remote terminals, and 4. to patronize any living author, painter, film writer, musician etc. who has produced information stored in the computer. Patronage payment is based on a fixed rate per time the item is displayed on a user terminal. Anyone can enter information into the computer, but no patronage payment is made unless the information is used. The holder of the copyright of an information item may include a cost that must be paid to the holder before display on a remote terminal can be effected. The author and copyright holder may not be the same person, so the tax monies serve as patronage to information producers, whereas copyright holders, such as a publisher or an author must pay taxes on the costs of the service rendered to society by

entering an item of information in the library files. Other uses of tax monies are left to the discretion of the population of the tetrahedron.

The second area where the state exerts control on the market system is through the power to dictate the prohibition of advertising. This is a form of indirect control on the market which facilitates rather than restricts a laissez-faire system. It creates a system based on individually internally created demand rather than on collectively externally forced demand. Public soliciting of attention for any good or service is strictly prohibited. Public soliciting refers to the use of any medium which offers the solicitor an audience that cannot respond by direct personal conversation. Examples of public solicitation media are television, radio, newspapers, magazines, speaker's podiums, books, matchbook covers, product package covers, store window displays etc. etc. In a non-advertised environment the creation of demand becomes an active process of perception based on an internally conceived desire, rather than a passive response for an externally created desire.

The availability of consumable products shall be listed in an index comparable to the informational items index. This list shall include all goods and services that may be purchased by an inhabitant of the tetrahedron. It can be called for instant display on the user's remote terminal. The index includes a description of the product in terms of function, cost, expected time of use before likely malfunction, chemical composition, physical description (visual, olfactory, aural, taste and texture where appropriate), size, producer, date of introduction into the market, and number of items purchased. The index is cross referenced by function, brand name, and producer. New products and improvements on old products are listed as a subgroup within each functional category. The expected time before malfunction is estimated by the producer and included in the description. A comparison of a producer's estimate of time to malfunction with the statistically determined likely time to malfunction for old products sold by the producer can give a prospective buyer a feel for the accuracy of the producer's estimate. Grapevine information is the means by which inhabitants can obtain value judgement concerning a particular good or service. Is coke better than pepsi? Without sexual fantasies to tickle our answer to this question, we may decide that the question is absurd, and quit asking it.

Political System

If we are returning to a global village, we must also be returning to individual participation in societal decision making processes. A centralized computer with an access terminal in every unit of habitation offers the tetrahedral society the technological capability to assume the responsibility of a participatory democracy. A subsystem of the library-information retrieval system allows access to an open channel of audio-visual communication linkage. This is the medium of the tetrahedron's decision making activities.

This channel is open at all times to all terminals. A continual dialogue among individuals of the society can be carried on through this medium of communication. Any person may enter the dialogue by "asking" to speak. A particular symbol entered into the terminal by the individual indicates her desire to gain the floor. A computer program randomly selects the speaker from all persons who have entered the "asking" code. "Asking" occurs at five minute intervals or whenever the speaker indicates by a disconnect code symbol that she is finished. Thirty seconds before the five minute speaking interval is over, a signal at the speaker's terminal informs her that she has just about used up her time. At this time she may ask to hold the floor. All participants can vote yes or no on the speaker's request. If 500 of those voting say yes, the speaker is allowed another five minutes; if no, the speaker's terminal is disconnected, and a new speaker is randomly selected from the new "askers". During the five minute speaking time, a speaker may yield the floor to any other participant, who then becomes the speaker and may ask to hold the floor.

At any time during the continual dialogue any speaker may enter a proposal for legislative decision. A proposal must be submitted to the computer system in a form that can be reproduced at every terminal (i.e. in writing). A proposal is immediately reproduced at every terminal and stored in a file of all proposals. At any time after a proposal has been submitted, any speaker, other than the author or person to whom the author yields, may call for a vote on the proposal. A vote is then taken among all participants in the dialogue at the time the vote is called for. Voting is accomplished by code entry of yea or nay by each participant at her terminal, and immediately tabulated by the computer. If 60% of the participants vote yes, the proposal becomes a bill; if 40% vote no, the proposal is erased from the proposal file.

Once a proposal becomes a bill it is stored in a file that can be called at any time from any terminal. The file is listed on a channel in a manner that allows easy retrieval of a complete reading of the bill. The list includes bill title, date of proposal submission, date proposal became a bill, date of the voting period on the bill, code number to call the complete reading of the bill, and voting identification code symbol. The list is cross referenced by subject area of the bill. Thirty days after a proposal becomes a bill, a two week voting period commences. At any time during this two week period any inhabitant of the tetrahedron may vote on the bill. The tally is automatically accumulated by the computer, but is not printed until the voting period is over. At this time the bill, with the results of the vote, is shifted to another channel. If 70% of the voters cast a yes vote, the bill becomes law and is placed for 60 days in a file of new laws. After 60 days it is again shifted to another file containing all laws. If 30% of the voter reject the bill it is shifted to a file of defeated bills, where it sits for 60 days before being erased. At any time during the 104 days following the acceptance of a speaker's proposal, any bill may be privately read, researched, discussed, cussed, or ignored by any of the inhabitants of the tetrahedron. An extended voting period of two weeks allows ample time for anyone to vote if she so desires. Voting periods on different bills will overlap in the society's political dialogue, demanding continual participation of the inhabitant. Participatory democracy demands attentiveness on the part of the society's members, unless they are willing to allow the political machinery to slip into the control of a small proportion of the population -risking frightening totalitarianism. The choice is the peoples; the power is the peoples; the dispersion of that power may produce the political extreme from the organizational theory.

Part III: The Philosophical-Psychological Milieu

Living

A state of existence we take for granted in the act of living, is a state of existence we refuse to take for granted in our thoughts. We live knowing not why we live. We live only to die, knowing not why we die. Our universe is born when we are borne; it dies when we die. Our time is the measure of changes in our universe. Our universe and our time exist, but we know not from where they come or to where they go. That which is outside our universe and time is unknowable.

Living demands action. The need for energy to produce movement to obtain energy to produce movement is the circle of life. That the chemical reaction may continue, it must continue. We must eat, and act to obtain food. We must live in an environment compatible with our life requirement, and move to remain in such an environment within the changing conditions of the universe. Life needs not know why it moves, it needs only move.

To ask why is to know the unknown. To know the unknown is both knowing and not knowing. Knowledge is ignorance. The more we learn the more ignorant we are. Motivation is the knowledge and the question of why we do the things we do. The human, knowing, being, once enlightened with the abstractions of space, time, rationality, and emotion needs diversions from the necessary life sustaining activities to give life "meaning". Value systems emerge. Subjective concepts of alternatives of action and non-action and their anticipated effects are divided into desires and aversions. Primary motivation is the subjective concept which fosters directional movement toward desires and away from aversions.

The motivation of an individual is totally dependent on the possible alternatives of action as defined by the total environment. These limits are changing and finite in the physical environment. Movement in space, toward or away from, is limited by one's physical access to available transportation. Movement in time is also limited by the available transportation (i.e. the relative velocity-time relationship which for now restricts man to very little controlled movement in time and within a fixed fate of movement from birth to death.

Within the mental environment these limits on motivation are also changing and finite. Here, the limits are defined by the individual's desires and aversions. Desire and aversion are internally created and changeable at any time. They are within the power of the individual to control, given the uncontrollable limits of the physical universe. The range of possible movements toward and away from is a function of learning, which determines the knowledge and imagination upon which desire and aversion can be built. Knowledge is the concept of what can be known, imagination of what cannot be known. These derive from total sensual and perceptual activities, plus inherent capabilities for memory and memory organization.

Controlled movement in time is possible in the mental environment. Movement toward a desire or away from an aversion can be slower or faster depending on the chosen alternative of movement. A secondary value system emerges. The velocity of movement in a given direction of movement is changeable and valuable.

The limits of the mental environment may be more restrictive than, coincident with, or more inclusive than the limits of the physical environment. A more restrictive mental environment means that knowledge is complete and imagination is less than potentiality. Coincident environments exist when knowledge is complete and imagination equals potentiality. A more inclusive mental environment is obtained when knowledge is complete and imagination exceeds potentiality.

Cretins

If mental limits are more restrictive than physical limits, two motivational sets are possible contingent on imagination being illusory or coincident with the individual's reality. In the first instance, the cretin will experience continual frustration based on movement toward self-determined non-realizable desires derived from an illusory concept of possibility. The continual frustration will eventually lead the individual to externalize decision making about desires and aversions. The externalization is to a source that will hopefully guide movement toward a desire which can be

satiated. The hope for benevolence in the chosen guide stems from a sense of futility in self-directed movement based on illusory desires. Throughout history cretins have externalized their subjective concepts to priests, kings, and friends through the institutions of religion, state, and style. Kings and priests set the directions of movement while friends judge the velocity by conciliation and ostracization. Increasingly, advertising has become the means of kings and priests to provide the directions and friends to judge the velocity.

If the cretin possesses an imagination based on realizable desires, direction and velocity of movement are continually satisfying. Desires are not compared to those of others and judged as inferior or superior, but are, rather, self-derived and incomparable on any scale. Imagination being less than the possible, leads to a life of simplicity, ignorance, and meaning that is completed and inviolate.

Phenomonalists

Phenomonalists are those whose knowledge is complete and whose imagination is coincident with potentiality. Desire and aversion are internally created and based on approaching what is possible and avoiding what is impossible. The manifestation of this motivation can take an infinite variety of forms.

Motivation can be directed to learning as much as can be known for the self-fulfilling values of information possession (academic hermits); to utilizing complete knowledge and nonillusory imagination as a tool to shape the world and self into their potential forms (entrepreneurs and statesman); and to utilize knowledge as a tranquil surface upon which to float in a quiet world of non-illusory imagination (mystics). Phenomonalists are the rarest of all bugs, hidden among the clamour of interaction between cretins and phantasmists.

Phantasmists

If the limits of the mental environment are more inclusive than those of the physical environment, a state of mind possessed by phantasmists emerges. Knowledge is complete, and imagination exceeds potentiality and is necessarily illusory. The knowledge of illusory imagination follows from complete knowledge, but is ignored in lieu of the pursuit of illusion. The pursuit of illusion conceives motivation to approach what is impossible and avoid what is possible. The impossible is a state of being that is desired as an "ought to be"; the possible "will be" is avoided as a deformation of what is desired. In comparison to the imagined illusory state of being, the present reality and future possibilities become aversions. The call from the frustrated cretins for direction impels many phantasmists to sanctimoniously inform them of the "rightness" of what ought to be and the "wrongness" of what is and will be. Priests are phantasmists. If more direct means of guidance for cretins are required, priests become kings and force cretins and the world toward illusion with the power of guns. The cretins will follow based on their hope in the phantasmists benevolence, never realizing that the phantasmists desired movement direction will also lead to frustration as a consequence of their illusory desires. The phantasmist-cretin team is a powerful combination that drives societies to build towers of Babylon and tetrahedrons. The phantasmists, as the cretin, does possess the potential for non-destructive action. If illusory imagination is transformed into dreams and transcendence, a gnostic hermit may sit in a cave and laugh at the world as it passes his window.

Sociological Milieu

The interaction of cretins, phenomonalists, and phantasmists occurs in all cultures. Within the tetrahedral culture the introduction may manifest itself in any of an infinite number of ways.

Thesis: 1985 is the beginning of the post-industrial, enlightenment

Antithesis: 1985 is one year after 1984

Synthesis: ?

Part IV: Appendices

Appendix A: Case Study of Effects of No Advertising (slightly edited, June 2016)

I. A case study in outline form of some of the effects. of one of the proposal changes

II. Effects of the elimination of advertising from the economic system

A. Effects of advertising on the present idealized economic flow system

1. Explanation of flow chart composition

a. a closed system with no initial or terminal reference points (i.e. a spherical system)

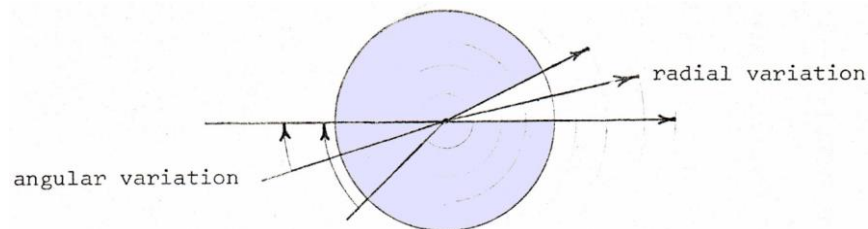
b. a continuous flow system which is arbitrarily broken into 15 discreet parts

1) each segment represents an easily symbolized group of elements of the total system

2) elements represent different angular and radial locations on the 3 dimensional sphere of the total system

a) radial variations represent differences in scale (individual, corporate, city, state)

b) angular variations represent different element locations on singular subsystem of a given scale



3) flow system generalizes angular and radial variations into 15 groups to obtain a simplified diagram

4) any group of elements can arbitrarily be chosen as starting point to describe the system flow

2. Flow system dynamics (i.e. system flow)

a. Capital: the total materials, facilities, machinery, and power required to produce a good or service

b. With dynamic interaction of these elements, production of a good or service is obtained.

1) a good is a material finished product that is purchasable by a consumer (an individual may buy nails or a construction firm may buy nails, in which case one item of production becomes capital for another firm)

2) a service is a non-material purchasable product

c. Production has three products

1) part of the power (an. element of capital) required for drive of the system is manpower, so one product of production is employment for men and women

2) a good or service becomes available for consumption as part of the supply of purchasable products

3) Production requires investments of capital, time, skills, and ideas, the costs of which determine the monetary value of the product

a) monetary value is the actual costs absorbed by the producer in producing a single item

b) the sum of dollars spent on a product at the time of shipment or rendering (if a service)

d. Each Product has a direct consequential product which can be symbolized in this flow system

1) employment creates wages

2) monetary value is the accounting base for the price consumers must pay to obtain the product

3) supply must be advertised to make its availability known to possible consumers

e. Wages, price, and advertising interact to establish criteria for consumer decision making (i.e. demand)

1) wages, including profits of corporations, determine the total amount of money available for consumption

2) advertising informs consumers of available products and forms or reforms concepts of anticipated effects of product consumption.

- 3) price establishes a standard of reference by which a prospective consumer can compare the proportion of wages necessary to obtain a product with the anticipated effects of the expenditure
 - f. based on the criteria of anticipated effects vs. percent of allocated wages, a decision is made to use wages for consumption of a particular product
 - g. the cost of consumption for the consumer is income or money received by the producer
 - h. income monies can flow three ways
 - 1) to pay costs
 - a) as already mentioned costs=monetary value
 - b) part of costs are consumption of raw materials which are needed for production. These costs reenter the system as consumption expenditure
 - c) part of costs are wages paid to employees and reenter the system as wages
 - 2) into profits which are wages of stockholders, partners or individuals
 - 3) into capital investments which increase capital and expand or maintain production
3. Governmental interaction with system flow is obtained through withdrawal and insertion (fucking the system) of tax monies
- a. taxes are withdrawn in a variety of subtle ways, the four most obvious are:
 - 1) A_1 = property tax, inventory tax, license plates, taxes based on assessed value of capital
 - 2) A_2 = personal income tax
 - 3) A_3 = sales tax, gasoline tax etc.
 - 4) A_4 = corporate income tax
 - b. these monies are then inserted into the system in 2 ways:
 - 1) A_a = welfare payments, administrative wages, maintenance wages, bureaucratic payoffs
 - 2) A_b = services (e.g.. road construction, redecorating the mayor's office etc.)

B. Advertising affects every other part of the flow system directly and indirectly

1. advertisement in itself is an industry with capital, wages, production, acts as a consumer, hence direct effects.
2. indirect effects result from the continuous nature of the flow system - every part affects every other part

C. To ascertain the actual effects of the elimination of advertising on the economic system would be impossible, some conjectures effects can be seen however:

1. Desire, internally created by cretin, phenomonalist, or phantasmist, becomes a major determinant of demand
2. Selling of products is replaced with buying of products
3. Internally created desires are less than externally created desires - so demand and consumption will decline
4. Material possession, growth, and display (present cretin value system based on advertising) will be displaced with illusion possession, variability, and private consumption.
5. The world will be a hell of a lot better off

Appendix B: Some Questions?

Values, how do I get at the values involved? What must human beings do in order to maintain a desire to live? What will the mind do if technological (machine) slaves make the time of work necessary for maintaining life very low (4-5 hours per week)? How can motivation be maintained in a milieu of increased leisure and static or decreasing resources available for allocation? Is there a resource supply limit to technological expansion in terms of quantity produced? quality produced? Can humans accept as morally tolerable the values of efficiency in sustaining biological functions? Will greatly expanded access to information, entertainment, people, and mind altering drugs be sufficient to fill the void of leisure time? Will it be necessary to fill the void with anything? Does the human mind contain within itself the ability to occupy its own voids? Does leisure possess its own self generating rewards? What drives people? Can the drive be directed by psychological engineering or free access to unlimited information? Can human culture move away from material possession and tangible manipulation of the material environment for human use, toward mental possession and intangible manipulation for understanding the existent materials (internal and external)? Is it necessary for all, or even many, to reach for knowledge? It is necessary for all, or many, to be satiated with fantasy in entertainment, euphoria through drugs, and illusions through sex? How much work will it take to allow universal access to the information-entertainment-communication-computer system? Will the human spirit survive? In a few, in all, in none? Is it good or bad for the spirit to die in a few that is may survive in many? Is it good or bad for the spirit to die in many that it may survive in a few? Can the spirit die or does it just change to a new form? Is dehumanization possible in a human being? Or is it a shift in values? How will the political system operate? Does the tetrahedron interact with other segments of society or it is self-sufficient? What questions are local enough to be decided through the participatory dialogue? What controls does this society have over interactions with other societies? the state? the federal government? the surrounding rural residents that supply its food? If it has any controls over inter societal interactions, what is the documentary basis for such power? If this system does not have control over external interactions, what system does? What external controls override the internal decisions of the tetrahedron? If the people, through the dialogue decide to pursue a course that can be demonstrated (scientifically or otherwise) to be self destructive does the society possess the right to continue its course? Or are there scientific controllers who possess veto power? Will the people within the tetrahedron possess the mental powers to comprehend and rationally evaluate questions of scientific imperatives? We must if we are to survive as a viable species:

Appendix C: Taoist Poem

For those who wish to change the world for the better,
It is wise to remember the relation between right and wrong
*If you wish to make the world better by taking away a wrong,
You must also take away a right.
Or if you wish to add a right
You must also add a wrong;*
For their relationship is such
That you can't have one without the other.

18-

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Dr. Paolo Soleri
Scottsdale, Arizona

receipt covers date of July 25, 1973

Dear Mr. Soleri,

About two years ago I glanced at part of an interview by Playboy Magazine in which Buckminster Fuller was the interviewer. He mentioned a city in the sky (or the ocean or the antarctic ice cap, I can't remember) enclosed within one building. This tickled my imagination, but I soon forgot it. Then, this last spring I was participating in a course on science and public policy here at Purdue. The teacher gave us an open format for a "project" upon which our grade was to be based. From my circuits of stored but forgotten memories emerged the idea of a city in a building. I chose to expand this idea for my class "project." Enclosed is the fruition of three month's efforts toward that expansion: a paper entitled "1985."

Subsequent to receiving my grade (F -- the paper was not germane to the content of the course), I sought feedback on my ideas from other sources. I constantly encountered "very interesting, but what are you talking about? It's not germane to the problems at hand." Finally from two divergent sources I received your name as "one working with things like that." After wading through the usual amount of beaucroatic ignorance, I located your Arcology medium in one of the obscure recesses of Purdue's decentralized library.

I read your book. You are working with things like that! Also contained within the words, if I interpret them correctly, is a call for students with predispositions (or part dispositions) similar to your own. I submit "1985" for your review and consideration. Due to the similarity between Arcology and "1985" in terms of philosophy, content, organization, and scale (minitarization), one might suspect plagerism on my part, but I assure you my preface lists my sources of information, and you were not one of them, nor was any person with an arcologic perspective. When I read your book, I was both elated and disappointed: elated that another mind conceived an attainable future beyond prescriptive remedy based on an autopsy of the past, and disappointed that someone had beaten me to it.

The copy you have contains my original drawings and my only first generation reproduction of the text, so I would be very appreciative if you would return the manuscript to me at the address on the letterhead. I am

Scott Sinnock