"THE INFINITE CITY"

("Cities in the Future")

by Pat Gunkel

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continues to p 116 + ~15 pp. of appendices!

Astylogy—"science of the city"

* written brachylogically

Cities in the Future

It's already apparent that our already existing cities are examples of unsteady and indefinite change, of human error and of the ignorance and harmfulness of the past. Yet it is arguable that a case for cities having some form far in tomorrow is possible and not altogether misleading. So many books have been written on the city recently that another book seems almost unnecessary. But these books have all, in my eyes, been visions of cities neither far removed in time or novelty--as to artistic or technological form; my conviction is that this normalcy has misleadingly ignored images and suggestions of the more ultimate city. And this in many ways, eg disregarding variable societies within the city. Although I think a valid and pointed argument is possible as against emotionalism to the future, meaning eg that there are psychological bases and errors in various values of future-orientedness which are often of an extreme subtleness and bad fortune, and intend to employ it as apposite hereunder, also I think i) momentous and unprecedented, prolonged change will continue to occur and increase throughout all the areas that are important to man, so that even fixed cities will experience repeated mise-en-scenes and ones which'll affect directly the relative character thereof, ii) intellectual and political advance preparation is crucial and desirable, iii) the future requires a "morphological" treatment whereby the range of possibilities are disclosed as interrelated alternatives, iv) current cities and cities proposals and philosophic theories highly deserve criticism, and in order to cause, through, action of a relevant structure, v) this discussion will serve to encourage independent extension and creation of the larger possibilities.

It might be disagreed, that the uniqueness of this farthest analysis solely warrants and supports it, by some of the reasons: results must be either fragmentarily or unitarily, erroneously utopian; they will be rootless and fictitious; they'll constitute an evasion of the important, unsolved problems and possibilities of modern and nearer-term cities; no extrapolation or engagement of scientific knowledge on this scale is sensible, flux will distort and evolve the urban fields far too excessively; coming cities will partially or wholly be designed and instrumented by considerations and techniques (eg computers) so that no man, now or tomorrow, will have the power to foresee, criticize or grasp the raisons d'etre for qualities of the cities; conservative or revolutionary secular developments will belie fantastic cities; the task of the book shouldn't, and couldn't, be the work of an individual; that this intentionally all-encompassing book can be destructive, by futilely encroaching on the dispersed efforts of myriad others; this book may be somewhat premature, since the forces shaping future cities may shortly become substantially plainer, and primary construction and occupation should supply most instructive cues; that the effect of confronting simultaneously such a multitude of conflicting and divergent cases and considerations will be popularly, hopelessly schizophrenic and estranging; etc. Some of these anxieties seem strong to me and evoke no rejoinder, shading off into wrongheadedness; some so strong that I belong with them, finally, though find it impossible to dismiss the compossible value of the book, itself. To a degree this book, which necessarily must be rather vague and unargued or undocumented, serves a symbolic function; I am a politician and master student of values, and generally recognize that humanity has many unusual and hard obligations to, reversely, meet.

* advantage of an immobile city is that it & its building act as its own map.

It's typically inaccurate to abstract and place a past and present concept in the future, so I think true with "cities"; architecture already studies metropolises, megalopolises, conurbations, "urban regions" and approaching "ecumenopolis", as well as some areas of great size only partly, figuratively or inevidently "cities", or that by virtue of their partaking of aspects, in abstract space. And it may be difficult to distinquish cities, without recourse to arbitrary incorporation or acceptation: cities may grow until they surround a mountain, lake, smaller town, national park or productive mine, acquiring new status, as cities; cities may impinge upon and bound one another, conurbations may over-swell large cities (interpotentially) and generate transcendental administrations, cities may become intensely linear, even serpentine; very important persons, activities, landmarks, institutions, relationships and features may disappear, move or alter; temporal erasure of distinctive pattern. One could imagine a tessellation of the globe into numberless tiny, 100-soul 'cities' ('super families'; people), with exiguous or unfamiliar connective regard; ultra-dense and extensive metropolises regaining decentralized, multi-city organization (as a disintegration of both New York and its 5 boroughs; reactivation of absorbed abeyant units; a scientific redistricting); specialization of old and new cities, eg depopulation of a totally automated, anthropophobic industrial city or, conversely, building of a subsurface nonhuman mechanistic city; steric or mobile* cities; cities as mere aggregations or congregations of coming-and-going units; cities as specialized or special areas; extraordinarily 'flat' cities; raising of many of the autonomous and functional city aspects; extremely central, distinquished and organized cities (apotheoses); intrinsic, as opposing extrinsic, apotheoses; cities with spectra of control of citi-

zens; cities as unitary objects of art; extremely homogeneous v heterogeneous cities; extremely static v dynamic cities; heteronomously v autonomously built; etc. It might be argued that rightfully but two concepts may be followed, rather than the announced one of this book; the ecumenopolis, and varieties of cities in transition to the same in near-futures; but the timescale and certainties are polyvalent, and it is at least of interest, theoretically, to ponder a variously decentralized ecumenopolis, a composite, or a slow-forming one. Even if it seems probable that far-future seperable cities on earth are unlikely, astronomic voyage may entail the setting-up of far-future and revolutionary varied and initially or finally small-scale cities. And if it seem, as it does to me, that shortly the term of man will end,-he being replaced by something grander, indescribably different, artificial--the vaguest outlines and senses of the elevated and morphologically distinquished city and cities here begot may heuristically resemble the transhuman 'life's artifice, just as the latter, though difficult or imaginary of anticipation, might enlighten the former.

Personally, I think we've reached point where the old and large new cities exceed human capacity, in their static and dynamic requirements, and where it coincidentally happens that computers and cognitive machines will, after a costly but provocative delay, be thrust into, and convert, the overall picture. By this I mean that desirable differential optima or maxima only seem possible,-not necessarily exceeding human appreciation or pertinence, particularly re rescuing our sick and bewildered 'new' and old cities,-by an expansion in 'intelligence' beyond man. Now, it's been suggested that powerful computers and communication systems (etc)

*(not so coincidentally; technology is of nature overtaking)

X expect a new breed of 'urban poets.'

will serve as aids, indicators or symbiotes, thus upping the 'intelligential' capability of men, or that other means will be found for human intelligence extension; whereas I agree, cannot post a limit and find the eventual scopes mysteriously intriguing, I believe that what might thereby occur would be an unnecessary group of delays and a distractive mistaken imposition of an essentially lesser decision-maker upon an evolution intrinsically more promising or appropriate. Apropos, what degree of continued and complex 'evolution' is possible for future cities, run in both these ways, but considered purely? Answering this question entails and invites search for and adoption of dimensional and limitational characteristics or affectors, in which, eg, certain designs may be inscribed and differentiated. One continues to wonder whether hierarchic characteristics aren't so systematic as to defer premature or nonexperimental, nonempirical analysis, and whether the complexity of the considerations,-such as random, post-random and self-conscious anthropological nonlinearities, and the entanglement of multivariancies, dynamic and adynamic--doesn't kill human or author's comprehension. However, I feel that single patient men could 'design' whole cities, esp with life and mental prolongation; that teams might revitalize, rationalize and recreate or even create better and workable cities; that a governmental refitting or reorganization is necessary for a direct human role and would allow the above (and that it might be sophisticately democratically staged, eg); that oncoming S&T will permit, if bowed to, simplification of i) effective urban creation and ii) types of variegation, perhaps subservient to local and individual judgment and commission. Some of the real problems of present cities are social or, esp, ethnic, causing misdirection and abortion of energy and ideas, and the general psychology.

It's ironic that just when psychological analysis would be pivotally important, such analysis is both methodologically and re skills so impotent and lacking. It's questionable whether the complexity of human systems, such as in the world and city, is susceptible of a strategic analysis, that required, as also whether the crisis of naturally being 'worked out' will be too violent; one might draw a conclusion if world meteorological systems prove amenable to good predictive analysis, as the question is over macroscopic v microscopic regularity and control; political and 'educational' suggestions must be reinterpreted, eg a la "peace research". It is uncertain whether the temporal or numeric--if controllable--magnitudes are dominant, whether arguments for the reduction of these sizes might achieve a lessening of the threats and conditions of groups and personalities, or suppurations; I think today's anarchies are attributable to the absence of an understood, valid relationship of conscious individuals, through the lifetime, to ideals (psychagogically); to extra-individual, social and cumulative effects; to the possibilities of the individuals in society, rigorously and detailously; perhaps to animal discipline of the youth of the individuals (adulthood made free, for poise); to valuable types of thinking, feeling and acting. It is this state which invites reflection on the "nature" of man, recovery and fate being what is responsible; a caveat is basic, since all speculation, primary or secondary like mine, may be illusive. The danger is when procrastination, amnesia, nomology, strife and quibbling atop or a center may prevent primary responses, or any, to the troubles, or the brilliance and novelty essentially requisite; hence the city is often written off as a fundamental "machine". This flaw is of course accented when the mobility of the "leadership" and occupants is high, however high.

Two books are independently needful, one an encyclopedia of terms, concepts and aspects of the 'city', another a collection of speculative proposals and analyses, in brief form, on the city written by esp imaginative, intelligent, experienced, expert, naive or lucky chaps (a la The Scientist Speculates). Two sciences are needful of creation and development, an 'urbanology' and 'demology', the last a science of dealing with mass possibilities of men. It's desirable to have an eminent thinktank apply itself to the 'negro predicament', and to the 'city future and predicament', both demanding some radical rethinking; it's possible that some cathartic fervor, enlightenment, large-scale application and investment, and holistic redirection might occur, plus wisdom, new ideas and new personality; it's possible that an experimental attitude and practise towards the city, a psychology of the city as tentative, transient and evolutionary, citizen deep intimacy with the 'city as felt and idealized', might ensue, or be eventually instigated. Later I'll discuss the possible psychology of the city, or ideal psychotopias. It's hard to discuss or evaluate city versions and values, futurally, since men judge by being accustomed, and prejudgment has a tendency to be sidetracked into a few modalities; but this suggests an unusual opportunity, in that one must and can disregard certain 'superficial' considerations and focus on really very plastic and unexplored possibilities, in the large; eg one might note that The Emerald City of Oz was a delightful fiction from its viridity, and make imaginative cities all greens or blues or reds; or note other insistent, qualitative proportions in past cities, such as degree of individuals' decentralized construction, excessive concrete or hardness, distribution of vegetation, regularity of street pattern, disinterest of scenes (such as storefronts and stores), etc, and permute or replace these.

It's important to consider a few introductory psychological aspects of the city, 'resonance' and value-neutrality of the environment. By the former I denote cybernetic and unconscious, crystallizing effects, whereby a neighborhood may arrive at a cumulus of affect, styles and ideas from a topographic intersection of the movement and residence of large numbers of people, perhaps nesting around some discriminatory signs (in which case one must speak of primitive, common and ritual languages coming to have balances); the important thing here is the ranges of types which are, however subtly, active in the worldly environment; these ranges, signs, environments and other products are perhaps incredibly indeterminant and unstable, but they are decisive or surely important; no analysis is now possible whether the related processes tend towards other configurations, though it's apparent that environments have 'life'. By the latter, value-neutrality, I emphasize, complementarily if not explementarily, that the objective, to a high degree, is pervaded and defined by the subjective; at the moment I mean this in the non-trite way that the overtones and satisfaction, eg, of externality are governed abruptly by the interior state of the individuals, eg their approach, mood and volition; in this way otherwise utter crap and gloominess may be apocalypticly pregnant and delightful; take, eg, the transformation produced by a pretension, a play, a book, an intention or a diorama; the 'sublimation' of pain, cruelty, vice, madness, despair, idiocy and excess. Also consider how easily, eg randomly, the state of an environment or 'system' may be punctured: install a truly fascinating alcove in an otherwise barren or prosaic corridor wall or room, perhaps filled with little items having a story, museologically; install an iridescent and luminescent wall, varied rhythmically; emplace a rug; pour in stereophonic atmospheric music; release delicate or pungent, pleasing scents.

One of the states you have with people, today, is dissonance and strife produced by disorientation by the fact that nuances or unconscious components, or meaningless components, bestir individuals to dislike and plot against one another, whereas the recognition of the presence, form and truth of these elements, and agreement on the alignment of these elements in a larger 'space', would reduce or banish the conflict and unease and elicit comity, spirit, nonchalance, devotion, society and play; experience, puerile training, precedence, psychophysiologic controls and techniques or 'demonstrations' of covert, pragmatic and possible alignments could eliminate the dreaded malaise. I particularly am of the mind that nonegoistic, external, temporal, futuristic-transformational and transvalued polarities are viable; it's extraordinarily exciting and secure to be ordering and prosecuting one's chores for a fixed good objective; I believe that some 'super good' objectives, comparable to former religion, are now possible, illustratable and communicable. Again I recur to the unnecessary division of passive and infertile v active and involved men in society, in the participative or psychological sense; if many men extend themselves, this collectivity becomes a 'surface' in society, and a cybernetic effect is created, pushing, potentially, toward ultimata. I believe that the difference over fascism, totalitarianism and psychoengineering, v liberty, laissez-faire and naturalism-individualism, is not yet decidable or unambiguous, consequentially; obviously these have great or the greatest impact upon social or physical structure of cities; eg one can well imagine a homogeneous, bee-hive, low-investment, 'rugged', crude, unenjoyable, changeless, regimented (mechanistic) and crowded city v an antinomy; surprisingly, eg in strict segregated coexistence, one can deduce most favorable arguments for devising and maintaining such a city.

'note'

Getting and 'developing' an axial approach can be essential; eg one can pursue amplifications of comfort or convenience; here is where an 'idealistic' approach, as here, is so valuable, where unitary results can be juxtaposed to present divisive results. It's not necessary that eradication of petty irritations be trivial, in sums, because these may actually be quite burdensome and crucial as to attitude-formation; nor are ceilings or negative-points surely legitimate. I do feel that it is that concern with these irritations may be misdirected and mistaken, eg since improvement of the physiology of mood would suffice to cover or oust the irritations, qua. It should, I think, be realized how extensive these irritations are, and their bases be intensive, and studied how qualifications may aggravate them disproportionately. And, again, these irritations have epidemic qualities.

It seems to be that a preliminary or primary stress might be upon how to maximize 'subjects', ie obvious and announced goods, though perhaps remarkable ways and forms; eg a swift and architecturally comfortable transit system preceding residual or complex 'traffic' problems; if it is uncostly or practical, of course, the two'd be integrated. My tendency in this book will be to disregard the gross economics entirely, regard certain economic reciprocities and concentrate on the noneconomic radicals; my justification for such fraud is that I foresee expanded and relatively infinite work, knowledge, material, 'patent' and, of course, monetary capacities characteristic of the future, eg through information services and automation - very interesting cooperations will then occur. Eg automata will design and build automata festinately spontaneously, in 'explosive fans' of production, and the degree or density of automation will be literally ubiquitous, omnipresent and 'omnipotent'. Here we en-

counter another perplexing fork, a city as a nonemploying machine v a degree of human work; this tension is philosophic: i) higher mental tasks may be mechanized or dehumanized, ii) new roles or activities uniquely or selectively employing men may occur, iii) men may prefer to operate the city in some degree directly, eg tearing it up and down, iv) an astatic 'wave' of experimental human roles may continue, periodically, to precede automation, v) men may prove wholly irrelevant, and the urban environment be depopulated and committed to extrahuman purposes, vi) a residuum of jobs for men may be existentially preserved amid an intermediate evolution and multiplication of mechanization. Another collapse in the city concept may occur through i) cosmoramic communication replacing transportation, more direct techniques replacing kinesis and exercise, ii) the domestic environment becoming extraordinary and/or the external un/intentionally undesirable or intolerable, iii) direct stimulation of the body serving to collapse psychology, eg instant total happiness or self-control, hyper-intellectualism, memories and imaginations replacing mediate art and architecture and much social 'conversation', iv) 'entertainment' techniques equaling external and real complexity, functionally or organicly, coupled with communication techniques, etc, v) radical alterations in perception/value changing the character of the limited and unlimited external world. The kinds of peace, stimulus, communication, contact, expression, operation, facilitation, recreation, occupation and research created by types of environment might thus or otherwise narrow, change or terminate. I think a not necessarily 'permissible' insight would be that there'll be surreal disproportion, eg very small segments of the environment might be vastly more important, pleasurable, interesting and active than most of the rest; the rest, itself, might be complementarily or selfishly modified, making prediction cumbersome.

X X If there is a depreciative discrepancy between the esthetics of models, & cities once built simply see that the correspondence is virtually exact. In the future will have a psychometry such as to measure parameters in esthetic reaction to range & variation of material to slowly but importantly afford an understanding of the realities connected with the dimensions of art, eg to discrepant, anomalous sizes of buildings so far defying artistic, sculptural management of their possibilities & tastes.

The impact of change in values through personal change is exemplified through civil courtesy, generosity, friendliness, investigation, cooperation, planning, altruism, goodness and participation; these, please, precipitate peculiar value complexities. Whatever natural boundaries are theorizable, I suspect the highest accomplishments of the utopian past fall short of the potential of civilization viewed for this dimension; it's interesting how 'badness'--defined within this framework--forms chains and irrational dislocations and deposits, but probable that types of effort and administration, eg through wide 'correction' and forgivingness and especially deep and thorough self-development and -control, could precedentially thin or end these moral maladies; the technological mixture of psychic* controls, overviews, 'complete' sciences, liberative automation, holistic and scientific fashioning of the holocoenotic psychognomic environment, orientation of mankind (& therefore end of external interferences), advance in epistemology, mentally upgraded people, perfect medicine, etc, must doubtless abet the civilized scenario, ushering in the age of the 'teleological', servile city.

One of the things a "great" city certainly is is a curiosity, though it's difficult to justifiably briefly exemplify it, though were I an artist I might sketch or limn suggestive aspects, absent in the present and possible or probable in the future; but human curiosity can be treated, insofar it might be active in judging and forming future cities, in this way. A key element is size, in surface dimension, so that a 'distortion' of sense, ergo cause of curiosity (which is a sensibility of actuation), is related to the irreality of so many spatial and building possibilities in a simultaneous perception and experience; "grandeur" is related to the enlarged perception or object, and its presence fertilizes unusual aes-

*(eg orientational)

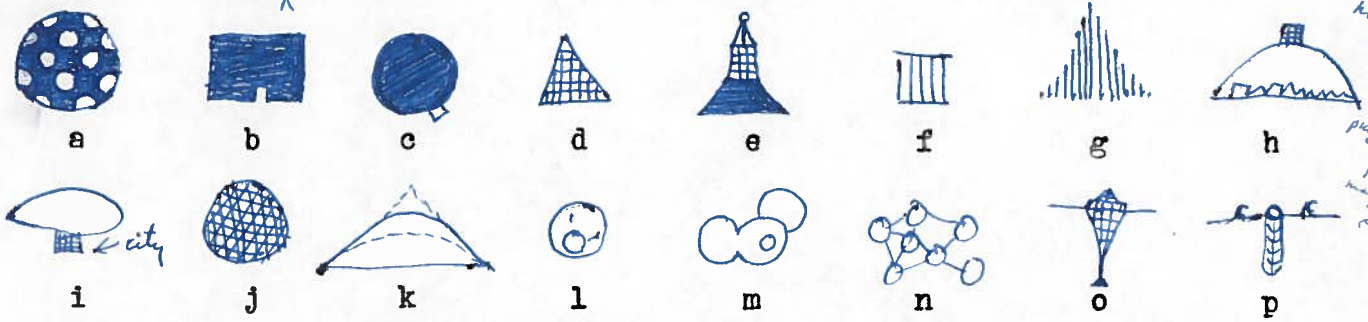
thetic possibilities, including 'pure' and exertional possibilities (eg the sensation of 'stories', making very obvious the unconscious participation of emotions). Were it to be that a vast city floated upon the sky, the unconscious intuition of this would include coenesthetic empathy as one's own body afloat, pendant eyes, goodness of the powers of science of man (eg optimism re the universe), etc, for us, in the present; it's conjectural to extrapolate to then, thus instancing how our projection of future cities is biased and unequal. One simplification into uniqueness would be a longitudinal, eg green, huge tunnel interconnecting two cities without interruption extending 200 miles for individual travel units to air-float to-and-fro, wherefor the delay in the tunnel would be the absolute or relative definition of uniqueness, but where such an uninterrupted tunnel, however contrastically 'interesting', would seem improbable (if perhaps suggestive of larger characteristics) Likewise the popular image of the city of the future typically includes adjacent ultra-high skyscrapers, say particolored, or adrift in some alluring haze, and associational values aesthetically suggested in textures and colors of obviously sound goliathan domes and improbably extended cantilevers and bridges, as well as seemingly purposeless shimmery membranes, webworks and circular topographies. These are the "emotional" characteristics of the future, a sort of learnt collective memory, or generations of designs intended to suggest the improbable or consequential. Indeed, one might ask what'd be the ideal appearance of the profile of the city: invisible, diaphanous, phosphorescent, 'natural' or monotonic, technicolored, patterned or painted? Is this not silly, rather if one technicolored they'd be 'merry', naturalized for 'austerity' or 'nobility': and mustn't these choices depend on the state and history of the city?

Architecture has a different job where it may suggest ideas or patterns of thought to form behavior. Examples: if a building is so large as to be 'grand to some degree', then its skeletonic and surficial form may be arranged to emphasize, exploiting a range of availible designs, short of rococo, the grandness, eg disclosing the complex interrelated tensions and compressions of the variable overall design, esp in relation to the surrounding designs, and communicating the nature of the material, (eg an external or remote piece may 'telegraph' the existence and importance of a nonvisible piece); owing to synaesthesia, usage of a colorful or transparent material would tensorially or unifically aesthetically 'recode' the structural design possibilities, pro tanto. Infinities of associations are possible, eg where the structure meets the earth and is thus affected, anthropomorphic and theriomorphic symbolism, eg muscular-sexual, present in backs, cross-indexing for the connoisseur, parallelation to social and ideologic movements and general summary of the times (where 'eternal' symbolism would be in unconscious external associations), etc. More likely the aesthetic detection of "grace, elegance, strength, nobility, spirituality, functionality, solidity, uncertainty, beauty, joy, peace, creativity, etc" has followed from the cognitive perception of the engineering of the architecture, perhaps hinting the idiosyncrasies, imbalances, pretensions, skills, preferences or knowledge of the architect or school, in any case based upon the increasing, complex technological possibilities combined with the content and function of individual buildings and nonarchitectural considerations in general. Occasionally some wholly new bases, principles and techniques may reform the regime of design; many possibilities are doubtless marginally prevented by basic man and inability of largest

structures (eg skyscrapers hanging as ornaments from a 50 mile dome).

We come to the question of how 'high' a city could be, or great the vertical extent (procerity). Part of the reason for this is that our cities have always been, if not the villages, tremendously flat, even the exceptional structures very low; circum-montane communities being the misleading exception. There are modern arguments and forces for keeping population restricted respecting agriculture, otherwise one might be inclined to assert the end of population growth to be the filling of all space, the plenum; it's been arbitrarily suggested that a spheric 3D city would conserve the land, for food and play, or an unlimited vertical city; similarly that a wholly subterrene city or a sea city would preserve the land as park. It's obvious, anyhow, that the sky is undeveloped and awaits tenementing. The weight or space proportion of machines, net or gross, to men is ambiguous; there's been i) multiplication of machine #s, ii) growth in machine size, iii) miniaturization and diminution, iv) diversification, v) multi-purposing and generalization, vi) completion of machine purposes, vii) obviation, ditto, viii) 'mentalization' of machine purposes & types, ix) birth of machine purposes; the question is whether an absolute ratio of mechanism to humanism is probable, the only cost of the ongrowth of machines with a fixed population of men is irredeemable energy, indicated eg by solar flux and highest efficiencies (perpetuations); x) machines serving machines, xi) machines seperately prosecuting 'human purposes'; it's conceivable that energy [redacted], space and matter 'expenditure' will continuously enlarge the ratio, to a static or increasing # of men, up through many magnitudes - it's certainly likely these imbalances will occur for the amount of, vague, 'action'; certain skyscrapers might be

totally devoted to mechanical or industrial processes, or the upper or lower portions, or the earth beneath the human surface; the increased density and smallness or malleability of machines or processes would mean that building could be much higher, as less hollow, perhaps as manmade mts. For special purposes mechanical or human constructions could be higher still, as great towers or, in effect, lashes or chains into the sky buoyed by gaseous cells (deflected by atmospheric thinning), or foundationally ultra-light or ultra-thin tension-compression plexuses or tensorial matrices; indeed, these uninhabitable (aside from zenithal or sparse points, eg little decks, cabins or instrument stations), insubstantial terra-objects could be the architectural art of the future (replacing clouds), perhaps serving as 'breakwaters' of the wind & weather.



Our interest at the moment, still, is in maximizing the non-architectural, especially human, mass relative to squares of the surface, ie vertically; otherwise eg analogous to ultrabaricism horizontally (a pursuit in its own right). Short of irrelevant atomic collapse, materials under compression never 'fail', although they undergo chemical transformations, flow and fracture tensionally to less compressed points, such as horizontal spheres; for this reason we may say that the steric capacity of materials, relative to g, is infinite, and we stand atop 4000 mile, very dense poles, if seismically; this is surpassed by the largest planets.

— To heat the poles arbitrarily, large 2-sphere (anatomically flat) balloons or -concave contoured mirrors could be stationed over the poles, or occasionally in space (tethered?); reflecting generally just infrared—UV, sunlight.

Titanic-but-weightless (i.e. skeletonic, fluffy or lissom) structures have already been put in space, & proposed.

The costs might be "provocatively" low

* there cities are habitations might be esp apt in the hyperbaric atmospheres of Venus, Jupiter, etc. Indeed, the problem might then be how to keep them, when desirable, down. The cities of the Jovian planets would mostly be atmospolises — to the degree that there would be reason for hugging the planets proper. To the extent that the g on the large planets would be intolerable to men as we know them, they would probably be populated by robots, cyborgs or recons.

Plan "a" displays a checkerboard pattern of honeycombed utile and structural regions, eg at ground level or lowest level of utility; the utile spaces would become more frequent with height, until as plenary as the structural foundation, antipolarly; current skyscrapers recognize no such waste, though the theoretical strength of silicpn materials suprasses the same strengths of steel, where the crust of the earth $solidly' predominates in Si, and it's uncertain why skyscrapers might aspire to height ultimata; a reason might be to escape high g, though it must admitted this couldn't be the sole basis, then; note increasing possibility of weight with loss of buoyant air; it'd be interesting, if overwhelming, to calculate the maximum compression, allowing for a uniform density, of an asymptotic polar, 'limit' equatorial and whole-earth-mass structural elongation, by body gravitation; the middle, ps, would have rotatory stress. Plans "b & c" minimize the utile space, the remnant being elevatory. Section "d" is a conic skyscraper, the grid might be rendered as atomic triangulation, though I'm not sure, in such a megastructure, it's important; this is a compromise between a rectangular skyscraper and a mt. Whereas section "e" is more of a hybrid, in this sense, a skyscraper resting upon a montane base, with a funicular roof tower and apical globe added for [redacted] Flair; in fact, this would correspond to Denver or a skyscraper on a peak. Section aspects "f & g" illustrate the multiplication of posts, eg enfilading, or walls. Section "h" represents a smooth, geodesic or component thin huge dome, enclosing a 'bottom' city, with a crown nest, eg a rectangular skyscraper - the dome would have to be ellipsized. Section "i" revives a megastructural dirigible, with an abdominal skyscraper invert. Sideview "j" is a BFuller aerial floating city; idea is that

lightest elements: H, Li, Be, B, C, Mg, Al; their compounds

*(however, air is 10^5 lighter than solid solid, which might mean 10^{273} lighter or omin layers with respect to very moderate densities, needing only very light vacua, eg 50-100 torr); He grides 62 lb/ft/10^3 FH3

the total weight of an incollapsible bubble with some thin and meager, though not too meager, internal architecture and social life will be less than heights in the atmosphere, if the internal air is only slightly more buoyant than the external; this would hold if it contained He, were a few degrees warmer or large vacua, and hold increasingly as the radius of the bubble increases*; many materials and objects could be manufactured for sharp levity, and this would be an ideal resort for scholastic kids and tots, oldpeople and women - and a minority of men and fat people; this might be anchored to the ground in perfect tensility, or piloted or let to drift over land & sea; ferried to by copter or serving as an astronautic or astronautic waystation; prefacing, with "n", aerenchymal atmospheric urban growths, the expansion of the radial biosphere into the stratosphere. Section "k" is three mts, filled or unfilled, 'thin or no', chthonic or synthetic, being horizons, slopes or planes from the ground, mammillary or craggy from satellites, spheric from infinity; these might range from kilofeet to kilomiles in breadth, hectofeet to decamiles or kilomiles in height (assuredly depending on rheology and 'geology', & architectural engineering); I can think of no structural reason for varying their form beyond humps, but an architectural reason might include increasing the depth (hence beauty) and surface of the land vis-a-vis the surface; analyzing the internal architectural engineering of montane structures obviously requires an engineering Einstein, but there is the (wildly important!) chance that a frequential and geometric, material system could be set up to permit huge steric occupancy and development, reencountered in the matter of subterranean architecture (which has its advantages & disadvantages); one can again imagine utile v structural periods, here banded as great arcs. One solution to the compressive and fluid regime would

x Buildings with very wide walls,  (Chicago), could stand at transcendental heights, supporting levels within.

* The trouble with cryogenic strengths (which might be calculated, & as very great) would be their brittleness.

accept "k" as a mobile, if solid, 'ocean', and encapsulate spheroids, "l and m", as purely interioristic architecture; these might diffuse and rise through the structure (which might be continuously rebuilt), but they'd compromise between plenary and "d"-types; it's not mine to say how technically 'desirable' this megastructure is, but it becomes synonymous with pure subterranean architecture. Sideview "n" is a collection of individual aerial balls or buildings (phyrapolis), here 'roped' together, operating by principles identic with "j". One of the ways of achieving great stericity, with the problem of resisting collapse, is to build down into the ocean, as far as 7 miles (without venturing <u>below</u> or above the sea, for addition), for the elemental water buoys up contents (which ability of globes to resist collapse benthically suggests that a "k" mt of atomic spherical reiterations conically configured might scale great heights, if compromising 'oceanity' and structure; the analogy is asymmetrically and tensilely imperfect); (esp.—to what degree possible is height a function of slope?) a movement to build on and in and below the sea is material and growing, and these crystallizations may well be practical and pursued; an "n"-type democracy of steric levels has only to increase its density, in another way; "o & p" are conic and cylindric buildings or cities ('city' being a larger building); many erosional, structural and 'elemental' problems would have to be solved, of course; displacement of the water raises the shoreline, one wonders whether billions of people mightn't come to live in this way; structural pressures invite industrial processes and machines in nonhuman 'cities'; I'll later discuss at length the urbanology of life in the sea. The theoretical strength of atomically bound materials suggests an ≈6 mile limit to conventional architecture in air. But there're ways in which this might be transcended, by modifying the materials by forces. I'm told that 2 mile buildings are now technologically possible. Certain Boron fibers (known today (nearly)) can now support 1900 - load

~1500 miles depth for breaking ability exceeding pressure, at which point liquefaction occurs; Earth's solid ~700 mile core is rigid re pressure.

An instance of a use of force to create an asymmetric terrestrial 'mt' is provided by the pearness of the Earth's figure seen from space, where centrifugal force bulges the equator a few miles, where increase of that force would increase the asymmetry, easily done if the Earth behaves essentially like a fluid drop and with an expenditure of energy surprisingly slight in relation to that in the Earth releasible, in negation of gravitational aggregation of molecues (their shells being basically incompressible with such a small aggregate, the effect is only the filling of the frictionless but inertial, for the time considered, atomic interstices), though, as we shall see, in actual practise such transformation would be, probably, not smooth but cataclysmal for the architecture of today. (Accelerate terrestrial rotation & arbitrarily decrease, [illegible]; gravity) Less this word seem fantastic, I expect the cosmoplastic or cosmopoietic event I allude to will occur within one millenium or half that, cf below, and though I doubt that man will have a personal hand in it, cf elsewhere below, suffice to say all men now alive could be tossed in a spaceship of much less than a cu mile, cf below thirdly, and ejected into space (where, short of inert suspended animation, the demands of life & society would require a mile or more), orbiting while the new geology, or anti-geology, were effected. Re supra, n # 3, I imagine schemes such as mineral wealth and megaengineering, electrolysis of ocean water for H & O as fuel, nuclear or better engines, but recall with delight that a vacuum pump with a little fuel will create an attachable vacuole easily to float a man to the surface of the atmosphere, jetless; one might also string a pendulous elevator with a gravitational pulley with spaced balloons to this height, too bad we don't have the 22.3-plus-a-positive kilometer tensile material to employ the Earth's rotation by a vertical satellite (n that a kite

× 'presenting foundering' 'Dilitancy' × 'celsitude'

string let/out, minus aeolian lift, or simply a size of a ball of yarn or cable - presumably idealized by a chemical "whisker" - supportable from one end, suggests the tensility of vertical construction maximally; subn that among the complex aspects of verticalism (are) predominant intra-atomic incompressibility, itself variable & calculable; significant interatomic compressibility, sterically 'cubed', reducible and related to energetic decay, esp thermal, asymptotic absolute zero; the geometric alignments of crystalline chemistry, ie pattern economies, & their energy distribution; these traits being covertly expressed in dislocational tensilities, or microscopic attractions, but esp overtly in the above intersticial remainders, as gradual displacements that may be replaced, a new time-scale being used; other more complex moduluses; note that phasal solidity has spatial, pressure & temporal rheologies; the essential problem reduces to monomolecular filaments being kept infinitely axially rectilinear (nematic), from tottering & in equipoise, as opposed to unpressured, if deformed, final matricial crystalline symmetries, closed & open, which is essentially comparable to balancing a 'squirt' of water on fingertip, so we may define the whole problem as an external - boundary and topological - one and an instrumental - internal & neologistic - one of displacing gravity ideally into a purely vertical, and axial, component, orthostatically; interatomic piezoelectric and magnetostrictive effects, whereas they may benefit the rigidity of various materials and structures (eg cholesterically, [illegible], crystallinity, [illegible]), are ipso facto superficial respecting the primary valent capacities of atomic materials, and it should be possible to establish some true maxima to iso-spatial typal [redacted], and formal & structural, normal atomic materials; but this formulation would fortunately be inapplicable to other elec-

tromagnetic and nonelectromagnetic domains, cf below). Re supra, n # 2, this author believes, as he has stated outside this book, henceforth CIF, that that which we call man, the body in its natural form, which is the modulous of this homocentric physical and epistemologic world, will increasingly and utterly pass into history with the technological heights and decisions of the period middled in ca 2030 (which is equiprobable with a centenary scatter); strangely, I regard the size of the modulous as ridiculously gigantic, the numbers thereof as irrational, the 'essence' thereof as misplaced as yielding to fantastic visions; more understandably, I foresee the emergence of a new, noological lifeform, dissimilar to anthropomorphism & biota (I see no reason, sofar, why this instar should be immaterial; chance, yes); most understandably, between 1990-2000 I think will occur the construction of machines, nongenically, seeming to equal the intelligence of man in all operational aspects; less this seem ghastly wrong, upon pastel green and my wall I have a signal card typed "THERE WILL BE PEACE", for such molten intelligence will see and form the world anew, freed from human erraticisms, & will plot the future of familiar life in this universe; I repeat, this life will not be humanoid and aspects of nature will be changed, including the problem of architecture on Earth; the incomparable computers we have today (automatic abacuses & sliderules) already have reshaped & redirected the style & performance of the nascent world, done things & in ways impossible otherwise & unforeseeable; simple extrapolation of presumptuously nonintelligent growth in powers of these machines advises of human symbioses and civilized construction altering entirely many or most of the vistas of this book, much less others less intoxicated; why write CIF, nonartistically? there's a minor chance that I'm wrong, in this way, with

'Obduction' of the site)

major importance, my or the world's ability to communicate and establish this transhuman thesis is limited, my bigger and earlier argument was that the perceivable future is asymmetric to the past's conception of it, that the events and discoveries of the future are, in these terms, incredible, and demand response of the present in terms of a political futurism, that meaning and opportunities are superabundant and ethical laws should proceed (if inventively) from epistemology, that writing a book serves to develop my thought and knowledge and allow a posteriori convictions and surprises, that there is a strong chance we are in and heading towards crisically worse urban or sociological chaos, that the grandiose architectural & terrestrial panoramas I envisage are perhaps not inaccurate for short-term transhuman purposes (curiously & morally), that I recognize inspiration & intelligence to be very essential in society and consider myself to be here generating & transmitting them, that by drawing a cross-sectional response to this publication I may adjust my data & conclusions and arrive at new ideas, that I may bootstrap myself into recognition and begin to exert my powers to change the world. Re supra, n # 1, it's curiously difficult to date self-fulfiling long-term prophecies, because, for one thing, we don't have the, linear or nonlinear, math, we're in any case dealing with cybernetic truths, ie our extrapolated self-conscious pitilessly & irrationally numerous, commutative-causal items are essentially trees that explode into holistic synergies and redefine ourselves; the methods of future studies are supernumerous; understandably, in this case eg, self-manufacturing and -improving machines, in self-creating industries, may use superabundant energy & materials (as now realized) to suddenly reform the face of this planet (economics out the window); 'bigger machines are bigger operators', in a few minutes the Saturn rocket

expends all the ergs of the labor of the Great Pyramid, in a few seconds an H-bomb wastes the ergs of millions of tons of coal, tankers transport 100 000s of tons across oceans, titantic derricks mount skyscrapers, bombs in silos wait to devastate the Earth by one man's comment, a machine runs an oil refinery, a network hypnotizes 10s of millions of people simultaneously, a few bombs interconnect two oceans in seconds, a giant building is constructed in a few hours, a few hundred machines cut superhighways across US; these performers, however, are the tiniest foreboding of machines possible and imminent, and their capacities. You've had the experience of standing over a mock-up of a city, a map, an aerial photo or a make-believe city in clay and feeling megascopic and almighty; this feeling has no doubt been shared by politicians and architects, hence the harm it's done by the myth of misproportion, but it accurately simulates the force of the suddenly conscious human bacterium upon the Earth (& now the solar system); if Hudson Institute gets its way and a South American 'great lakes' are formed out of the Amazon the first lunar human sign (apart from a drop in the eye) will appear upon Earth. Were global industry to concentrate on fashioning a super-megatherial robot, an embodiment of our spiritual megascopy, no matter what time & effort presupposed, this machine could lumber out, under microscopic human direction, and effectually reduce the city to a toy and the land to make-believe; man! the weapon! We could "stomp all over" SU! Anyway, given the forces, machines and megalomania that we shall probably acquire in a few years, and given the multiplications of types of populations, and likely reasons tossed in, who doubts that the changes as seen from the moon will become swifter and wilder until the Earth is cubed and a window installed - and a bridge strung to the Sea of Tranquillity? To obvert our example, it's very likely

* Nonfiction: I suggest the existence & serious importance of 'inflation hierarchies' overlooked in economic discussion.

that the moon may provide a 'test' for Man's promethean, faustian and deific automatic powers; ie we could seed a few self-reproducing factories on the lunar brow and in a few exponential years have a thriving megalopolis - perhaps inhabited by machines. This is the 'perfect' space device which NASA has yet to conceive or invent, but must be related to technologies of the next 20 years; it would cost, in itself, a megabuck* or less, would be planted uniquely on the moon or other planet and left alone, it would operate the instant of touchdown, a very smart and adjustable robot with a mission to accomplish and a hint of omniscience, kicking on its nuclear processor to earn its luxury by extracting soil radioactives, exploring and mining the surface vicinity very systematically and producing useful chemicals and minerals at first in microscopic batches and products and then in exponential increases and diversifying conglomeracy and near-by stockpiles, never resting or being distracted, eventually pausing to consume the stockpiles and to reproduce itself, though not to say hello, but to doubly and then multitudinously iterate this essential process, and at the point the planet be covered with copies, they act with ultimate harmony to form a civilization of types & sizes and finally, after a few years time, they take the same time to carpenter the planet into an utterly heavenly twin cube, with a billion from Earth coming over today to try it out. It should be pointed out that in very little additional time, spaceflight subtracted, all the planets in the galaxy could be cubed, with no further expense, no lives lost and the rest of the Earth completely indifferent. Perhaps it's a law of the universe that expenents are to reign? More on galaxies further out in CDF, save one insuppressible. If you're as bright as me you've wondered why it should be so unlikely that exterrestrial life a-

'mihi cura futuri'

bundant has not already swept abundantly through the galaxy or universe and i) visited Earth & left its sign or displaced us long since, ii) set up transmitters & broadcast itself away, iii) redesigned the heavens to the degree of leaving at least some patent artifice, if just a hole (this one is obvious, cuz the heavens would be N^x more steric); biological evolution of superbright and hypertechnical life seems automatic, elements are consistent throughout the universe, planets seem naturally-scaled deposits near stars (depending on the added role of discontinuities, planets might be more likely, ie many, condensations than stars; statistics of stellar ranking might indicate this; then interstellar space may float magnitudes of planets and planetoids, perhaps draining in as systematic captures of stars; neither here nor there), in fact, several have recently been found, and we may confidently generalize; if we just had parallax-powerful enough telescopes we could peer into our alternative super futures voyeurizing at the stellar ooze, echoically, because the universe must be, far from deserted, clogged infinitely with us. The insuppressible is this, that all is well if we agree that somebody must come first, do the watching and the building, etc, and that this precedence is not improbably defined as when the universe is ready and as the subjective reasonings of the inhabitants; so! we're first (as so defined; we may share the title, even with millions), but having been first i) the universe is now filling with billions of others, ii) it's impossible that we should hold our lead, iii) we should resign, iv) but we musn't.* This solves the riddle of our asymmetry, & now I must, if you excuse me, urinate. Having done so, let me add: v) at the lst sign we still musn't, vi) but only through science or contract.

*(perhaps we could spin a within-facet die)

In order to fulfill some of the SF & 'poetic' images of the future, wherein the future verges on fantasy in order to produce beauty, it's helpful or necessary to project pure scientific achievements or discoveries, often beyond what a scientist, who is conservative, would allow today; in the case of seeming macrovariables, this is really not so irresponsible as it might seem and the scientist would have you think, in fact his categorical disallowance may be the more so; people in the past have gotten enthused and declared "All things possible!", and when they actually listed some things we have the evidence that these, to the confusion of their conservative scientific contemporaries, have come true or are in the bag; part of the reason for this, of course, was that few people thought science had it in it, to go so far, whereas now we know that very few things, if we can name them, are intrinsically unamenable to understanding & control, and a science which sees all of the universe, if not all of time, as simple; another boon for science has been its exploration of special dimensions in the universe itself, such as the discovery of the expanse thereof, paradoxic structure thereof, mathematical resolvability (eg subatomic intertransmutation of atomic elements, now apparent ditto for nucleons; protons apparently show angular point-sources), deeper layers to the material and energy[x] of the universe (four basic forces, including sf & wf; a 5th force may just have been discovered; these forces and the subnuclear particles surprisingly comprise tremendously more energy & matter than visible or popular, and admit, much like Mendeleev's table, of pure ranges of philosophic qualities, ie are the stuff of which realities are made & broken). Given these progressions, shorn of new discoveries and the implications of multifaceted theory, very naive extrapolations

x the strongest force is actually the "strong force"; Schwinger Dyonic theory may have magnetic charges 400 x strong nuclear forces.

are possible & more probable than the habit of circumscribing science by tidy groupings of its accomplishments and immediate interests and beliefs, indeed are probable; some of the consistent things that science has managed to do, in working its way from the darkness of the past, include those cited above and a tendency to be able to optimistically solve the oppressions and limitations of nature upon the life and imagination of humanity, in fact kind of a tendency to reinforce and abet the geometry of imagination, though let's close withput further word this chapter on the question whether man and matter have a common destiny or define & create one another, or whether the universe is finite and has some peculiar shape, existence tragic or a hoax; suffice to say that i) as many more particles, (VIRES [redacted], dimensions, forms & other surprises may be discovered and ii) the range of such mereological abstractions may, indeed, be more likely infinite or continuing, the last in (Not) hecceity may be the smallest part of the whole, contra contra. iii) there may be discoveries soon in last cosy.

Within the boundaries set up by forces in matter, which matter appears to be both the carrier & expression of, certain structural limits are, in processual terms (eg say gravitons mediate gf, photons ef, mesons sf, etc[X]), possible; one may speak of increases of structural cohesion (ie material strength) through zonal intensities of the forces (modified through the particles) and circuit (photonic f/n fields) intensities of the particles (in the hierarchy of forces), though the shell, force and motional criteria are simply crude; sofar we have no 'macroscopic' nor 'subnuclear' manipulative ability, in this way, nor estimate thereof, but theoretical models (albeit preliminary & ambiguous) suggest that i) atomic materials might be far strengthened, ii) far stronger subatomic or alteratomic materials may be possible, tapping the strongest forces more di-

X W-Boson WF?

rectly; it's highly unlikely that the strongest forces of nature, even in terrestrially possible regimes, admit of nothing rigider than fluids beyond the solids as we know them. By 'circuitry' I intend more than monocentric orbitals, but polycentric and acentric topologies; and by the boundaries of force I intend more than Newtonian fields or spheral conjugates, perchance n-dimensional or x-dimensional geometries; however, it must be emphasized that my recognizing such moot or synthetic notions on this page shouldn't reflect on CIF's credibility, since my compossibilist stance merely represents a sincere attempt to grapple with the full triad i) ideas important and probable, ii) ideas less important but still probable, iii) ideas important if improbable, and the axiom, the truth is bizarre, often obvious but for that reason unseen; unbeknownst to some, the theoretical structure of science seldom really disproves an idea (have its recurrent tendencies), and for this reason is really a congeries of statements, or an idealistic morphology, an examination of which may be startling to the layman, unversed in the esoterica; in this way, there're few definite things to be said in cosmology, and the same, if not more so, for infinitesimal physics - in fact the two are often related. The gist of this commentary, in our context, being that in a short time or eventually it may be possible to build limitlessly high terrestrial structures; and also that the qualities, efficiencies, capacities, energies, varieties, temporalities, complexities, purposes and other positive traits of the cities may become, in that time-scale, signifigantly or immeasurably greater. Is my LSD exhausted? No, I can imagine the cosmos being cubed or, if it's infinite, infinity being cubed (transfinitely); the random spirals, hazes, paths, fields and nebulae might well be ordered, for rectangular living or purposes specifically beyond me having their own specs; I can imagine

'urbanophilia; planetophilia'

it being consolidated or dispersed for reasons not in question here; I can imagine a xenophilous or cultural planetology, conquest of the universe by preserving and maximizing its differentiation, within which the atypical city might play a wide role; I can imagine the varying physical characteristics of the planets, eg the jovian atmosphere, varying the necessary, possible and interesting characteristics of the city structure & life; I can imagine the city becoming logically & physically etherialized until its impalpable inhabitants might be indistinquishably blent with its impalpable structure (if any) and pursue, alas, 'meaningless' pursuits; here we either integrate nature & speak of the universe as a city, or banish the city as irrelevant to the concept of occupying or disassembling stars.

Normatively, the city and space suggests quite other things. Our myths suggest contact and intermixture with alien civilizations, an adventure of exploration, conquest and empire-building mechanically analogous to our earthly past; there's a scenography of unfamiliar suns in the pink or particolor sky, different sensory modalities and personality motivations, of ships caught up in the vastness of space, of incredible creatures in their complementary cities, of cities experiencing billions of years, of planets as whole cities within or without (or exclusively), planets which are cities that are themselves navigated from star to star or across the cosmos, cities covered with plastic domes or sealed in force-field bubbles and torn from the planet of their origin to be ships, of spaceships with 1000s or 1 000 000s of men or "alien entities" in suspended animation or a closed-cycle society or time-slowed at relativistic speeds or travel near-instantly or existing stationarily or orbiting as planetoids about a sun or a planet or in a ship so large as

to simulate natural existence on a planet, say with synthetic gravity and houses of vegetation or with open malls and streets or all the luxury of accomodations in a hotel or oceanliner. It's been suggested that a health resort, tourist spot, hotel, hospital, laboratory, industrial town or political center might be established as a terrestrial satellite of huge proportions or on sites on the moon, other planets or the many asteroids; a cylindric asteroid of some miles in diameter could be mined or hollowed out, spun to create a centrifugal 'gravity', architecturally 'stepped' to maintain perpendicularity on the slopes, charged with an atmosphere liberated from its rock, lined with a soil fertilized to support fauna and flora, lit and warmed with a nuclear sun at the ends or spaced axial lamps, its energy extracted nuclearly from the soil or collected from the adjacent sun, with the miraculous anomaly that the horizon would rise and return overhead and the shortest route to the other side of the world would be VTOL and a low-energy path with a flip at the axis (an excellent opportunity for an ultra-high skyscraper or bewinged humans in dangerous sport). Despite all the outcry to the contrary, it's plausible that one day individual pioneers or pioneer families may take commercial or private spacecraft out into space and eg to the moon, perhaps disgusted or tired with the Earth, its leisure, uniformity, crowdedness, pollution, mechanization, identical people, nature-less surface--, for the sake of isolation, relaxation, adventure, curiosity or claim-staking, creating outposts, mobile descendants, colonization and eventual urbanization; buildings and towns on the moon could be built under the protective and natural ground (perhaps in various types of caves or volcanic tunnels, extensively pre-existing but artificially interconnectable & expansible, futuristic excavatory devices and technics such as nuclear being availible), taking unique

Moon m= 1/81 E

* (highest g is always interior)

(2 miles now for Earth X 6 = 12 mile skyscraper possible on Moon)

advantage of the low and rapidly lower* gravity to build ultra-high and ultra-low architectural & industrial structures; the moon, it should be remembered, may not be anything much for Earth, but everything for the Moon; a massive population with a complex culture, or moon-ideal research, could be initiated without excessive expense, and would multiply and reproduce itself without further aid from Earth, relying almost entirely (or commerce-homeostatically) upon native & endogenous resources, such as nuclear processes, photoreception or hydroelectric tapping of the thermal extremes of the lunar environment (or selenological processes, or Fuels as may exist); by this time the process would probably be prosecuted entirely by an 'omniscient' lunar computer; the moon could be developed throughout as a new ecumenopolis, its volume increasing [redacted] manifold.

Translunarly, My discussion of "architectural tomorrows", cf infra, will review some of the ways of reshaping and repopulating the solar system or solar space, but I note several ideal super space architectural forms, i) annular or toroidal, in which case one could have a velocious small ring, a doughnut like many space stations envisioned, or a slower vast ring, perhaps 1000s or [redacted] millions of miles in diameter (or trillions of miles, as the Earth is 'unraveled' as a ball of corridor string; contortions off the pole might be ideal, as twists at such length will be smooth); this 'corridor' might be 25-5000' sq (eg multi-decked), and would be a linear city if ever there were; roughly, if we used ca 50' corridor we could use the total of the Earth to helically launch a ring one side of which would come to reach to the nearest star, Alpha Centauri; as for energy, the surface emission of the Sun would meet all the needs of everyone down the corridor out on the annulus, continuously, if the rays of light could be conducted or deflected in a tube, system of [redacted] coherent rays or coherent coplanar

disc (the roof of the corridor could even be transparent to admit the bright, mysteriously potent for a speck, sunlight); this super-annular idea might have to be, rather interestingly, subject to Einstein's theories, [redacted] ii) Velocious cylindric, in the sense of the rotatory asteroid, cf supra, in the super-architectural form it would be 'smooth' if twisted, so it would be possible to produce a high density, and point-transferable, city, ie a steric density, by whatever topologic 'wrapping' method might be point-preferable, including coils and knots and in 'spiral spheres' or with average crossovers the mean diameter, which cities I'd designate topopolises; a topopolis could interconnect Sol and Alpha, in its topsy-turvydom, so that we should have an uninterrupted living surface kinetically (tropoidally) taping any planets in the two areas in a unique city; more important, this accomplishment suggests that similarly all the solar systems and stars in the galaxy might be entubulated in one grand galactotopopolis, and a latterday weltschmerz could easily splice these plexic tubes into another cyclopolis which could reach and join the other galaxies of the universe. iii) For density, annular cities could be placed within one another concentrically and rotated differently for 2D, we might disregard the physiology of gravity, geotropism, and reduce the steric prevention of terrestrial gravity by multiplying the surface of the Earth in a number of shells seperated in space but concentric, or lighten [redacted] the shells by systematic punctuation, perhaps using gigantic piers or cables. iv) Finally, a planet could be seperated into planetoids which could be scattered into different orbits or spaced equidistantly about the sun, or into a tangential or superstructural cluster of balls decreasing in size toward the periphery, or into a 'froth or foam' of, maybe isometric, virtual microspheres, perhaps able to contain indivi-

dual towns, buildings or homeowners, developed internally in some fashion. These 4 may well represent the 'urban' form of extant exterrestrial life-forms, so that we should really be seeking tenuously thin, but highly populated, astrocentric annuli. I would suggest, however, that, however ingenious, my cosmo-structural proposals are foolishly simple, and that the further species of architecture in space are surely both far subtler and mechanomorphic; were there to be some object in unique planet-size devices (aside from astronomic engineering), they'd probably be covered or filled with cities or a civilization of men, much as bacteria invisibly and undetectably cover the skin like the countryside and thrive in cultures on all objects, and it's just thinkable that such unearthly devices might serve intelligent purposes, eg propulsive, communicative, cognitive or teleologic, industrial, cosmic or other; this would be a simple inversion, synecdochically, of part and city. Moreover, dear reader, these vague seeings aren't preposterous, as they seem, but logical extrapolations of contemporary, very serious alternatives; imagine that our ancestors would have been incredulous had they been forewarned of the dimensions, numbers and values of similar shapes of our civilization; it's true that growths may never reach these extravagant proportions, but that will be paradoxic.

There're many ways of going about making a city: i) draw up a detailed or firm plan, with a schedule, & go about implementing, say for 25 yrs, ii) forswear such a plan, and centrally play politics in running a city, iii) decentralize these tactics, let individual parts of the city direct themselves*, iv) supercentralize, submit to the federal government, v) pay or equip the individuals, individually, to make all spontaneously desired changes, vi) mixes. These alternatives are going to produce different

* Architecture Without Architects, Bernard Rudofsky (64).

cities.

It's becoming possible to say what a "city" is; once I started a book on The Philosophic Implications of the Future and soon stopped, because I decided, at least at that point, that many of the problems with which I was dealing were best dealt with on their own, that it was silly to try to squeeze them into, and perpetuate, so-called "philosophy", and that the work would have been redundant; naturally, I could have treated conventional aspects of the history & present of philosophy, and shown how they are influenced by science, and how analogous problems seem related to the future, but it was best not to compromise the other subjects; and in considering and then writing CIF this same thought has been with me, as after recognizing such elements as sites, intensity, problems of coordination and purpose, resolution of the conspicuous dilemmas of modern & intended cities, one leaves the city as city behind, to the extent that foci are then computer, transportation, industrial, educational, architectural, economic, political, scientific, commercial, legal, administrative & other revolutions, & it's obvious that one's using the city symbolically, rather, even re the social & psychic changes & relationships peculiar to the city, and I regard it as immensely misleading to dabble in the 'impact' of changes, such as technical, with the impression that one's results, as a writer, can be profound or conclusive, since what's important is the certainty that changes and impacts of some, illustratedly large, order are going to occur, and perhaps that there are general ways of being prepared for their onset. I think, in this way, I can refer to some vague 'dimensions' of society & occurrence, whose gist is that there's cause for excitement & basis of limited prediction & here it is; eg the concept of value that people exercising values have is often irrelevant,

an instance is where temporal aspects of the picture are overlooked, or the realities thereof, eg cities have, of course, been distinctive in collocating, in time & space, production, consumption and intercourse & stimulating & allowing great populations (which are 'gotten out of the way' & 'gotten in line'), thereby permitting i) rapidity of experience, ii) different social experiences through different social time-scales, iii) higher socio-cultural efficiencies & capabilities, eg interpersonal & intergroup 'criticism', iv) great shared facilities, eg museums, buses, schools, turkish baths, labor organizations, airports, entrepreneurial cuisine, theaters, balls, beaches, churches, resorts, warehousing; there's been a 'synergistic' compression of progresses in time, whatever provable sickening or disregard of simplistic value such as 'the good life' (it's possible that value is really i) mathematically unsupported, ii) meaningless as given, since iii) people just run randomly or circle), these hypothetical progresses are eg equaliterian redistribution, faster & diversified consumption, stratification or specialization, normalization of ways and personalities in processes, accelerated (or multiplied) history (to the point where same is trivially ignored); there's probably also been much unjustified interference, in sensu lato; another curious effect of urban consolidation & explosion has been to create a subjective macrocosmos, a 3D eternity, though finiteness of diversity or differentiation means that the sociology of the city or cities is disappointing, in this way. But the city's been an experiment, often unawaredly, as to the health, interest & possibility of such spatio-temporal compression, and some results at this point are negative; however, i) the negative messes may have been impertinently avoidable, ii) technology, new, revives the possible & probable prospect of urban success or cure, as well as transforma-

tive progress, eg communications ne transport, ditto ne work & learn & fun & social-place, unprecedented & revolutionary energy ne everything, fascinating machines & products, computerized coordination, etc. Middlely, some capabilities have been fallen short of, eg thanks to corporate & administrative inefficiencies & personalisms. But, thirdly, some of these and the following technologies have distinct centrifugal colors, meaning not just flux in the city core & configurations, but free or positive anti-urban flight: simplistic creation of most-excellent foods & stuffs unsubject to spoilage or incapacitation yet uncostly, long-distance communication, innecessity of constant or any work, ruin & doom in the city, disconnection of education thru the leisure, noetic and poietic pastimes forgetting the city & society & yet socially sanctioned, the very lack of sanctions & a sense of anarchy, sensate methods enabling repudiation of the city (eg drugs), 'easy' new homes & furniture even equipped with wheels & a decentralizing road system, latterly a civilization-phobia may set in & propel people to most remote places of the country & globe, mobile enduring fuel sources & machines. Contrarily, many people & groups are getting genuinely excited, integrated & successful with their cities & styles and may not even behaviorally be able to comprehend phobic anchoritism or ruralism, and are sponsors & abettors of urban glorification & experiment & reflect an ethical ethnocentrism which ignores or castigates the different or miserable, by nature, & is quite 'cosmopolitan'. The long-term & perpetual, despite & with surburbia, global trend is towards increasing migration to & population of the cities, & though this pattern is likely hysteric, it'll continue for some time & may never relax, & taking New York as example we may say that the higher densities, greater populations & concrescences of cities will continue dimensionally

to exacerbate the urban problem. I've repeatedly said I regard the effects of our day, even if spread centurially, as i) transient, ii) transitional, iii) superficial or [redacted] unfortunate, iv) amenable to new technology, v) imminently scientifically perfectible, vi) misunderstood; but I've also considered how, un/necessarily, costly & damaging human nature is; said i) environments, eg cities, may be made into,desirable, machines, ii) politics may be similarly mechanized, eg made into a pure or near-pure informational or quasi-governmental process, iii) we need, if only it'll materialize, a spiritual renaissance. An exemplification of what a city is[15] Los Angeles, where mostly it's streets & park lots or, perhaps, cars; we must research daily & yearly schedules of representative or random people's lives and adhere to the finds eg in being sensible that Los Angelesians spend, say, a 1000 or more hrs a yr being inside their autos, questioning or at least regarding the nature & future of this investment, much like one may make analyses of tv watching, and confront the new reality of sociology; people cannot be trusted, & in any case are impotent, to improve, much less elevate & perfect, such activities, externally controlled & personally unconceptualized, as this; the city may not be the external landscape & operational processes, but the interior contents and their logical & irrational consequences, eg the city may be the <u>natural</u> sky overhead (seen from one's lawnchair), the upholstery of one's car, the wife's legs in bed, the design of one's house; & it's just possible that we may disregard the 'externalities' altogether & concentrate on the adapting, evolution & upgradement of the items & environments of a gradually fluctuating or directible horology of life's long attentions, eg sealing off the city, making the city a tight enclosure, developing sun-quality lights, applying the arts and sciences of

K ONE could probably learn reveal by informing people of their nearest neighbors with affinities or similarities, compressively.

museums to the everyday dioramas of life (eg mass produced), minimizing pathways & maximizing private chambers, but using intelligence [redacted] or feeling eg by adding watery tubes blocks long as ways of citizens swimming about to one another (rather than dull corridors or [redacted] duller streets); i$'s the deprivation of such environmental possibilities & behavioral demands that represents the degradation of our towns & lives, the failure to recognize that to a large & pervasive measure life is play, the failure to be able to comprehend and objectively create with this play, the failure of society beyond its habits & simpler intercourses, such flaws as the fragmentation of society into discontinuous families & cliques where people on the street or in same apartments are necessarily afraid or anxious to talk to one another, a general palsying whereby an automation of society is oppressed and stagnant ways are obediently clung to by people who [redacted] perpetually lack the initiative for greater things or the ability to calm society, preparatorily.

There're different ways of varying the city: i) an inventory of the elements of the city in their spectral contrasts, can be randomly or semi-automatically varied, ii) this can actually be done scientifically, [redacted] iii) human judgment can intervene highly in the selection, iv) people can individuate, v) mixes & combinations. My position is this last, eg a 'morphology' of all the past of art is possible, and this could be used to artistically refine the cities' faces, but updated by additional general & particular ideas of 'artists'; I mean a 'consensual' morphology, not a singular-essential. By morphological method I have in mind getting people to recognize distinctions, to create art which has dimension; it's really just the obvious most useful way of criticizing & bettering our present cities. Otherwise, it can find what's missing, and it can bring the world into clearer view, eg the length of a street.

It's amazing how difficult it is to predict the future, even such a simple dichotomy as whether the future of the cities is going to be optimistic or pessimistic, better or worse or remain much the same; whether or not major efforts will be made to curb their ills, substitute positive achievements, succeed with the technology, or such efforts must almost necessarily be in vain. One of the first things that really has to be done towards saving and glorifying cities is a drawing up of a 'morphology' with an inventory of all the aspects together constituting the cities and their possibilities, simply starting from the present era; a morphology is perhaps beyond my powers at this time, in any case out of place here, but follows are two scenarios, in the crudest way, meant to name and seperate fears and hopes into the contrasting tomorrows they must represent; given them, it's possible to regard their various items to decide whether and how the items are feasible.

A ~~depressing~~ view of the future cities.

Current pejorations in the quality of city life will continue. They'll become dirtier, the slums extenser and intenser, refuse will become more plentiful on street and in alley, fauna and flora unhealthier and typically and numerically fewer; the city will become more uniform, monotonous and artificial; noise will be greater, rivers and air unhealthier, more unesthetic and damaging; more people will have less hope, spirit and health; jails, hospitals & old people's homes will become more crowded and worse; corruption will continue in politics, the city's agencies, business and so forth; the streets, buildings, parks & other facilities will become more disrepaired, dirty, obsolete, inadequate, misrepaired, misused, unused & defaced; strife'll intensify, people will become poorer as people, violence & crime will increase, people'll become more frustrated,

Kalolatry – worship of beauty & the good.

confused & sick; socio-political organization become ineffectual, more harmful than good, and break down; the absolute workability of the city process will decrease; people's lives & values'll become more artificial, superficial, painful, venal, meaningless, amoral, pragmatic, egoistic, nihilistic, apathetic, uncertain, skeptical, momentary, sensational, defensive, phobic, compulsive, neurotic, morose, mechanical, unconstructive, impotent, bizarre, competitive, animalian, empty, pretentious, illusive, unenjoyed, erratic, psychotic, sterotypical, blind, disrespectful, intolerant, insentient, desparate, sadistic, broadly 'masochistic', collectivist, individualist, ritualistic, unproductive, absurd, feeble, childish, ambiguous, catatonic, schizophrenic, perverted & hopeless; there'll be more of the 'bad' kind of people, such as dropouts, fomenters of hopeless or pointless discontent, frauds, brutes, hypocrits, poseurs, criminals, gangsters, exploiters, jerks, perverts, fanatics, fiends, dictators, schemers, cowards, 'theoreticians', bums, nuts, nuisances, philistines, whores, conformists, faddists, 2D (two-dimensional), prejudiced, petty-spirited, inappropriate people & fools; juveno-latry[γ] & teknocracy will continue - as other para-latry[α], kako-latry[β] & mediocracy -; excessive, insufficient & confused international response will continue to exacerbate nations' concept of one another & perpetuate both aggression and mutual obstruction of mutual synergies, which chaos will aggrieve the people locked in the cities; all this pathology, human & instrumental, subjective & objective, will, of course, propagate & triumph, in a putrid & 'blameless' degringolade, Phoenix-less.

Scene 2. (melioristic) enamorphic
A ~~euphoric~~ (taking) view of the future cities.

α "Worship" of the faulty, irregular, disordered or perverted.
β "Worship" of the bad, incorrect, unpleasant, or diseased.
γ "Worship" of the juvenile (ie that reflecting psychic or intellectual immaturity: immaturity of an adult: childish).

'zeigarnik effect'

The Blacks will begin to acquire some &necessary& commonsense, vigor, autonomy, organization, forethought, independence, civism, personal discipline, identity, muscle, genius, assimilation, intermarriage, results, rapport, edification, tractability, placability, intelligibility, tolerant espit de corps & momentum, a Black president is elected and a racial millenium ensues; maybe racial violence and civil war is averted, for some reason; interest is integratively deflected elsewhere; the Black becomes more successful in society & business, or-and partly aligns with the White; education and integrated experience civilizes the kids-producing Black kids, Whites become very enthusiastic & supportive of Blacks; Blacks gain signifigant political voice & power, develop and insist on neighborhood pride, develop high familial standards; develop a unique, engaging & elevating, culture or occupations; the Black protest, havoc or disease manages to be compatible with its intransitivity, cure or the stable attainment of general urban amelioration & values. Large-scale 'renewal', refurbishment or new cities will successfully create desirable distinctive or 'artificial' universal urbanity; new cities will depopulate or displace most old, which'll acquire a quieter successful life; pollution can't get much worse, is ended by installation of modifiers & legislation with enforcement, the air once again becomes crystal-clear & cerulean, the rivers natatory & potable; the auto or transport system is electrified & drastically modified, ending air, noise & space pollution; the silence & calm elicits social depth, perambulation, intercourse, physical vitality & civic-mindedness or innovation. Initially the taxes are high, but eventually they're absolutely & relatively even lower; automation of undesirable jobs, explosive incomes, redistribution, ever-bettering education, wholesome en-

(Psychologic) 'enhancing the dignity of man'

tertainment, evolutionary morality & manners, new technology affecting every dimension of city life & form, 'smooth' anticipation & planning of the future, consequence-integration of 'revolutionary' novelties; universally possessed devices or dwellings for 'overwhelmingly', & certainly, good life, simplifying the popular mood; techniques, materials, devices or systems for automatically perpetuating & heightening the beauty or quality of the city (eg armies of purgative, collective, inspective, talkative, fixative, transportive, instructive, operative, progressive, anticipative, servile self-maintaining general-purpose robots). More investment'll occur in differentiating & maximizing the quality of every inch & second of the urban landscape; city designed not just as a cage, 'prairie' or ugly machine, but as an intricate, potent, & prudent teaching, feeling & living infinite machine, & designed to maintain social intelligence & purpose - without loss - over history; designed to create & intelligently vary blissful & absorbing psychic environments, to interconnect & endlessly facilitate all of the inhabitants continuously; designed to experiment with, learn from & ultimately perfect the infinite urban interrelationships which presently go unsuspected, unstudied, undetectable, unmeasured, not understood, unexploited, unexplored - with such undoubted costs & penalties. The form of the city might change into another modality or reality, eg a unitary museum, art exhibition, recreational facility with devices at every 20th foot, entertainment facility, intellectual haven, S&T laboratory, 'society'-maximizer, 'park' (buildings disguised as trees), commercial paradise, a 'happening' or some other concentration or totalization. People may just stop being bothered by, concerned with, the external world (pandemonium) & come to accept & enjoy themselves & their

entopias; externals'd include everything outside their immediate experiemce, including, perhaps, the neighbors, crosstown, nation & globe, not of 'immediate' importance. Computers & urbanologic principles (qua wisdom), plus improved administrators or city design, might enable the city to regain political masterability - efficiency, controllability, malleability, dirigibility, comprehensibility, sensibility, regularizability, perfectibility v progressability & representation. The ranges of mobility, migration, ethnic conflict, population explosion, socio-economic change & exploration, internal & external technological impacts, psychologic dissonances (such as war, Psychoanalysis, ideologies, fads, images of the administration & forces in general), neighborhood decay might be cured & prevented, en bloc, if subtly (eg coercively). Due to stimuli (eg leisure, business, culture, other) the metropolis might actually become energetic, even ecstatic & transcendental, and the citizenry become lastingly entranced by mental & behavioral images of their city (explicitly eg), environs (symbony) or own lives. Nuclear power might enhance & direct the images & ways - the properties - of the inhabitants. Innumerable positive & long-term, constantly engaging, tasks, roles & goals might electrify the inhabitants, producing enormous social integration.

An amazing article was widely published 2 yrs ago, Athelstan Spilhaus's The Experimental City; its summary: BFuller grants us 400 "energy slaves" apiece, # grows with technology, increasing waste metabolites, so cities should proportionately decrease in size. Total recycling is the goal, eliminating waste & pollution, eg cars should be designed with eventual reclamation (industrial collection, disassembly, reuse; distribution network doubling for collection) in mind, multiple use of water of different qualities (we never use it up, it carries nutrients, [redacted]

√mealuses (r.ic: interculled spac

wastes & heat, etc), industrial symbiosis where 1 industry feeds off or neutralizes another's wastes, smokestack fly ash collected for cement & bricks, city's garbage for fertilizer (oil, food, etc), grain elevator dust for cattle pellets, steel plant iron dust fed back for steel, SO_2 from factory chimneys & S from oil refineries for H_2SO_4; such may be locally costly but clean, though generally & finally economic; you stop car smog hydrocarbons in LA, by '80 oxides of N go on & become serious; we need cycling, control at source, symbiosis of industry & experiments with entirely new technologies. Even a 'sanitized' junkyard's an insult (but may we frame them as dispersed 'museums'?). Cutting noise costs, a quiet machine's usually overpowered. Need a math computer model study of where waste should go, cities planned by maps of pollution proneness (eg geographic). Half US crowds on 1% of the land; if 10^8 men retained their density but dispersed in 800 smaller concentrations of 2.5 million/1, probably'd be no serious pollution. Need 4D zoning, eg night forbidden airport noise. Tele-baby-sitting. Emergency helicopter-lifted hospital pod units, able to lift aside wreckage. 90% of time cars are unoccupied (% load is pathetic). Toss the traffic in tunnels with fume sewers, with access to main public utilities, abating noise of making & remaking; interconnecting utility tunnels could double or multiplex as traffic tunnels & utility trenches for heavy freight, tel, power, gas lines & water & sewer mains, for rapidity of emergency police, fire & rescue; the sewers might conserve water, pneumatically, & concentrically combine; like sub park garages, 100s' heavy manufacture, storage of water, snow & waste heat. Experimental City to test-market new products, buildings materials & postal systems; such materials enabling new forms for architects; opportunity for balances of form & function; even the materials used in the buildings could be such as to be taken

down & reused if found obsolete or inferior. Whereas climate, etc might be intricately controlled, slight breezes & temperature variations might be found best retained or made. A 2500 acre city--to preserve its identity, character, cleanliness & experimental freedom--might need 100X area as an insulating belt including forests, lakes, farms, outdoor museums, arboretums & zoos, hobby farms and gardens (minimum rustic setting); also ? high-intensity food farming & high-rise finishing farms (fresh foods to farms from further out, cows to sterile peripheral high-rises for freshest milk). Built with private funds on ground leased by a nonprofit corporation, legal codes & governmental structures will differ, eg revenues from leases not real-estate taxes; since regulations protect often from urban overgrowth, there may be fewer. As dirt, noise & congestion stresses are removed, origins of antisociality may be clarified; we may see if these 3 shouldn't be removed! Methods of cleaning & noise-proofing make zoning unnecessary. Either Spilhaus has been exploiting his students, or he's got Imagination!

BCommoner advises an "ecologic crisis" looms. Civilization is becoming so signifigant that it must either close itself off sharply from nature or overmaster nature. The former means that it must confront & pay the cost of reducing & recycling its external wastes & fundamental resources, the latter that it must - & perforce collectively - decide to disregard Mother Nature & engineer the planet, eg by defining rivers & the ocean as 1 gigantic sewer, adapting agriculture to pollution, placing the cities & highways in plastic domes & tubes, substituting artificial sunlight, processing & conditioning the air, fencing & enclosing wild reserves or inventing & building artificial parks of artificial objects. It could be argued that we should wait for future technology to develop - even

thru repeated crises & compromises - most suitable for either of these large-scale or all-out undertakings, & suffer the transition. Or that we, internationally or unilaterally, ought begin now to redesign the physiography of the US. This proposal is certainly unprecedented & disconcerting, & yet I think it's timely & accurate. I harbor a suspicion that the opposition to planning & federalism is hysteric, anachronistic, immoral, unintellectual & excludes third or Nth alternatives, just as there has been a late popular realization that the traditional bilateral political spectrum, & traditional political or ideologic dichotomies, are misleading or unwarranted. I believe that the estrangement of the totalitarian & highly organized state has been overbalanced, that there should & must be novel ways of regulating that state. I'm tired of the reliance on a so obviously inadequate civil morality to provide macroscopic correction & progress noncentrally. The morality required is much greater than the matter of precluding federal abuses or regulating governmental equilibria. The widespread detestation of 'planning' is preposterously naive, unimaginative & uninformed. One sees the value &need of a consensual, cooperative, large-scale, total, expensive & challenging undertaking. It's a serious question whether present & future problems can be solved by meliorist, noncentral, finite & temporary actions, & ludicrous&simmoral to let a psychologic drag interfere with a new reality.

I think we have a tendency to misproportion, disregarding eg esthetics for more immediate things, which's badly mistaken & makes quite a difference in people's thinking - the esthetic effects may be slow & inbbvious, since they build psychic character, but, as having that effect, they're extremely important. This problem is multiplied in terms of the inexis-

* — need of an axiotaics, esthetics, eudaemonics, deontology; eg hypothetically

tence of a precise & practical calculus, value discrepancies & a failure to confront the matter explicitly & in scale. (This is a very general problem, methinks, the ethical ability of politics is very poor, or the ability to measure, predict, control & realize value effects.*) Noise is an ex where government's power is clearly called for, where such authority is either responsible or supervisory, but in a way unillustratsd by the past & in a subtle dimension. Subjecting people to permeable apts, otherwise subexcellent, produces wrongous behavioral & psychic norms & a finite but signifigant, probabilistically speaking, degradation of values. All that's necessary is that one i) establish the reality of a spectrum of degradation, ii) establish that a finite branch of that spectrum is continuous. This done, one can impugn the presence of noise, of any type, by observation of increments & in proportion to the sum of the increments; conversely, one can use the direction of least increments as makeshift definition of perfection, and appoint perfection the object of one's reform. As a limiting case, one mightn't have the homeowner. I'm reminded of an celebrated mnemonist's remark, he was also an intelligent mathematician, that he supposed that levels of noise in cities, or out of the country, must surely prevent truely deep thought, ie which is hardly ever recognized by anyone but is everywhere recognizable, where it exists; let's generalize this man's fear to say that insidious loss of environmental clarity must be battering people into superficial shapes, and cutting out, in this way, many of the things which are intensely & after all important to human life. But this book isn't a treatise on the present, so believe that, in future, either devices or materials should be capable of serving as perfect parietal insulators, and perhaps fields or circumventions to neutralize the loose transmission or conduc-

tion of affective noise--to man, animals or environment--which is at issue; there may well be technics, used, which'll resist or silence noise which is unwanted produced by such things as collisions and abrasions of objects or operating devices, and there may be technics for screening off the noise which comes from more than 100s or 1000s' away in the city; noise, alone, could eventually cause supersonic or, possibly less worse, hypersonic vehicles to be prohibited in the sky and forced underground. N hypersonic flight,-whose object is to make intercontinental & transworld travel within the hour, & make global engagements & returns--faces such imposing problems that it might as well, for a sub-orbital trajectory is really 'just off the ground', occur within an evacuated tube within the ground, which would be silent, and super-hypersonic flight, whose object is obscure or by the nature of the case preferable, might best or only be done in this way (eg 2X 0-gravity = 1g); such velocity, ps, permits fantastic use, with certain arrangements, & might even admit of, by, certain economies equally fantastic; re CIF, this means that the whole world would be accessible to the whole world in 30', bringing non-euclidean, if polar, geographic organization due to transport efficiencies, eg in a smaller scale, inter-center av 500 mph, perhaps on a larger mass-scale. The reason things, in a super electronic civilization or the like, will continue to be transported is because of c, light's ultimate rate according to Einstein, & not their complexity (which always reduces to communication; however, the complexity of the last may be so great, eg interferometric, as to demand electronic, or analogous, wave 3D 'copies'); my reference is to a society on a gradient of emphatic conversion of value from material things, as such, being transported to immaterial things & representations; one could close the

food cycle into a local form and rely on currents & efficiencies, as also general biochemical synthesis, to materialize what is necessary as local or unlocal instructions effect; I'd expect, were or if I'm around, to see a whole host of devices, stemming from technologic evolutions, able to so synthesize & produce ingredients or objects in situ, eg genes and functionable parts of the brain (this, because eg molecular specificity, as instance of information, can be nonlinearly enormous, so that both wholes & parts, the data, would continue to 'move around'), and it's not inarguable that on certain occasions for certain instances greater convenience or priority will be in moving whole environments, to one another, objects or individuals, contra contra; eg on a galactic scale, it's not improbable that some day something will decide it preferable to have, not the mountain, but the planet 'brought over' the lightyears; theory and devices, and god knows but something like 'paranormal or parapsychologic' phenomena, may simplify encodation to where 'omni-specular' & 'dense' duplications & transmissions will occur (rather interesting; if one <u>is</u> searching for all the, physically determinable, acquisition of data about an object an object of the same material must be of about the same size, or unless one compress or rearrange the object, as is possible, on multifold internal levels, but then one might as well transport the object itself, unless it must be copied; however, if the object is one of a set known to the recipient, and the set is finite, then one may communicate a recognitional symbol, unless the set is vaster than the object, when this would be mistaken; one could use i) a lanquage, ii) an inspector or iii) a random chance with nonrandom size; in certain cases inspection of the object would be, interferentially, costly, and would have to be conducted on these terms; for certain purposes the object would be interferentially indeter-

minable, or aperiodically; it'd be in these domains that a nonphysical parapsychology would be so important, & it's understandable why partisans of same so often are mysterious about "another world"; it might be relatively easy to make & transport, -eg for decompression, -dense, steric or identic copies of [redacted] magnitudinous messages or objects, which might be nonviolently reduced infinite times, hyperbaric but corpuscular, [redacted] or leptonically encoded, as packages 'of tremendous import'; in summary, the message becomes poly-linear, interferential-indeterminate, or steric-indeterminate topologistic, and nonlinear strategic or logomachical, or exhaustive, of which there're several cases, and man, if you think this meaningless, I can tell you, in these terms, that you can't tell me what you're doing now).

I have elsewhere given a remarkably surprising analysis of possibilities inherent purely in the sensory interface & medium- or near-term technological possibilities of a device to communicate i) a fullest effect and ii) a fullest analysis of the external world, eg in the sense that we may have holographic tv to provide 3D images, we may also have photograph-quality, perfect-color, microscope-inspectable, stereophonic and x-ray or surface-penetrative fidelities on-line, and 2ndly, eg in the sense that a computer [redacted] intervene in the sequence & transmute or supplement the perceptual & conceptual experience, pointillistically; my analysis involved so many items & details that we must escape it here, in fact; & my point is, over the fact that such communication in the city will be overwhelming, that the progressively increasing complexity & abstraction of the casual & educative experience, horologically, and its rigorous logic, vis a vis the ever brighter computer (computers may become so bright they'll direct both society & men), will mean that an experiential,

colligative, interactive, conceptual & perceptual liason or symbiosis of man & machine & machine-free concepts will occur; again, it's very difficult to say what men have been doing in the past (until this instant), ie for the men in the past, & the difference here may be just more obvious, more, & more diversified; but the communicative age the cities are entering will be a reconstituted symbological age, & I believe the objectively & subjectively seen realities will be algebraically & violently unakin to what we're conventionally inclined to call reality or accept as safe, in psychosocial terms; for extreme ex, the first aware infant may be plugged into anartificial or modulated sensory experience which may i) consist in dots assembling in visual patterns, ii) in 'abstract' or linquistic patterns or iii) in algorithmic gestalts with little or no relation to the 'real' world; for lesser ex, these types or stages may come later in life or come in mixes with what we would choose to call more regular experience, one or the other predominating; for closer ex, our regular experience may itself be extrapolated or intensified to such degree as to seem, or to make the individual, alien; the important thing, that this wouldn't be unnatural or improbable, though it might produce peculiar societies.

A star is made by the [redacted] agglutination 'psychobiochemophysical', but this particular word is so important, because it describes the society which the city will come in the future to be, and the group sciences will interact very closely so as i) to be a good deal alike one another, ii) to comprise one another, iii) ways of attaining goals will oscillate between, iv) the society will be such a complex matrix of them as to defy our imagination or perspicuity. One can put a greenhouse in a desert, if it's sealed & supplied with a balance, & the daily light of the sun will

* (any vehicle in any quantity could drop thru the Earth for 42' antipolar coastfree transit 42' for any geo-chord, the catenary loops = great minima)

maintain it fresh until the mortar crumbles away. The homeostatic city of the future will never crumble away, but will negentropically maintain its inventories & survive on the light of the firmamental sun or the thermonuclear or better sun within, a microcosm which menalvorously resorbs its wastes, junk, garbage, trash, emissions, exhalants, corpses, destructions, films, loose rays, effluents, energies, events, ideas & persons, and returns them in efferent, multistage, tender, continuous, experimental & gigantic leakless cyclic systems, albeit running all over the world & often out into space. Moreover, that city will be a city of conscious, ever more brilliant, designs to reduce the entropies of its processes towards i) perfect elegance & ii) ideal isentropy; by the former I intend a) 'ephemeralization' ie accelerating & collapsing rate & prosecution, in the most universal & general sense & b) 'etherialization' ie doing more with less, microminiaturization or "anastomotic nanization", less re irreversible quantities; whereby the latter, most productive states, including cosmological, causing no additional intrinsic entropy, eg devices are appearing new more efficient with energy, frictionless & lasting, devices for applying these isentropies in motors, computers, industry & gravitational transport systems whereby the decelerating & accelerating of a train are managed by undulatory stations & generator-motor charges & in evacuated tubes; devices for carnot cycles of heat & cold & reversible chemistries via cellular semipermeable membranes, devices for architecturally reusing collective body heat; two 'perfect' exs of isentropic devices would be a two-piece marked disc spun in outer space to tell time eternally, and a correlative hypercomplex system of particular orbits similarly launched in space but cyclically programmed to make calculations as intelligent as the atoms of man's brain so as to work as a telic perpetuum mobile (deifically)*. The future city will tend to negentropic & isentropic infinity,

"reedification" ♀ The idea that what you are eating is food and not eternity is of course nonsensical. For the food is actually octillions (?) of atoms, which are energy schemes, in translatory configurations [illegible]

structurally. Take sitology: there're many biologic, climatologic, psychic, operational, chemical, bacteriologic, industrial & physical routes to the ultimate production of foods; it's now obvious that food nutrients & tastes can be differentiated into molecular configurations & that nature's arithmetic is suboptimal, so that new foods can be built intentionally that automatically surpass the vitality & delight of her pallid cuisine & flatter the palate; moreover, foods, in this way, can be assembled entirely from raw paper pulp, oil & shit, in fact, from, epiphytically, exhaled CO_2 & air, as well as junk & bacterial metabolites; furthermore, were alimentary ingestion bypassed hypodermically, the initial displeasure would probably be invalidated by alternative habituation, & this refined route is clearly a step towards the [redacted] micro-efficient [redacted] city; one therefore imagines a 'pinkhouse' (blackredyellowwhite=pink) in which both steric & compact, as opposed to agrarian, superefficient rooms keep babe & bathwater; this represents an alternative to maricultural reforestation, though the cities might still take to the seas to open the land. Electroautotrophism. This sitologic ex is analogous to other industrial transformations & recirculations. ♀

Among the situations possible, especially, in a steric city would be [redacted] specially opened or closed alternative systems of pathways, or emphatic systems, perhaps in some very special sense; this would enable the coexistence of contrasting populations, or an aspect of population 'thinness' in an actually dense section, stressing the importance of more distant parties; indeed, much as in a cave, a living space steric but not 'open' or geometrically regular, perhaps, arranged so as to intensify the ambiguity ala forestal vegetation, but orchestrated in these juxtapositive or anastomotic ways, would have the effect of destroying the sense of location, distance and perspective and substituting mystery, complexity and

x Alternative to [illegible] would be sound-killers to lower noise in a given space, or other [illegible] for [illegible] [illegible] men.

* similar psychic effect possible thru intervallic narcosis

ambiguity. Another similar situation would incorporate systems of transportation and debouchment, such that time would be collapsed for 'unequal' routes, the sensation or perception of rapid travel would be minimized* and these things would be done intentionally so as to dimensionally reweave the world space, perhaps even extravagantly for the maximum, and using more vertiginous hierarchy; or one could make seldom, eg the inter-level passages, for this dispersive effect (agoraphobia). The effect of these devices would be to enrich locales, subjectively or temporally (etc) defined; if routes were introjected through the globe, bifacially, an ampliative effect would be produced. Another instance of an effect upon locality would be connected with inertial subsea living, as it is with dense foliage in jungle, or struggle upon a mountain. The "open space & perspective" so fetishistically beloved by artists & architects might have to go (the only vestigial analogue would be the having of, strange perspectival, spherical rays) with suitable lighting or construction; but illusionary techniques,-such as dioramic, mural artistic or holographic; perhaps combined with a modulation of the movement of the viewer or inhabitant--could reintroduce or maintain distal, perspectival and symbolic-equivalent effects, without loss of necessary realism; an equivalent intuition might be naturally associated with knowledge of either flat or steric complexity, so that related to 'perspective', if nonvisually, might not only be reproduced but enhanced.

Ecologically, the vast dreaded and acceleratory pollution (some pollution has been deliberately decreasing) which has occurred insidiously & just leapt into the vocal conscience of the public, especially since its effects are now often pervasive, fatal & remarkable, suggests that population or industry may, in magnitudes now recognised as normal, desirable or unavoidable, be disproportionate and incompatible with states of nature hitherto unevaluated economically, yet in irreversible

senses, respecting what is irreducible or ambiguous to assessment. Whatever the judgmental price of deficiencies in ecology, esthetic or practical, recession of attained magnitudes seems immediately, if not otherwise, unthinkable, and yet there's the semidimensional possibility that a limit near the present would be somehow arbitrary, or the possibility that a continuation, even until completion, is called for from the ambiguity & damage, and the prospect of a brighter substitution. Re the controllability of pollution & destruction, within political parameters, the causes of maintenance & extension--air, water, ecologic, land, psychic--are diminishable or eliminable, apparently or hypothetically according to the case, though the question remains at what immediate, lag and final price--or whether particularly or systematically--; there're various 'stages' describable. To recover, if not restore, the riverine system of a distinctive watershed tubular or canal bypasses (inhumed?) may provide a more direct and sealed route to the receptive ocean, but it's questionable what the finite & infinite capacity of that universal terminus is, or perhaps self-evident, eventually it'll tell. The real dimension to atmospheric pollution, similarly, is the tabular & holospheric intensity, & innocent chemical reductions in contradictory & dubious synergies, eg interstate & continental pollution is now probably factual, and the atmosphere is now in the process of being progressively modified by the reactions of man, neither is it an infinite sink; thirdly, the very solid earth itself must be able to accomodate only so much disposal, even were a substantial area exclusively allocated, & it must be recalled that the skin of the earth, what's sofar accessible, is a circulatory system of great & unrealized value susceptible of ruin, witness the harm already done; nor does it help to translate the wastes within the triad, eg incinerate [redacted] or liquefy debris, or encapsulate.

'costs of natural adaptation'

x 'natural' parts of cities

Some new types of wastes or external disvalues are coming to light or receiving consideration, such as thermal pollution and the effects of civilization upon the climate; tubular potamic bypass might work, in allowing central industry & nuclear plants, but littoral fishing and beach effects might remain or intensify (there is also large-scale cumulative [redacted] isotopic [redacted] irradiation to consider, since increments of radioactivity seem inseperable from reactors); some rivers are already tepid, & the thermodynamic intensity & extension of industry is likely to continue soaring, & there are atmospheric & conservative heats connected with mere populations; these [redacted] heats, with sui generis conservations, are comparable to those of the air over & within cities, [redacted] contributing sweltering summers, if milder winters (it's the latitudinal abnormality which's serious), (we can, of course, define the whole poles as frigo-polluted); the low & unimprovable gross negentropies of industry are for that reason problematic, sofar we have neither system nor patience for exploiting the low negentropies in diminishable peripheral or circulatory production, nor, ideally, anisotropic improvable processes (the essential isotropy would be interchemical); it is, however, conceivable that the small-scale [redacted] reuse of descendant heats in eg air conditioning, could be escalated & refined in an entopial city, in fact the whole system of processes placed into a gracile hierarchy with efficient loops and athermal conversions; the antithetical tact, of course, would be a mode of wasting the heat, indifferently, or a minimization of the initial intensity & extensity of the thermal processes of civilization. We now return to the dilemma of the natural, imperiled environment, qua landscape of the super city. If we can't, economically or technically, return or eliminate proportionate wastes of civilization, then we must either decide

"reperbation"

in favor of some or the set of aspects of nature or of civilization, and respect a time-scale and gamble; decision in favor of the latter means more than meets the eye, since man is a part of nature, by inhabiting and farming it, and the investment of nature with mountain-fulls of catalytic waste would soon so contaminate the open elements as to degrade, jeopardize &, singly, destroy men, certainly to radically alter the form of environment, eg brightness of the day, visibility of the stars & cityscape, sources of water, inhalibility of the air, dirtiness of the air and buildings, flavor of the air, visitability of the countryside, existence of remote resorts or reserves, & all of the myriad tremendous values of the ocean, as well as deplete the air & quiet the mechanisms of its recovery, etc. And always recall that international industry is now just beginning (recall Japan), with respect to multiplying population, which will be the major & generalized source of pollution & disruption. It's evident that an open-ended industry, & magnified & prolonged far beyond today, is incompatible with an open-ended and untransformed human habitat (we can fence-off the heavens with megadomes); the upshot is that the choice of an open-ended industry (if indeed a choice) presupposes an enclosure of the agriculture, recreational nature, living habitat and whatever else we should care to save plus an anticipation of the final transformation; in fact, this is an excellent, if imperfect, argument for the self-enclosed factorial city, the & segregations natural rub being that we should thereby be sacrifising the largest purities of the environment, short of specialized enclosure; an alternative would be the 'balloon method', ie an infinitely expansible multi-nozzle bag into which would homogeneously go all disregardable wastes (whereas certain industries might survive, thrive apart, in this unnatural environment, their spatial displacement could achieve nothing but a circumvallate

use of the surface & below; per contra, recreational expeditions, suitably protected, might find the inner world exciting or challenging, without displacement); this receptive bag suggests two problems, it would grow until it absorbed the geometry of the world and until all resources were exhausted; it might also be synergistically unstable; it would offer a great stopgap; it is also an engineering monstrosity, being an artificial ocean and geologically unstable; in nuce, we might aim to resign ourselves to an inevitable recirculation of all industrial, populational & natural process or to enclosing ourselves off from a suitably & selectively self-damaging waste exosphere. This third possibility envisions, per direction, capsulation of the cities & external buildings in resilient or impenetrable domes or membranes, or their immurement, similar tubulation of transport routes, or aside from this insulation a subterrestrialization (truely suburban) of the parts; intropolitanly. But a few distinctions, domes have been suggested, apart from novelly, for their ability to regulate the atmosphere (as well as save money) & yet be tralucent--clear, webbed or milky--, & yet the seen & brilliant sky would be opacified by the intrusive dust & clouds; the membranes might be semipermeable, emitting the unwanted and admitting the wanted; skyless, the unsuspending dome might be flattened, or replaced by a continuous sheet or structural roof, though localized or holistic domes or general buildings or shells might be retained and the scape artificially illumined, as by reflected torchlight or effulgent pseudo stars or phosphorescent stripes or sheets, or the streets enclosed and enfolded into corridors & operculated sealed buildings (perhaps endodermally connected). Proposals for such enclosure needn't seem so radical, since they've already been seriously made for our own roads, houses & cities (eg to protect against the weather & smog, by hemi-cylinders & domes, & re underground construc-

"the "grey areas"   'omnificence'

tion, living & cities, eg for nuclear war, ditto, ease, curiosity, economy & industrial/populational segregation), & since in the future such parenthetic reasons will be stronger, & reinforced by crowding, expansion, new & 'obvious' techniques, the very long-term advantages & enlightenment on possibilities, desirables & necessities.

As to the art & science of designing cities, we have indication of changes in computer graphics, computers which can assemble manually a figure out of imagination and evaluate its stressestrain material-structural feasibility & worth, hypermnesic computers which can bring to life all preexisting design types and architectural information, ditto in urbanology, computers for strong systems analysis of existing or hypothetic cities, computers for interlinking a human team and providing machine interaction for the conception & construction of a whole city (even into cross-matrix & intrinsic variation futures, into some horizon of eternity), & other liasons; the power of a computer to reflexively extrapolate myriads of real or hypothetic data, circumscribing major urban possibilities, & thus to project variant states or versions of the futures following from arrangements in the present is esp interesting, & in that it vividly suggests how urbanology, or urban possibilities, are fast going to assume plus-human or transhuman form. But my reason for citing these mechanical changes was to emphasize how art & esthetics of environments will decreasingly owe itself to human employment & handwork & increasingly to extrinsic & intrinsic considerations in computers able to choose randomly, vary by rules or intellectually invent the sensory & practical, overt & covert, patterns of the 'skyline', as it were, of the cities; the impact will be more than obvious, overwhelming, as modalities & controls will spread through every structure

√ "palliated city" vs concrescent arcanum / analogy

built in an area & continued throughout the globe, as futurism--a science of variety--will manifest itself through machines to maximize the design infinities possible with the matrix of materials, effects, architectures & societies & to do so with an 'organicity' impossible for oligophrenic men; the point is this, the geometry & arithmetic of urban forms, which're composite, admit only of a certain infinity of variations, reducing to what is humanly signifigant & important, granted that this infinity is, formally, undemonstrable, but esp admit of a hierarchy of what is relatively most important, as a spectrum (spherical) of variations; this case stands on its own, but note 3 aspects: i) variations through time constitute rhythms, which can be varied repetitiously over generations, ii) the lifetime is finite, but doubles to give the temporal extension, iii) it can be argued that the virtuous effects of a pattern of variation admit only of a limit intensity, simultaneously & nonsimultaneously, & that the pattern effect is superficial & 'always' uniform; n that one of the reasons men perhaps distrust the outlines of their cities, apart from the patent rigidity, incoherence & 'attachedness' of today & yesteryear, is that their fixity contrasts sharply inevitably with simple perceptual themes of the sensibility and littler environment, witness the gaiety of a meadow, leafy shrub, gem, cloud formation, mold, sunset or microphoto of the microcosmos - whoever built a building so lovely as a tree? permutative crystalloblastic snowflakes typify how novelties are structurally extractable as the symmetries of an inventory of mentally unique materials, only we imagine a concentrated distribution indifferent to the size continuum, thus we may say that were it wanted or necessary the future cities, united by beauty, could be divinely kaleidoscopic & fanciful, 'the substance of dreams', tho i) it might not be so, ii) a science of illusion might intervene, & the city as well be really amorphic, untextured & functional.

It's possible to define a good or great artist as complex, perceptive & sensitive, & to use these terms descriptively re city forms, & that these traits will be mechanically heightened in future cities; it may be argued that the comprehensive & gifted powers of the artist, eg, were lacking in previous accidental & somewhat intentional cities, ie uncorrelated with the nonartistic multitude of considerations, eg engineering & plan, & that machines will again or finally integrate the galaxy of signifigant aspects in esoterically but powerfully perfect city designs and, as the machine identified with its city may be highly dynamic, processes in time; an excellent ex of this is the dictionary, where English contains 5-800 000 mostly nontechnical words, with i) fantastic descriptive range, ii) fantastic descriptive power if used rigorously, & iii) using the BWhorf psycho- and metalinquistic hypotheses, permitting vast obvious & inobvious alternative vocabular & emphatic realities, in contrast, where this reservoir of terms & states would be usable & expressible by a hyperactive, hypersentient, perhaps hyperintelligent computer animal; the possible modularizations of the conscious, unconscious, action-infinite & reaction-infinite world would be one milestone on the road to measureless utopia. In terms of this, I have suggested that the same value quartet could be developed, controlled, temporally ("chronometricality"), that the gains thereby & nature thereof make it an inevitable direction of progress; thus the city would show itself as 'chronopolis' and the machines of its construction, under instruction or freed for themselves, would ever design a 'history' of the race, with various adjustments, to which all momentaneous modularizations would be theoretically subjugated, perhaps probabilistically (ie in a game of urging types of probabilities in experimental, macro- or semi-intentional, directions).

* perhaps much less; eg 10^{-13} E, 10^{9-10} tons (~ cu. miles of [redacted] dirt), also the 10^{15} would imply an efficiency of 10^{-6}, the question is of how much of such medium matter is entropic, though entropy may be instrumentally nonrigorous; 10^{15} is still 10^{-7} the ultimate inefficiency

Let me briefly counter the skeptics re the relations of availible energy to the undertaking of 'planetary engineering' & to the future energy of the cities, in relation to a fixed reservoir of energy, ie contained in the matter of the Earth. The total power consumption of the globe is about equal to the essential mass energy of a ton of any element (all figures here are most rough); ergo, at the present rate of consumption civilization could continue for $6 \cdot 10^{21}$ yrs in utter disregard for the solar energies currently manifesting in hydroelectric, fossil fuel, [redacted] aeolian, biologic, solar & other schemes for the inefficient production of electrically circulated energy, which represent only [redacted] $2 \cdot 10^{3}$ equal tons of the annual radiant receipt. I would say that between 10^{6} [redacted] ^{9} tons of matter could be made to achieve terrestrial escape velocity by the ultimate expenditure of a ton, ie that the frictional anti-gravitic disassembly of the Earth would require an energization of [redacted] the Earth of about that order, ie [redacted] 10^{12-5}* 'trivial' tons of the most unimportant matter (which could, to a lesser degree, be recaptured in whatever reassemblies occurred); one might "raise" the Andes for 10 000 tons expense. One could have 20,000 150tn jets going 600mph by energizing a gram. H fusion would allow civilization to continue normally for 10^{14} yrs, 10^{4} longer than deuterium fusion, but 10^{-8} so long as matter annihilation, ie the latter permits a 6 billion yr future at 10^{11} more annual energy use than at present, all this ignoring the greater 'efficiency' of a 'completed' [redacted] & 'cyclic' city; one could therefore imagine a city, for that lifespan, 10^{11} X as large as what now obtains, though only 10^{4} by solar flux purely; this would correspond with some estimates I've made for maximum populations of 10^{20}. Re simple fission, commonplace granite possesses Th & U enough to be 10 X as rich in now accessible energy as a proportion of coal. The annual

X we could run the ~10^28 erg atmosphere FOR ~10 tons/yr or a sextillion yrs, much of which would be recoverable, if irradiate; [redacted] 'mesotemples' are intrinsically conservative.

receipt of energy [redacted] from the Sun, finally, gives 1 g/100 erg as the ratio of constant energy and matter for the volumetric Earth. These figures prove that an enormous, long-term amount of obvious activity can characterize the future Earth. If the activities are made highly isentropic, it may be suggested that the residual entropy could be compensated adequately by the above 100 ergs/gram. It may be that a lot of 'brutality' will characterize active processes, in the sense of forcing things to do what is uncustomary but fruitful (eg using forces to sustain ultra-high structures or to accomplish certain chemical reactions, or to permit devices employing the "elementary" particles), but it doesn't necessarily follow that these brutalities must involve great entropy. It's been suggested that a vast amount of inertial movement, such as social mobility and ever-changing architecture, will hold true in the future; this might be carried over to the shipment of quantities of goods, and the need to think in terms of very fast or large transportive systems; however, I think that whereas this might eventuate in the next 0-200 yrs, the causes of the need and value of such kineticisms are either directly diminishable or deflectible, eg communications and intellectual machines should absorb a good deal of the external motion and materialism, and the effect of stimulating the mind by perceptual variations in the landscape and the illusions of travel ought be sublimable and imitable by indoor and in vivo agencies, by techniques of training the mind, or by innumerable other methods; in Japan we have the case of violently disregarding the baseness of the exterior world and a sufficiency of quality and interest in the private interior; in the same way we have teenagers pressed to their tv or hand radios, while scribbling ubiquitous graffiti and discarding cans on the roadside, or maintaining 'order' through marathon telephony and shambles in their bedrooms. I, as a kid, always was entranced and

attracted by junk dumps, what have now become political outrages, and found the insides or vicinity of factories and warehouses to be fascinating places to visit and observe as mysteries; public opinion is arbitrarily persuasive, capable of stigmatizing and romanticizing indifferently and profoundly, and it's quite likely that types of consensual ugliness are conscious and unconscious figments that tend to perpetuate and generalize themselves as psychologies of prejudice, eg a symbolic connection between the orderliness propriety and the abhorred dumps; it's possible, of course, that instinction demands various physical and social relationships of the world, specific or inspecific, but no clear judgment now seems possible. It may be that past society was unnecessarily attitudinal and hypocritic, and that a social trend is now established and veracious which will obliterate environmental values, such as cleanliness*; it would surely seem that the past's values are adverse to other conditions of today, such as crowded sidewalks and velocious highways, though their subtler intrusion has raised a lesser remonstrance; in any case, technologies for precluding all such irritations seem probable of invention.

One of the things which is wrong with today's cities, as the past's, is that travel through them arouses a patterned interest in the contents surrounding the ways, without enabling any satisfaction of curiosity, and whereas for the casual and happy or secure passerby this can intrude an element of mystery, this becomes a source of irritation to the opposites; it can be argued that this is a psychologic problem, analogous to the inability to visit people at random, in the city, or the tight privacies that lock doors, have doors, obey mores, insist on dress and walls. One can imagine retaining some courteous ceremonies in the future, but as un-

for intentional city, holopolis, stereopolis or accord for deep maps

necessarily decorous or decorative; love can produce many ceremonies. Behold love! - 'tis the guide for the idealler futures of city life, 'cept magnified 'infinitely' (by the last I mean that the causes and then desirable aspects of love which are what we value as love, be intensified and selected, perhaps cultivated, to technical ultimates compatible with simplicity and excellence in the city; this might just involve things such as absolute fidelity, to ideals, greatest emotive empathy, absolute consideration, brilliant altruism, zealous creativity, zest, optative perception, conception and performance, fullest intuition, maximal social unity, absolute integrity; it may occur to us that these states are normally or statistically achievable only at a very low level, that human nature must and correctly be riddled with galaxies of flaws, which no futuristic training could transcend considerably; I assert that if men were micro-psychologically built and/or maintained, which is feasible, then the extrema I name would be possible; it deserves to be pointed out that new psychosocial equilibria could be catalyzed by minor manipulation or improvement, and that there're probably subtle techniques for inducing configurational changes in the personality of individuals and society, eg automatically; love can simply be defined in terms of spontaneous & total constructive conduct, or in terms of the adjustment of organisms). If a eupsychic climate prevailed, per example, motorists would probably find ways to produce polite jokes with their cars, in fact all traffic would be a colossal mutual amusement, the cars would be painted & dressed up psychedelically, hitchhikers boarded automatically, all cars fitted with transceivers for intervehicular banter & suggestion by all owners voluntarily & spontaneously, roadsigns would be made to do improbable things, some roads built uselessly, streets colored, etc; kis-

sing & hugging of hetero/homosexual strangers in public a regular occurrence, spontaneous dances would form on the sidewalk, people would unhesitatingly air their views, not only public osculation but intussusception would be permissible ("O, let me give you room!"), certainly frottage, there would be free hot dogs everywhere; this eutopia is not impracticable in the futures, on the contrary, I rather suspect that it will tend to recur in situations of normal intercourse; further, I think that today's neutral & abient, ditentive & distant ethos will be explicitly indicted, found terminable, & replaced; granted, some mass aloofness may be preserved for efficiency, but with a completely different understanding & character, certainly people will be gregarious, extroverted & introverted (holo-verted), and possessed.

I don't know too many anthropologists who claim prediction for their science, so as to offer moral, customary, behavioral, rational, axiologic or sociologic vistas of the future, even highly conditional, ideal & circumscribed; altogether they're a foppish & pusillanimous horde, u c; but their predictions could include the modes: transitions from present things, abstractively or holistically, islands in the future, secular trends, secular accessions, lesser probabilities, complex eventualities, intrinsic growths, impossibilities, theoretical occurrences, value-orientations, conditional propositions, hypotheses, variously sized stable & unstable phenomena, normative & suprapersonal phenomena, irreversible & evolutionary phenomena, intrinsic plateaux, much less unfamiliar & spectral societal & world structures, and a (the Faustual?) unified theory of man & time; were a few of these ideas to be concretized we could then decide that influential or fairly rigorous relations obtain in alternative city structures, or that some initial or subsequential stimulative rules, in the

structures, relate to efflorative processes in city life such as to complement & fulfill overall possibilities, or that various standards ought be held to, or that trendless or trend-including fluctuations will have semblant or representative results calendrically or subjunctively, or that social uniformity & homogeneity is normal for ever, or that there're social invariances or multivariances, or that society has secret "musics", or that current obsidious problems are dependably temporary, or that certain 'institutional' arrangements are optimal & preferable, or metastatic margins, or hierarchies of factorial importance, or rhythmic phenomena, or alternative & attainable societal directions & the appearance of 'final' futures, or quantitative relationships, or specific morphology & ingredients of institutions & total society, etc.

The culmination of a/nomocracy might be a working anomie; it's possible that laws could be included & excluded, varied a/rhythmically, effectively, & that technologic & psychologic changes could warrant & invent anarchies; contrariwise, that these same dualities could ditto hypernomocracies & heteronomies, the concomitant values of which could be some efficiency, awareness, direction, correction, misuse, safety, parsimony, experimentation, metamorphosis; bis, that we could have an autonomous noocracy, a rule of pure distributive reason, where the laws could be suggestive & adaptive memories, heuristic inquiries, or synergistic interfaces; such a metamorphic exchange of jurisdictions & autonomy, eg, could familistically extend to the child. I've suggested that the 'state' could become less political & more functional, with sharp & antipolar differential autonomies & heteronomies, or just a 'place' with high information flux, maintenance & ingenuity; more important, the raison d'etat might be destigmatized, perhaps decommunized, detaloned, humanized, restricted, mechanized or elsewise

'coalitions'

modified, scientized or rationalized, so that its types of heteronomy would be beneficial to either the commonweal or cosmic prosperity, with abnormal & adequate certainty. There are any number of revolutionary ways of democratizing & improving the law & civitas.

There're possibilities of marked or major reduction of crimes by technologic innovations, including tracking of movements of all citizens with precision, personal telecommunications, 'foolproof' transactions, automated credit, 'amazing' weapons of apprehension, perfect & immediate identification, curative & preventive treatment of offenders, an impregnable & supersensible environment, a remotely controllable environment, a prepared & mnemic environment, technology of examining individuals, data-bank, rearrangement of law with respect to indicators of guilt & methods of operation, testing requirements for all citizens, perfect audits, & technology of education & standard of living. And my point is that these 'perfect' methods, which could expunge every crime & limit every criminosis, could be maintained, structured & guarded against in such a way as to be, surprisingly, welcomed benevolently, to build up a vindicative record & to reduce misbehavior to where their use would be belittled, their form more innocuous, in response, & their agents improved; moreover, there may be a trend to accept & exploit identical technologies. My view is [redacted] that the institutions of development of the individuals will properly be given a most fundamental role in creating them, ie will be destigmatized & apply technologic aids & theory such that we may say a) the men are 'constructions' or b) the relation between the omnipotent institutions & aids and men seem "intolerably" intimate, since i) that may occur insidiously, ii) the advantages will be conspicupusly highlighted, iii) the disadvantages will be modi-

fied or excused, iv) the contrasts to the inferior standards of our types of men & societies will be extremely sharp, v) such intense technology will be universally adopted in all aspects of the already much more 'scientifically' organized societies; this means that the present has the opportunity to recognizably facilitate the inevitable. I would suggest that the emphasis will shift away from the 'subjective' individual v collectivity v state dialectic to objective matters such as epistemologic, societal, supra-presential & maximal considerations, away from zoroastrian towards nirvanic values, techniques & structures with a scientific agathology.

If we assume that machines will play no role in city & building design comparable to the human architect (it might still be that the role will be a lesser, if more general, one), then we're faced with the question of whether but little will be novel, or specially chosen for the design reasons of site & purpose; naturally, we could increase the non-architectural design choice, by an assistant or merely technical, or wholly inexpert or informed inexpert, selection, though this would employ men, & whereas this might produce only moderately better quality; it remains, that architects in society will be fractional cumulative & inventory-multiplied (for different areas) designs will only gradually occur & then be subject to clastic & finite dynamism. But, positively, residual interstices may fill faster, architects may train themselves (or be employed) to handle broader, larger, more superficial & faster aspects (perhaps with less economy, mechanized, technical aspects simplified & mechanized, in conjunction with a graphic or instructive & communicative machine, more symbolically symbiotically mechanically, with physiologic stimuli increasing personal capacity); a fortiori, I believe that

any artist or thinker (head banger) is capable of [redacted] hyper-ideaphoria, a state where solutions are supernumerous, imagination mountainous & docile, &, in fine, productivity prodigious, so that I see architects executing whole cities, alone, with richness & originality of detail, & their essential number being tiny, and genius normal; this force could be produced in the ante ways, or through external or internal training; a hideous fault of our society is that we produce wrecks & mediocrities, the former in that we're pretentious about wholeness of personality & man's nature (& inter-psychically crude), the latter in that we use par standards as ideals (ideals ought come out of our private imaginations, albeit in an impressive climate).

In terms of technology, 4 types of cities are describable: 'modern', 'ideal', 'fantastic' & 'ultimate'. The first would be the class of cities which would result from projecting new & imminent technology into exploitive embodiments, much as will occur in the next 100 yrs, according to conventional myths. The 2nd is rather extra-technological, in the sense it is the class of cities which would conform to the ideal possibilities suggested by, but [redacted] prohibited in, presently existing & foreseen cities; an example would be a city freed of the multifold problems which threaten & pollute our cities. This actually shades into the 3rd type, eg which includes ultra-fast transport, but this [redacted] 3rd type would include various ideas which currently have little, no or a negative basis in science or expressed needs or plans, eg instantaneous travel, antigravity buildings & some spacial cities. 4th, the 'ultimate city' is less improbable than it sounds, ultra farfetched, inexplicable & even incomprehensible, but attempts to extrapolate to limited or limitless infinity the general & complete elements of any city, sofar as we are capable of drawing urban analogies. Every class has the chance of an eventual real representative.

A 'Modern' City

For irredundancy's sake I'll sketch thinly this model, in context you should be able to amplify it suitably, esp since it's so natural. Noisy & fumy cars are prohibited, electric and electrochemic cars, pods &/or mass vehicles with 'rubber' tires interlace the city, perhaps in public systems such that the vehicles are summoned & credited/rented & interconnect to extra-city systems; movement is swift & undelayed, driving being done automatically, accidents are scarce; the system is hypereffi-cient, occupants may relax & be entertained, delivery is comprehensive & door-to-door; intercity and some intracity systems employ gravity, evacuated, jet, pneumatic, (magnetogravitynic) linear motor, air cushion &/or magnetically levitative (or other) schemes, giving average speeds of 200-1500 mph; horizontal systems smoothly interconnect with vertical ones; occasional monorail & surface systems are for scenic reasons, otherwise underground, intrabuilding or enclosed ways are used; the cross-city grid need involve no transfer, or a simplest one; the system is maintained by robots, breakdowns are rare, & is utterly safe & comprehensible, a destination may be vocally preprogramed by one sentence carelessly announced; the system is kept immaculately clean & flawless, is esthetically sophisticated & provides facilities for emergencies, lavatories, eating, intercommunication, entertainment, sleep, possibly residence & 'business', as well as being criminally sterile. Architectural design has produced many new structural & decorative appearances, in response to technical, theoretical & material possibilities, & the city may or may not be very distinquished from contemporary cities around the world, with its designs similar/dissimilar, conservative/radical, etc. There may be some unpredictably new types of buildings, or half mile high skyscrapers, extraordinary cantilevered


conic
asymmetry
obpyramid
tau cross
ramal
arboreal
spheroid
topiary
matrix
trellis
arch
arc
spiral
disc
nuciform
cornu
amorphic
dome
hanging
pile
petticoat
cylinder
lophal/wobble
helix
flat
plate
tectorial
filament
rotor
perforation
shell
stilts
cage
lomocentric
vacuocentric
froth
ridges
crags
funnels
rechabitist
cliffs
plications
walls
supra-rooms
ha-ha
tubular
odontoid
aggregate
umbrella
pyriform & obpyriform
windowless
stabile

components, all glass, all plastic, all other material, all transparent or diaphanous, extraordinary textured, height-concentrated (eg obpyramidal, umbrellalike, obpyriform, discuslike, ramal, tau cross), windowless, odd formed (eg asymmetric, topiary, trellislike & matricial, sculptural, hanging, conic, domic, spherical, arboreal, arched, arcuate, wobbly, aggregative, filamentous, pilelike, 'biological', odontoid, amorphic, helical, mountainous, cylindric, flat, plate in air, light & fantastic as unoccupied, see-through, hyper-rococo & pictorialized, mosaic & chimeral, monstrous, perforated, vacuous--interioristically & exterioristically, vertically & horizontally, concentrically, shell-like, spiral, cagelike, frothy, huge or high roomed, vacuo-centric, walled, ridged, dome-centered--, crystallographic, naturalistic --eg cliffed, craggy, waterfalled, afforested, meadowed, soil-like, nubilous--, mirroring); cf "173. structures" in The Future of the Museum; in fact, the texture of the whole city should change, eg becoming more like a forest than rectangular canyons or a plane, or integrated into some horizonal views), chromatically new (iridescent, mirrory, particolored, any colored, flourescent, phosphorescent, op arty, tinged), basically new (eg geodesic domes, perhaps covering cities, fancy stressed shells, pressurized skins, tentlike structures, highly modularized, mathematically new & esoteric simple & complex & composite, folded, flexible & mobile, perhaps ever-changing, highly plexic, half-buried, funicular, chained, fractional storied, slant storied & 'graded', non 90° coigned, circular, fluidic, floating in air & water, earth/rock/ice excavated, underwater, perambulatory! readily fragmentable, wholly functional & inwards-directed, collage-like, subhuman, nonhuman, purely monumental, a new class of buildings not necessarily inhabited but being the contours & structural members of the city itself, eg transportation structures); the places to

see will be much more numerous, various, elaborate, better, exciting, sizable (I have sampled these elsewhere in CIF, eg p 47); goods, such as constructions & electricity, ought become intrinsically cheaper, with economies in their production, & extrinsically, with per capita income rising irrationally high, absolutely, plus the assumption that improved economic relationships will form in time (can; per tradition, views of the future exaggerate, usually optimistically), & it can be argued that costs of production & prices of marketing could plummet to relatively insignifigant values, there're even ways in which this can be effected costlessly; the conflict between external travel & domestic communication or fixity has yet to resolve itself, partly because neither of these have extended themselves far (formerly, eg prettier & happier modes for new motives to other & new places at tinier rates; latterly, causes of externalization remain near universally compulsory, eg food, goods & work, whereas these three could be internalized or, in a sense & to some degree, abolished, although other causes of travel obtain & might, with removal of the compulsions, increase & flourish, such as superstition & proof that exercise like walking's good or essential, mentally/physically, & socialization, granted that the race is capable of mass error extending to suicide; one contemplates the gain by extinquishing all the broadcasting networks; it might be that the human animal, new or old, is dependably maximally lazy & irresponsible, if isolated -sycophantically- with tv set & kept at home, or withdraws variously psychically, &, indeed, that political coercion might be one day necessary to curb or terminate this degenerate law; on the further hand, social intercommunication could have the opposite effect of intensifying & maximizing interaction & growth, though even this might tend to excess, say self-correctably), so we can foresee multi city agree-

ipolynuclear qui

ment/disagreement in contrary emphasis ala popular/governmental disregard/ regard of the exterior/interior city, in the diversified ways, with degrees of association, it's certainly obvious that employment will be an example & source of strain, differentially, as we may forsee the need for external & residual occupations in "undesirable" labor such as repair & construction (unless automated; also, contraception could result in a large or majoritous segment of population without offspring, pessimistically, whereas reproduction might be steady-state or expansive, which former simply means exterior intercourse for intercourse, which latter means the need to extend, & possibly plan, the site of the city, in the possible dimensions linked with the degree of the rhythm & its family; whereas these ideas may be too catatonic, some turbulence & surprises may be anticipated in the days ahead; maximal or even optimal automation, defined multiply, are tightly & ignorantly resisted today, but one can recognize the possibility or probability, or theoretical necessity, of an economic revolution through its powers at command; briefly, as many "cruder" jobs are unintellectual, many intellectual jobs are sterile & undramatic, we certainly need a new definition of jobs, operationally, which must be phrased in terms of a reconception of society, because many men must cling "perversely" to their "useless" posts, & whereas the secret might be through robotic redundancy, even some degree of 'paternal' & ethical expectation, perhaps recast legally, marguments can assert that such redumdancy, stationariness & anthropocentrism is abstractly wrong, particularly insofar extraordinary visionary alternatives are possible, as they are); this conflict can be arranged: domestic lures will be radically better & universally installed, a 'psychotopia' by cerebral or physical stimuli may be comparable to communications & goods-gadgetry, travel may

be naturalized (reified), city life in the open qua business, culture & shopping may be intensified concomitant to architectural delight & happiness; there will be such a proliferation of possible & real goods (in sensu lato) that there may be a society which is agitated by incessant variety (passively or actively), & the variety will be in terms of design & basic novelty, latterly eg new foods & tastes (again, the problem is that covert hedonism may capture naturally irresponsible men, as we have no way of overseeing this; this may be more likely in some world societies than others, though possibly transient); the ratio of broad airport (re SST & HST, or slower but larger) to inhabited area may demand either elimination of air modes, with exception of some automatically or semi-manually controlled lesser vehicles between roof-ports & such, or smaller airports for VTOL & STOL (a bold imagination might picture vast craft maintained in the air with ferrying for goods, fuel, repairs, passengers, with smaller connectors) with polycentric dispersal (non vertical craft could be enabled by submerged ports with busy elliptic turbulente - directed egresses & ingresses, though some excentric rural & water skyline ports will be everywhere built & connected to the city by complex very [redacted] & hyper rapid transport systems), the load of craft will become large & enormous, & decreased rates may elicit vast & far international mobility, with the effect of conjugating & juxtaposing the cities & spaces of the globe surreally; migration [redacted] & contraction of agriculture (eg to the oceans & UDC's or South, and to factories or factory-like compressions, respectively) may combine with centrifugal urbanophobia & 'the new ruralism' & the new transport conveniences (eg GEMs & other extraordinary, eg house-like, vehicles) & living conveniences, remote portable power, disemployment & new frontiers (etc), to deemphasize or transemphasize habitation within the influence of the

X 1970 = $800 paper house, $7 2-adult plastic tent

city, possibly creating or encountering a very diffluent, multiformed, horizontal, naturalistic, large city or city hybridal with wilderness, in any case, a nonintegral city (architecturally contrasting with what's been thusfar considered, in CIF) of individual & multitudinous, if scattered, buildings (the term is extended, from house-like clothes to backportative rooms & inflatable micro-garage cars or near air vehicles to quickly, intradaily or momentarily, assembled domes, foamed walls, tents, boxes, fossorial dwellings, metal or plastic cylinders, to multistoried, mega$tructural & [redacted] city-size ones) (one imagines hordes with vehicles with 'snap' buildings 'touring', probably but not necessarily, recklessly, or nomadic harebrained happy-go-lucky armadas chromonautically circumnavigating); the alternative, perhaps more probable, is to foresee skyrocketing densities with a gradual intrusion of devices of high maintenance & some artistry, with the asymptotic aim of geometric solidity, & renewal & additive aims to push higher (perhaps breaking through into pushing lower for higher, but with a more dispersed structure & conduits), though one can also imagine stable population metabolically, or, very probably, a tendency to stratigraphically run the new population off into adjacent & distant cities built from scratch with the freshest technology & ideology ("new cities"); cf 45th p for more; the 2nd side to the city, roughly social, I skip over, because my competence is weak, apart from my mettle, when it comes to personalities & 'power structures' trivia (variations on the theme have been given above; it's also true that the extension of science to the noetic, psychic, social, societal & philosophic dimensions--now occurring & due to accelerate--permits 2nd side transformations, eg less or more real oligopoly with enhanced mentality & information; it's definitely possible, as usual, to describe routes to a malformation or abuse of

power, or even unprecedently irreversibly, allowed or reinforced by technologic & societal changes related to history & the structure of the cities, eg serious harmful corruption is already pervasive, & changes in popular thinking could well induce particularly dangerous absolutisms, say a policeforce which sees itself as a besieged machine in a basically unnatural & insane environment, so imagine a professional national force, perhaps childhood-trained & very traditional & insulated, with the same attitudes & a 'strategic plan'; the number of such examples is effectively infinite, pretentious for our scope, but remember that a spectrum of capabilities is mysteriously in the cards in the myriad futures); hopefully we're getting over the war syndrome, otherwise there are various ways of structuring & running a city to minimize the danger to people & plant, or maximize the defense, stocking goods, training & having alerts & mock reactions, organizing & installing communications, affecting education, passing laws & presuming mores, organizing & installing transportations, dropping shafts & having capacity shelters, building underground or compact cities, or otherwise modifying normalities (however, threats are posed by new & uncertain nations & notions, accidents here & there of myriad sorts, loco & impetuous individuals; comparable insurance might relate to suppressing & anticipating natural catastrophes' patterns, geologic, astronomic, ecologic, meteorologic & scientific); controlled or random genetic, medical, biologic, psychic & cyborgal changes in man's form could demand & permit variations in modulus & organization of cities, though these changes might be delayed or gradual, & but slowly understood or experimental; computers will have the constructive & monitorial roles discussed supra; but I've referred to a "class" of cities, what distinquishes them? a city is old broad enough, or so complemented by propin-

quitous cities & hinged on some special traits & group if new, that it may have a tradition, a sociology with special relationships & functions & with identifying attitudes and a congeries of design characteristics with a situative geography & a final microclimate (etc; possibly with characteristic ethnoses), as well as a human complexity which is inherently differentiative, eg magnifying & selecting new traits with consciousness of interurban aspects, and a range of major & minor traits which combine into gestalten according to semi-random procedures, with everything ~~licing~~ lying on ranges of quality & excellence, so that an atmosphere can be initiated & reinforced by a pattern of fine parks with a peculiar zoo with [redacted] SEA cows with winding red paths & police with green uniforms & a cityhall that is unistoried & across from the park (etc) & subsequently foster a harmoniously elaborate or anomalously launched tradition, or perhaps 20¢ hotdogs are peddled from carts manned by italians (it may be impossible to unravel all or any of the symbolic fluxes & relations active, changing and macrodistinctive in nonuniform cities, however it seems obvious that vast numbers, varieties, processes & complexities have, in the end, a pungent & propelling life of their own; it's futile to forecast these, for me, save that they'll assert themselves essentially in future cities, despite homogeneities, if the past is any guide, & the more so the longerlasting is the city, otherwise a new race of men would have occurred; many such traits may have more to do, however, with the perishing past, as apparent above, & with conditions of poverty & maldistribution, psychic oddity & isolation, that the present is loosing); the interior of the building, per se, may be the most important dimension of change & life, surprisingly of the city, with Peltier thermoelectric semiconductor walls for perfect temperature

& intussusception vs opportune for population

differentially in the house & decentralized mini-refrigerator-oven hybrids, various physiological comforters using subtle or esoteric effects, lavish comforts & conveniences as provisions, all-purpose robots and computers to run the menage & communicate with outside, form-adjusting & motorized or computerized chairs, a supersensory & supersensible environment programed by an anthropologic computer determined to please or induce some mood for the master, superthick multicolored rugs, steric contouring in remarkable designs, such minor conveniences as floors that become beds & chairs & mini-escalators, walls that move about or transform to instruction, an interior that assumes any sensory form per instruction and radiates light & warmth or more complex & artistic effects, walls that are video screens, an interior that may be static or dynamic on a continuum so as to be 'musical', illusive walls of films, mists, light & exquisite lattices or materials, an infinite variety of types of furniture, abundant functional & pleasurable devices, an atmosphere precisely & continuously regulated to simulate an infinity of climates & molecular states (complex & changing aromas linked to other ontic programs through the building, possibly set for cycles lasting months, years or lifetimes, or seconds, & reacting to the various inhabitants in a quasi telepathic way, all being managed with an uncanny intelligence), food preparers that act instantaneously for infinite —eg intasive— forms, a hypercomplex lavatory & shower, special rooms or equipments for lounging, hobbies, workout, work, recreation, nursing, celebrating, intercourse, sleep & rest, communication, studying, living, medicine, travel, simulated touring (mini- 360°— slidewalk -filter in a super-realist communicator for body-like interaction with real or synthetic 'elseplaces', such as holographic dioramas, employing the aforementioned multisensory complexity & 'mesmeric' computer companion), vari-

'esthetic'

able transmission glass, haptic & trans nervous system effects telergically & with a computer or computers that know the system so well that they can 'play it like a musical instrument', an enormous or infinite range of perhaps ever-changing textures & textures-into-depths & architectural structures & depth textures, possible with nude people which wear a cyborgal suit which myoelectrically or cerebrally responds to intended motions (some nonanthropomorphic & automatic) & enhances or facilitates them so as to carry the occupant about & give him a supermannish feeling & agility eg enabling nuance & 'tachycalisthenically' as well as 'absurd' acts, but falling short of excision, decapitation or automation of the brain--arbitrarily & partially, for the consequences would be holistic,, built-in furniture, single-piece rooms & buildings, flexible pipes, miniaturized & multipurpose appliances (eg garbage disposal-oven-washer-etc), these many features generalized & adapted throughout all building interiors; roof highways, slidewalks (possibly slidehighways, interconnecting levels); or the city's traffic computerized, pedestrians segregated from vehicles; strange service stores (technologic storefronts, automated & informational instant shopping); & one expects relevant changes of great effect in the schools, police department, libraries & other institutions; there may be artificial sunlight equaling or surpassing the astronomic sun, with in door or out door climate control; if giant domes are erected over cities their undersurfaces may serve as screens or stations for sensory performances corresponding to esthetic weather or aurorae, hyper-realistically.

Now for some interlude comments, thoroughly inconsistent with the foregoing, but consistent with PGunkel. One of the problems throughout this book has been the attempt to decide what is the city, ie that it

is not a myth. One could run through the eopolis, village, town, city, metropolis, conurbation, megalopolis, urban region, urbanized continent, ecumenopolis scale & think that the shift of each frame involves a semantic difference such as to preclude the synonymy, to be clever, "Town's a big village", or that any 2 points on the size continuum are sub linearly related; we may take a unitary view and say that it permits types of social organization; this organization may i) take time to develop & occur, ii) tend not or never to maximize, iii) maximize less in the larger units, nonrelatively; but one could regard the city, in sensu lato, as less the integral & fragmental nonsocial aspects, more the social, perhaps basically the social--one could then commit oneself to enlarging on the social possibilities of large groups of people, perhaps in response to a geographic & technologic setting, & to a, more difficult, study of their opportunistic histories (in fact, I think the dynamic side of sociology has been grossly neglected, the side which deals with alternative societies in time series; the problem of the forecasting then, eg, can be stated as evaluating the mystery of these historic futures, & 2 viewpoints are possible--social statics v dynamics, all the while remembering that the future is imbalanced respecting the past by the types of men who may evolve, who must be seen holistically; another reason for this dichotomy is that value is perhaps essentially ambiguous & indeterminate, & we really have never had either an experimental sociology or history). An alternative to complex sociology, be it recalled, is a forced simplism. Bis, CIF's not about future men or societies, so here we escape back to

An 'Ideal' City

I'm not sure it's ever been proved that cultural & racial assimilation, miscegenation & homogenization is a good thing, even heterotically, but

+ no criminals, deviates, psychopaths, inefficients, the abnormals or subnormals—

we'll now bite our lips & imagine the gleichschaltung mongrelized, one-of-a-kind, (5 organisms,) more-or-less-identical, monolinqual, permanent, intersubstitutable (decerebrate?), unified, consonant, congruent, truely socialized & confused universal Man archetypally peopling our cities' world (we could, of course, ultimate this quest by presupposing a factory template corresponding to a world standard for eliminating childhood, immortality, tabulae rasae, periodic regularization, robotic theory, symmetrical homogenization of everything in the world, communization, fixed memories, orthologic brains*; the author admits to having contemplated the exosomatic & other virtues of this sort of normalization, particularly insofar mankind can be regarded thermodynamically, eg hedonistically, laboripusly, atelically, or macroscopically, eg mathematically, symbolically, pathologically); this, rather, would be monoideistic--types & groups of polyideistic cities are also possible; the monoideistic city, so-called, can also, of course, be polyphonic, as it is in the level of variety often unrecognized but characteristic of human peoples, today. In any event, we now imagine cities without the arbitrarily condemned distresses of people in cities today & in time immemorial, we discount racial, some political (the psychic side), social & mental conflict, crimes, inefficiencies, misorganizations (conscious & unconscious, absolute & relative), deprivative & finite allocations, unwanted or unvaluable degenerations, social infelicities; since our object isn't the 'fantastic' or 'ultimate' city we're content with feasible optima, perfectively; we allow pathologies to occur where unavoidable structurally in time, but reduced to neutralities, undertones or positive pastels (perhaps organismically); we envisage a 'machine' city, to the extent our model is simultaneous, stricken of subtractive sums & inappropiatenesses, & what a conscious superintelligent entity would be like if

it had the ability to have reconstituted itself infinitely in all its parts perfectly & to have understood itself therein; the experimental discovery of pollution, sideffects & signifigant disecomomies at infinity (all manners of pollution, eg sonic, social, instinctual, insidious, unconscious, genetic, biochemic, other stress eg vis a vis time, semantic, communicative, even telepathic-like! bis, insofar just 'ideal'); the city becomes 'ontologic' ie a number of fields of possibility somewhat unrelated to anything but their mutual existence, where the city is only the fact of their jointness, & the operations of facilitation (eg communication, transport, health, living, education, politics, science) are wholly (paradoxically, within practicality) reliable, efficient, safe, complementary, exploited, 'costless' (economy defined within whole, ≠ nature, whole taken optimally), integrated with one another, instantaneous, automatic, excellent & adjustive; use the 'modern' transport supra, tho take it to extremes of overwork & economy, perfect various of its traits, see that all repetition & boredom is ousted, extend it across the globe & out into space, minimize its expense, make it include any point in all milieux & transcend all weather & accidents; cf Architectural Tomorrows [redacted]' 30 list, this might also be a silicon or vitreous quintillion-sextillion ton transterrestrial architecture with quadrillions of people or zillions* of devices (devices, eg mechanic or electronic, may eventually have to function with semiconductor materials, perhaps specially treated or maintained; on the other hand, ordinary matter may be transmuted into structurally or constituently new atomic or social matter, so that we may disregard the inventory of elements & its secular implications & necessities), since this is consonant with present directions & capabilities (neither ultimate nor fantastic); at every place every inhabitant would be able to experience

* (Earth ● ≃ 10^{52} atoms, but devices may be panmoral, if micromicrominiature; recombinative + perspectival multiplication)

'Fiddle-dee-dee'

any scene, record or consciousness, c paused (causally) & perhaps processed; in any case, the world would contain an infinite amount of eternally increasing varieties of varieties (anthropomorphically, measuring out a certain proportion of space, energies & matter per man, staggering & entwining the real element; I've pointed out that a tree —eg pseudo baobab— or boulder could be a disguised house, —eg glassed— stream (with artificial evaporation of the water) a water main, ground a roof, outdoors an indoors imbedded with telecommunicators & computers or other things, dendral antennae, decorative plants qua nutritive, ersatz animals given (—eg exhibition robots) in a 'completely creative landscape' &/or a symbologic environment or environment as communicative interneural or informational interface; the control & intelligence of individuals would be severely extensively & intensively extended into the environment of conditions, eg in complex banks of sensorimotor apparatuses & appurtenances & practicalities (for a totally responsive environment); the oceans & other milieux of the earth would be occupied with perfect houses, the thematic variations suggested on pp 72f would be realizable in their historical totality; synonymity of exterior & interior; a largest possible populace; the whole globe might be covered with an equidistant balance of nature, spectacle, publicity & privacy (& industry); all the elements or the unity of the city might be able to move freely anywhere; the city might be effectually invulnerable to military attack or natural events (eg enclosed in a force-field or omnipotent defense, structured & constituted architecturally for infrangibility); we'll include here only relatively superficial changes, eugenically, in the anthropomorphic modulous (but many new aesthetic, health, psychic, social, philosophic, architectural & alimentary changes would be possible); a brief n on kinetic architecture (this could include mere effects of movement & change, manipulation of the environment to produce relational change, similar regulation of the people, installation of

devices & surfaces that actually change--rotate, swiggle, dash & dodge, vibrate, bounce, flex, disintegrate & reintegrate, follow straight or involved axis, field, flow, circle, move at random, move at a maximal range of rates, contract & expand & deflate, coordinate, evagmate, dance, flit about, perform in midair, flutter, transform & texture, topologize, etc--, a similar environment, buildings & cities (eg wiggle) & countrysides that mold & remold themselves uncannily, use of special materials--bubbles, gases, liquids, other items--to create eg fountainous, pyrotechnic & nubilous effects; telescopy, microscopy & distal variation; deliquescent buildings, buildings that grow & act in the above manner, eg antically or frolicsomely or illusionarily, perhaps in an accomplished art of motion expressing peculiar architectural ideas; buildings that float about in lakes, move about on tracks or axes, float down rivers to be dismantled, move upon one another's surfaces); maximally involved or exciting societies, effects of fantasy without fantasy; cf the 'modern' city for interiorities, extend these economic possibilities to nth degrees & varieties; the 'ideal' city would be, sofar as possible, a society wholly aware & interactive with itself, & much more essentially than now; the city never decays, as reasonable, so that nothing within it is broken, worn, dirty, defaced, suboptimal or submaximal, inexact, scarcely septic, forbidden, dangerous, unwantedly random, mistimed or able to become any of these things minutely; furthermore, in terms of these & others, the order of the city, itself, is amazing; there are many or a plenum of multi-purpose & omni-purpose tools & devices, formed as desirable within human metaphor, operating in such mysterious ways as without contact or side-effects for more-or-less instant perfect acts (transcending the lasers) using strange forces & routes; the beings of the city behave with an excellence related to the above comma (living methuselahly or with eternal youth, bodies not only perfectly healthy, but infinitely more

vigorous, enhanced, aware & capable; nondepletive orgasm might be non-physically inducible, the unconscious intricately extended, orgasm a continuous state of joy & presence, a new endochrinology & biochemophysiologic condition for enabling extraordinary mental & physical states & performances normally; their bodies would be filled & reorganized, or replaced, with super varied & numerous artificial tissues, organs & resources, conceivably homo sapiens would be transmuted into finer & various alternative organisms through stirpiculture, genetic or medical engineering, possibly with ectogenesis, artificial genes, embryos & adults sans genes, with instincts & biologic capabilities controlled & transfigured, eg artificial instincts & behavior & ergasia, or filled & reorganized with purposive fields & rays, or homo simply replaced by predominant cyborgs or complete robots or other non-anthropomorphic creatures or landscapes--none of this last seems improbable, as to feasibility, however trivially tough it make the description of complementary 'ideal' cities; the beings would be more nearly perfectly understood & self-understood (presumably autonomously?), determined & psycho-socio-eschatologically coordinated, according to the symmetries of probability; there would be a psychogenic-eugenic-euthenic continuum of ontic transformations, plus some quantal-cosmic isomorphy); weather & climate, atmospherics, controlled ab lib, to moral degrees; superabundant, supercheap & virtually inexhaustible energy, & circulation of all the inventory of elements & chemicals of the Earth & solar planets (to give effectual infinity of primary resources, in ratio to possible space & compressions & rates of access; again, we imagine an ideally big but qualitative population with world); perfect holistic co-ordination of all the considerations of the city, eg metric symmetries in the image of the city respecting popular processes; enormously longlived people might have a much different view of one or all cities; the natural

environs, within & 'without' the city, could be constituted of transmuted & novel flora, fauna & geologies (ad infinitum, in transmuted ecologies, demes, etc) or artificial same (motile, behavioral machines, eg), or ditto respecting meteorology; the time sense, since controllable in so many ways, of the inhabitants would be very different than our own, eg hibernative saltation might fragment & overreach history, accelerated subjectivity might alter the aspects & rhythm of externalities, sleep might be diminished or abolished, span of consciousness or intensity of memory might be increased, plus the prediction of intelligence; inhabitants might be possessed of further psychic states such as to change the complexion of experience & appearance, & the human necessities of design (relaxation, alertness, mood, emotive, personality, perceptional, fantastic, fatigue, time, attention span, memory enhancement, perceptual accentuation, noetic, strength, synaesthetic, bizarre--ie re modification of mind--, hedonic--happiness, gratification, fulfilment, fulguration--, resource, poietic, oneiric, attention, therapeutic, 'apocalyptic', ego metastasis & ego transcendence, 'idiot savant', ataraxy, instinctive & 'strange power', 'integrative' & 'mind-substracting', disintegrative, antitheses eg amnesial & anaesthesial, attitudinal & other effects); there'd be maximal availible intelligence, & some matters would be perfectly definable, of course there'd be an infinite # of channels; no unfortunate places such as prisons, physical or mental hospitals, battlefields, slums, sewers, q-barely hazardous territories; men would be able to shape & interact with the environment intensively & extensively so as to maximize the quality thereof; places 'down the street', such as <u>stores</u>, would be ideally mixed, complete, intense & arrayed, [redacted] architectured with respect to the architecture of mind, each displaying the ingenuity possible if the greatest & luckiest genius of mankind were

concentrated locally with unlimited resources, so it would mean nothing to throw a lake with some canals in the loop & maintain an arboretum & hippodrome there; & all the cities of the world would be exquisitely geometried with respect to one another & all technologies (played out to infinity); psychic perfumes might be released at specific points around the city, & bands of musicians, alias robots, hired to go thru the streets, or beautiful robots similarly actuated (, eg anthropomorphically

A ''Fantastic' City

When one reaches this point he must be very careful that the value of the city not be damaged, in the profoundest sense, overlooked, or it's necessary that either one be prepared for considerable experimentation, looseness or a concomitant advancement towards perfection of science; eg if we collapse time consumption in travel to zero, practically, we've simultaneously eliminated the balanced & enjoyable experiences of men of today & yesterday, perhaps at excessive cost. One could as well eliminate all the complex, real sources of pleasure, such as nightclubs & touring, by a direct stimulation of pleasure in the brain, automate all work & rely on direct input to the brain for instant learning--but at what cost or impact? Humanists decry this tendency of technology to usurp human activities & leave life more barren than at the start, & they're right when they contend that some aspects, at least*, of our civilization do not justify this sacrifise & that, moreover, development of this technology & social change could observe certain complexities, abhorrent to commercial & other technologists or technocrats, for a deepening of types of meaning, in the human perspective, eg arrangements of the farmer in the field, made in a nonprocrustean way. I marvel that we haven't tried more industriously or sensitively to implement such

*(appearance being very deceptive)

+ televisory possibilities

programs or reach towards the essential science of interpretation for man's security. Fantastic sensationalism must, therefore, the moreso as the more, be conservatively watched over, & treated as a qualified & uncertain addition to tomorrows, granted that some great simplifications seem probable, as alluded to in CIF, there remains the danger that they be mishandled & abused. I will arbitrarily reserve certain topics for the last class of city, the "ultimate," as I want mainly at this point to discuss what seems impossible or very unlikely (eg diachronically), or eccentric respecting certain purposes. I feature the city which is so infinitely complex & splendid that its beings could never in a lifetime, in eternity for that matter, experience all that it has SUR vigorously to offer, novel & variant, or come to grasp all its purposes, social order & dimensions. This city may be physically n-dimensional, in the sense that it's just a compresence of simultaneous & abstract ideas of movement & experience, the city motif--impossible, seemingly, within our universe. There may be, by definition, "amazing" new technologies or miraculous events in evidence throughout the city & its lifetime, an "amazing" # of people of such character & preoccupation raveled in irrationally great & unique social states & world pictures, schedules of their own lives (new annex 1a) (it's this obligatory fact that gives dimension, gives perhaps a specious reality). If atmosphere is bothersome, it could be evacuated & a type of organism that doesn't need air, such as a robot, substituted populationally; per contra, if desirable, the egologic reality could be extended in its aspects & the atmosphere made, within its dispersion, vastly more valuable & appropriate (eg so thick that animals float & climb in it, a man may scale 10' or draw pictures upon it with his finger). Rivers could be made to blend with the sky, in nubilous cataracts as prismatic

kaleidoscopes. I make these entries as representative of visual fantasies in which the structure of appearance is limitlessly variable, and, of course, I could increase their number & variety until we could speak of the 'infinite city' from an experience of its incongruity, but I wish to discuss, in this section, another species of the fantastic, eg defiance of gravity. Our cities & sensibilities are geotropically orthogonal & horizonally planar, but this is overcome if gravity is reversible, eliminable, & plastic in all ways, so that we could eliminate half the floors of buildings by standing people on both ceiling & floor, eliminate stairs, grades & elevators by continually upright corridors (the bodies could be made to observe specific positions, individually, or fields could be rotated & sculptured), 'drop' people from destination to destination without visible conveyance or unnecessary contrivance, float cities or parts of the earth ad lib ad infinitum, create a true steric aorism (the universe is directionless, if dimensional), objects could be floated about the house & stored on walls or ceilings, people floated about & in bed, etc. This is also the city in which people completely enjoy all things but inexplicably, in which they move about like robotic ants, or puppets, obedient to our impressions of behavior, or isomorphically realize some idiosyncratic summary of futurity or utopia. How about pushing images, of the city, to their infinite, so that we substitute [redacted] awe for a 3500' hexahedron, an architectured planet, solidly, or a galactic 'empire' with so many xillions of peoples that they're countless, though somehow integrated in an ultimate society of individualized & social organismic purposes--with all the implicit obligations & apocalypses, all the hecceities & amour propres, all the intrigues & activities, all the planetary atoms of the crystal of power, all the specimens of unending & bacterial history, all the precious & circumstantial

'luministic possibilities'

'Semantic (wanderings)'

decisions, all the beginnings & the endings, all the subtleties of the cities, all the consciousness of cosmic certainty & uncertainty, all the thermodynamism which rises to the surface of the ideal? Some people actually enjoy noticing & following instructions in an intricate environment, so these utopians imagine a mechanical city in which traveling over various slideways & thru concourses between levels, according to various signs, maps & guidances, is ~~in~~ an exciting end in itself, & the 'greater' the city in these terms the more satisfied they would be; in short, they'd like to be robots; I confess that this school of thought & sensation has attracted me, both the signs & becoming, within some terms, a robot; the fact that this was when I was younger may mean that it is right & that which will be; it should be remembered that the stresses of future worlds will render natural social transformations which hitherto have been scarce, thin & erroneously complicated; there is, of course, such a thing as being falsely hypnotized. But these people imagine people as living simple lifetimes in which such self-mastery is possible that each unitary lifetime & identity can be moral & good, & in which certain philosophical dilemmas have become irrelevant, or transmuted into some higher & remoter form, perhaps on the periphery of the total social organism; it should be noted that this idyll is quite concordant with religious presuppositions, & is ruffled only by the paradoxes of a few essentialists such as me; it may well be that perfect mortmain & mechanical simplicity, for humanity, is incontestably sufficient for the future, though it may also be that the trek is not half so static & brief. In terms of the collapse of difficulties & meanings, we see that the recent inability of SF to produce new technical ideas & to merge into fantasy & social scenarios & utopias symbolizes that by abridging formerly drawn-out & demanding realities, so as

* though I can see why the idea of this action categorically appeals to some people, or us all at sometime.

to generalize the life of ludicrous kings & other nullifidians, we have brought attention closer to the essences behind acts, both the utilitarian & the symbolic motives, the passive & active motives; one might hesitate about others, but were I faced with the prospect of selfish conversion into one of the synthetic characters displayed on television, I would as soon exist not at all, for I would see little or no reason for creating such an existence,* though I can see that such an existence, once created, might necessarily defend its own existence, making mockery of the situation, nor do I think my view murderous or uncertain but, [redacted] contrarily, unusually honest & trenchant, so you may judge from this that I'm contradictory in arguing that many millions of people today are futilities or semi-futilities, that many cities serve no purpose beside wrecking the countryside,* while also that increasing population is deserved, & enables future cities such as these. But the collapse goes on, making societies unstable, & challenging all individuals to give reason for their own motive; sure we could have city societies in which all the inhabitants were stripped of today's vulgarities, superficialities, inconsistencies, vices & trivialities, in short, beautiful & virtuous & good, + powerful but I think the matter can't rest here, & that the inexplicable arrow of development & reduction pointing to infinity points through all human conceptualities except occult nisus; however, insofar agreement isn't reached on the nature of psychology or self-transcendence, stable cities such as these of this book are an alternative, less it be argued people are unnecessary in numbers or at all. Much of the 'charm' & curiosity of fairytales stems from the sensible signifigances & realities of rearrangements of the material of experience, eg if one were a man theriomorphized as a snake one would know plethoric reality most abnormally, & the neighborhood would be

♀ ('super-exhibitionistic')

quite different; well, one can conclude that many such tales deal with the implicit probabilities & unconscious intricacies of suchlike transformations, furnishing, in the composite, assumptions about reality. But, further, with most of us the desirability & justifiableness of our human, peculiar existence is not questioned, strategically, but we adjust things to our satisfaction & accept our economies; as it happens we have an ideal of civilization which is bourgeosis, and surpasses Indian asceticism, with its fantastic religions; is this 'idiocy' the be-all & end-all of existence, the bathos in CIF's center? It's customary to refuse to believe this stark deflation; but I'm fairer, I refuse to submit to it, as transcultural, & admit that god, its stand-in, may be subtle but not malicious, that I have often believed with a certainty that all the denumerable complexity of the universe is indistinquishable from a simplicity, that the future may be bizarre but it is not unkind & insoluble; I suspend my own right to withdraw & commit myself, in every energy, to elevate the world, its beings & reality; I, for all I care, do not exist, only the rivers of possibility that flow by my side care & exist, this commitment is communicable to you, perhap one should love one's quiddity. I don't know that ordinal causality must be violated by i) exceeding c, ii) traveling 'instantly', iii) even faster; I envision a state of existence in which the universe may be transited in these terms, which would restructure the city, needless to say, if just temporarily. We imagine a city which could be constructed instantly or in a day, moved about like a stone & raised as quickly. The archetype of the fantastic city is the very active fantasy, a permutation of the story which we were collapsing above.

The 'Ultimate' City

Without more ado, & while things remain to do, we pass into the residuum & mystery presumably crowning CIF. We run out all kinds of devices, technics & discoveries for degree-supplying, executing, suggesting, fulfilling, epitomizing activities, wants & needs, purposes, pleasures. We imagine interpenetrative objects of human complexity, worlds that physically or mentally spatially & logically coexist; intentional omni variegation of differential games & experiences supplied with correspondent subjectivities & condensed in time or let to grow independently; future total reorganization of instrumental framework for redundancies & choice negations; isolation of absolute pure qualities such as impartible structural connection & the secret of its quantification; infinite detail facsimiles & hylic telemetry & informational recasting & positive teleportation; hylic space variation; time variation; total discovery of universe as to symmetry only; metabiologic & metachemical engineering; nonhylomorphic form, such as pieces of furniture, articles of comfort, tools, buildings, planets, lanquages, self-integrated componentries, directions, clothing, fitting, pipes, roads, soil, scenery, substitute animals, people, supposititious brains, whole events deductively arranged, pencils & cars, which is characterized by total reorganization & progressive nonexistence without disturbance of the continuum, & the calculated absence of such traits as heaviness, inertia, complex materiality, & nontuneability, density, position* (this illusionist culture is always the surrogate of an organic simplicity). According to ephemeralization, we progressively speed up the rate of eliminating tasks & irrelevances; according to acceleration, we speed up the rate of living, consciousness & all realization; according to abstraction, we logically simplify reality progressively; according to

*Minimization of property-

* quantum theory suggests a barrier, though this may be (as suggested by current [redacted] collapse astrophysics) partly irrelevant.

miniaturization, we diminish the size of reality particularly & generally; according to etherialization, we progressively diminish the involved matter, energy, obviousness & difficulty of reality; according to eternization, we progressively insure that activities are aorist & extemporal, & adjusting to the largest probabilist horizons of the universe; according to infinitization, we progressively prolong, intensify, enlarge & comprehend suitable activities of reality, including its ontology. The ultimate city could be coextensive with the universe, or a simple city at the end of a series, or the completion & perfection of what is scientifically possible in nature, or a satisfactory standard, or the gap into which our exhausted imaginations stare blindly, or the climax of the triumph of entropy. The beings & landscapes could be progressively shrunk until men are as insects, bacteria, molecues or far less, * & the super- & infrastructure is richly organized, micropolitanly. One can imagine axenic cities in which men or beings are maximally isolated from themselves & their environments, as in EM-Forster's The Machine Stops, in which human intercommunication is maximized or minimized, but cities where the inhabitants are imprisoned in tiny or finite closed cells, stationary, purveyed to, perhaps decollated, deprived of normal sense organs &, in short, where the external & internal environments together are disregarded--with obvious spatial economies--, or where the density is very high along with the isolation. There are also the viable extremes of minimal & maximal densities, the former suggesting manorial planets or remote regions of the cosmos, but the latter various technologies of mind, body, environment, maintenance & illusion, eg topology, perfect insulation, preoccupation, training, accustomation, object miniaturization, holography, air-conditioning, machine synoecy & convenience, where one might speak of persons/sq [redacted] or cu rod or, conceivably, less or yard (surgically & 'uterally'); a medial

eg cerebrally, nonverbal

unit arrived at might be an 'ideal' balance of considerations resting on a very exact science of measurement or control. All aspects of the city previously discussed are to be considered pushed to their extremes of identifiability. All the matter of the solar system, galaxy or supranebular universe could be collected & constructed as 3 etherial, maximal cities. One keeps asking: yes, yes, but what would be nonrepetitious in this city, escaping from all the possibilities of art, inventions, societies, architectures, etc? Well, that's quite a dissection, inasmuch as it now must be obvious that these categories' aggregation is what the idea of the future city has been all about, beyond certain collapses of difficulty already discussed (as also their transcendental modes). Take inventions: the patent rate has fluctuated thru time considerably, the definition of an invention, its importance, doubtless is variable, inventions proceed from events at other levels (eg scientific, technologic resources, elementary technology, functional technologic systems, applications, environments, social systems, society--EJantsch), most inventions & patents are pretty trivial, systematic & unimportant, many such patents & technologic changes are adaptations & adjustments, perhaps of microscopic order, either in response to an infinity of situations, cross-invention or conversion to some new basis: this seismologic process might be expected, for social, situational & physical reasons--to continue in future cities, even the ultimate city, so-called, or one could expect its curtailment or subsidence, even its extinction. In any case, I refuse to presentimentalize, where gestalts aren't predictable they're organically incomprehensible, unpredictable & trivial. Mystic rejection of changing nature spans many real forms, from belief that there're external archetypes, balances & the inobvious, to contentions of enchorial predesti-

nation or propriety to pseudo-, semi- & protoscientific motives. PTd-Chardin's noosphere is perhaps a conception of religious or telepathic spirituality, as a form of union of the city of man (though one can suppose physical bases for both these emergences), but one can suppose that in the future there'll almost surely appear a noopolis &/or psychotopia; the former distinquished by transcendence of man, mechanism or its not being the mere effects of the latter. A psychotopia could be what a city of psychedelics would be like, expanded & transformed from familiar &, perhaps [redacted], discussable criteria; or the results of radical education such as elsewhere regarded; or of machine synoecy; or of total communication, perhaps cum symbologic transformations; or a candid view of a world behaviorally & sensationally very different from our own, without interventions necessarily, in that a psychosocial order would be recognizable as a coding of reality throughout; or a world wherein reality is redefined, or motivations so different as eupsychically or euchronically (AMaslow). A noopolis might be a further stage or degree of this, or the beginning of a restructuring & internalization of reality; it might have the oneiric quality that landscapes, in all their complexity, are projections of one's own or others' present or past minds (eg an organic, field accumulation) in conscious or creative modes, or modes facilitating the ideals of the city (one could even experience this reality by various types of presence as complex & empirical, or moreso than, our reality in nature--walking about thru doors & lounging on furniture--; this could be a world for KLynch images & PKlee totality at infinity; ability to experience as reality others' mentality, necessity to use whole mind for full associative reality, means multidimensional nootopia; there will obviously have to be a city, Einsteintopia, for ST reality--equivalency at largest & smallest

parts of universe); this might be a city in which maintenance is secure & maximal, & precise logic dominates with nothing being done unnecessarily, hence its atmosphere, shape & reality; or a nonhuman, mechanical city (of what have been called, by JTSchwartz, crystallozoa, as opposed to protozoa--us) of apparently pure intelligences, or deontologic entities intent on esoteric matters & concerns (an electropolis can blend here, from a la McLuhan; though the physics might be extra-electronic); such a city would presumably be maximally compressed as an atomopolis, but its description exceeds my powers, if not my appreciation (the important thing is to recognize a supernonanthropomorphic city, whether in pursuit of human or nonhuman considerations; one can suggest such things as that, a/la IJGood, radio transmitters would be imbedded in its matrix periodically, a/la PGunkel, the spectrum of media would be employed & faster-than-light modes would be exceedingly valuable, various types of hierarchies would be active & the purposes might be inscrutable, eternal & infinitely challenging, perhaps with some finite, multivariant & existential lanquage giving rise to rigorous structures of a lithic, hyperbaric, astral, monist ultra-tachyopolis). Today's city is the precursor of the 'ultimate' city, through the line of descent may be nearly or virtually infinite & in brachiation. It can be argued that the ultimate cities are really of artistic taxonomy, that this sequence of 4 cities ought be described by multitudes of tableaux of alternative constitutions, creating a sense of space, reality & development missing in this truncated, abstract scheme of CIF. Touche!

* What we perhaps need is an hypocrisy, conservatism, tradition, so established in our society wholly without highness & stalemess, finer feeling, ~~[illegible]~~ great aspiration, etc will be habitually & totally inhibited ~~[illegible]~~ by a society on itself, a regular 'looking down the noses' at ourselves, to maintain a [illegible] society, or at least insure a background for real geniuses to exist, flourish, & succeed.

A ~~[illegible]~~ clutch of ideas. Phonographic record will go 'over the phone' ie will either not be purchased as objects but as recordable transmissions or telecommunicatively chosen transmissions from an 'infinite' remote library, perhaps at a price, though it seems likelier that some nations will have the commonsense to supply this service governmentally gratis (though could be analogously "pay tv" corporate), or where the reception will be recorded not on innumerable bulky discs, tapes, etc, but on a relatively compact, more-or-less infinite memory, perhaps with all old & new 'events' being simultaneously dispatched to all home units for local complete possession; this sonic library will, of course, be organized by a tiny computer; but, ala A Scriabin, these aural records may have extra-aural 'sides', eg color effects, eg a record or memory of night sounds in the Amazon jungle might be accompanied by various color & light accurate or vivid effects, or an ethnographic folksinger shown literally, & one can imagine various synaesthetic abstract & associative nonabstract effects, as well as sound as natural supplement to football games (ps, it might be argued, anthropologically, that we should conserve all the recognizable & pure folk aspects, musics & ways before they're altogether lost, that this unconcerned loss today is a futural tragedy); I now postulate a 'holographic' phonography to supply punctual or total stereophony*, & I postulate it as a method of providing superior recording; as for maximizing the sonic communication, let's say the ear's capable of consciously distinquishing 340 000 sounds (pitches & intensities; timbers kick in an unmeasured, perhaps definably infinite, or unconsciously larger, but in any case atomic, dimension of range; the unconscious kicks in, perhaps, many more pitches & intensities; bypass the faulty

*, despite the structure of hearing

ear apparatus & regard the nerve or brain & perhaps the sharpness & range is multiplied), then we can regard perfect codal fidelity with this finite repertoire as the aim of communications of sound, cum a super Montessorian training of the users, par necessity; I'll rejoin the value of this below. As for informational & vocal, or even musical, communication, one can to some degree economize by substituting a code for recognizable or indistinquishably interchangeable sounds, eg one could be built up spontaneously by bipolar memories precedentially or part-precedentially or one could substitute a simplistic, inaccurate or universalized (or part-universalized)--or factor analytic, eg emotive tonal--exchange, eg colloquially eg typographically or 'abstractly'; refer backwards to p51 for the reduction (it can be argued that McLuhanized or abstractive communication is nonconsciously bad to its degree, & various modes postulated for its proper formal intensities, whereas McLuhan's not indefensible esp for certain systems). Now communications has a jamming interference & cost/load problem, hence no videophones yet; this is easily surmountable as science smashes various barriers as seems probable (in addition to our "4 cities" we could have a 5th, as an extension of the technologic "modern" have the 'scientific city' in the sense that this would refer to what's implicit in the development of science but falling short of the "ultimate"), eg I envelope-curved the laser & found that in '70 we should have an UV, now it's appearing (late 69), & by using lasers or radical lasers one can include the electromagnetic spectrum's entirety & thus just by light to xray lasers the information content can be concentratedly expanded (over what's now sofar but little exploited) 10^{6-12} X, but note the laser's beam is colline-

'Osmagogue (al;'

ar[illegible] & potentially microscopic & microscopically combinable (though thus nonomnidirective) so that we must use quantumic spread, path generalization, source cross-section, source numbers & functional spacing to give the equation of the possible simultaneity of transmissions (which is interesting, since it suggests a normal spacing, say literally in space of a possible civilization, of communicators), but that the magnitude of information is, in our terms, inexhaustible (the x-ray 'laser' might presumably be a basically novel device; the known spectrum gives 10^{14} of the former number, thus cosmic rays involve a fermi distance, but such frequencies <u>of particles</u> demand super energies or remarkably 'small' transducers, materially, we may maximize frequential information by transducer technology, <u>n</u>, or by such a device as quantized space-time; but some energies of information may coexist noninterferentially, in their proper spectrum, & we may hypothesize either apposite broadness or a new continuum of physical reality, etc, but my point's made), thus we can imagine a city with a stupendous flux of super high, reality-like, quality communications, being absolutely or relatively inexpensive hence normally transactive. Of the towering buildings of today there's conflict between a thinness by which 'every room is windowed' & an enclosure (which is proportional) permitting width or pervasiveness, & we might argue that a mile high future skyscraper <u>ought</u> have countryside picture windows (to see the ground thru fog & smog), <u>in that</u> the experience is inspirational (& where there's a way there's an ought); but isn't inspiration analytically equivalent to stimuli, morally definable, such that virtual 2' X 3 photographs of galaxies & nebulae as murals, exquisite diagrams of the solar system, micro-detailous cross-wall photos of forest scenes, home

planetaria (or uran[illegible]aria; this might give cloud formations, sunsets, constellations, life, effects--eg with depth--, & the solar rotation--which might be polarized to celestially fix the sun --, & who's to say that nonterrestrial 'skies' mightn't be fine or better?) &, a fortiori, an information or computer access of 'greatness' (great play) mightn't [illegible] similarly or virtually equal & replace the tower window, such that perspective (crawl) would've been simulated & the 'outside [illegible] come inside'? Any dummy can observe & unhesitatingly criticize our high-rise & concentrated dwellings of today, but wouldn't you philosophers agree that some instinctual preference is overridden by a virtual isomorphy, a true synthesis of sciences? More anon. We might 'solve' air pollution by cool, neutral or normal systemic pipes (replacing chimneys & open vents) which might peripheralize for [illegible] enclosed cities or converge to a central treatment plant for compression (eg breeze subterrene), application or purification (& release) economically, & even transportation at could be ducted in tubal pathways. Trouble with garden & Le Corbusier cities is that, to a degree, there's inconvenience & crowding, vis a vis outdoors, & the experiences are unnatural (ie inharmonious), the people dispersed & typically the outdoors-green-lawn scabbed; solution: storied nature & outdoors skyscrapers, we can easily imagine landscapers putting vegetation, ponds, dirt, trees & even animals in large or vast central (but eg amorphic) multistory [illegible] halls, possibly crude or sophisticated [illegible] (uranasia); further, this negates the need of circumambient interstices for circumforaneous citizens, so we, appropriately enough, visualize extensible unistructures (even megastructures in which apartments & houses could be built & rearranged); further, the elevators & carriers could be linked, & distances, usually enough, collapsed in ultra-fast

modes; further, the corridors could be built of material seemingly impossible with outdoors exposure, so luxurious & very human, & we could substitute sensory displays & illusions for the normal architecture of the surrounds, creating levels & types of consciousness, & who's to say that a holographic tree isn't as laterally convincing as the material thing? further, I think we could go out & construct an artificial nature, to be 'swung on & admired', equalling & surpassing genetic & geologic nature, that importing nature would be the same, so in sum we may begin thinking of totally & extremely disregarding & transcending nature in complex artificial environments, which may be hybrids, with 'things' inanimate & animate that represent a healthy & challenging interioristic city (& that a continuum may be produced between rooms & throughout lives, in the sense of 'merging with' a 'background nature'); note carefully the economics (it's said that concentrated living costs more, paradoxically, re population; but note the external diseconomies relating to maintenance, habits, poor materials, absence of such overseers as computers, faulty planning, politics, etc; only a machine could be more efficient than the human body; with automation of through-tertiary & quaternary jobs much of what presently is "uneconomic" about cities would be precluded, eg sociology, physics, political science--think of the university--, architecture, engineering, controlling nature, not to speak tertiarily, in the sense that it's, Parkinsonly & non, self-creating--ad infinitum--; this requires a study of decay & wear, eg adsorptive & absorptive, eg radiative, eg structural, electronic, nuclear, & chemical--& other traces & cumulations--, but such a study might reveal some surprisingly pleasing schedules, particularly if

x artificial hyperconsciousness & hypercarthosis.

essential, esp with the new predictive & observatory technology, & the understanding or science of systems--plus nondecadent technology--and it might be posed nonanthropomorphically & 'minimally'; a super bionics might be relevant here; you know, the science, which'll be complementarily epistemological, which'll permit prediction & realization of all the reproductive capabilities of minimal or maximal units, such as genes, will be a mathematics of application such that we might easily have one or a class of Seeds for the plantation of buildings or cities, amid or after growth, with or without much compromise, but in any event it's possible to postulate a calculus integrating both the 'biologic' & 'abiologic' objects, but still there's a conflict between the energies & times of 'natural' v 'super cpntrolled' productions; in fine, by proper, if demanding, design we may avoid the diseconomies of popular concentration & generate supernatural economies, without [redacted] subtranscendental qualities). Today you get better sound from your hifi if you dispense with the speakers & use cheaper earphones, which thereby isolates you from your roommates & the cats through the wall; fine, so we do this 'video-ocularly' & produce a headset or helmet which combines transcendental input to these two key senses (I ask you: can't it be that this more direct mode could, esp in combination with a computer & unusual artificial sensors, outdo unaided perception, thus enjoyment); man has 7 over-emphasized senses & probably many others & more interesting shapes & extents of systems & sensors, but doubtless these (with some esoteric moot exceptions) all are isolable at point of the foramen magnum in channels of nerves--so if we may interrupt & master nervic impulses, here, whether by field, insert, exposure or decapitation (as technics

* bewusstseinslage

are evolving), we may bypass & transcend the continuous & learned real interface of man to his sensoria so as to enable immobile telemetry or telaesthesia, & I'm sure the health & psychology of this complacency could be perfected (psychochemically, neurologically, by developmental experience, physiochemically; we may assume that a man bodily needs some modicum of exercise, so we could arrange an apparatus to massage &, eg microscopically or chemically, exercise the musculature, endocrine or other system, or to give that necessary illusion to the parts of the brain, eg including exertion & strain for some tonus or capacity & efficiency; or we might find it possible to disregard the state of the physique, even over the lifetime, & let it shrivel embryonically, or to just maintain that necessary part of the organism intensely or to 'minimalize' the extent of the organism; surely we could produce the hallucinatory, but equivalent*, consciousness of 'responding to reality' or 'being in the world', to the justified extent, supppsedly); less radically, apparently, the other 5 senses could be directly perceptually programed (eg micro piezoelectric & magnetostrictive/electromagnetic devices may certainly be built to cover & stimulate the extensive but finite haptic field of the body/stereognosis, & it's been possible to use a small area of this field to transduce vision for the blind; a la myoelectrics, it should be possible to supplement this physiomorphic rigidity with more steric coenesthetic stimuli; inertially or radically, the labyrinthal/vestibular sense will be troublesome, but it's thinkable it's omissible; I now suggest that "the senses" are fictitious, in that they're only derivatively & involvedly unique, ie that they're emphasized & used in correspondence with experience, & gain their distinction from the (linguistic) peculiarities--eg sonic

v molecular--of the external world, & our senses' limits, thus I make 'em factual & alternative, thus I deemphasize & reemphasize 'em; taste might easily be simulated, since it's simply quinquarticular, perhaps by an insertible electric palate, & the thermal sense as or more easily than the tactile with a wearable instrumental exodermis with microcircuitry; alright, now that leaves the vestigial nose, which is problematic, however according to the strongest theory of its nature I suggest that with its exposure we could get some semblance of multichemical smell, & possible improvement, if we used mechanical or electrical microscopic or textural interference; the coesnesthetic sense, 8th, is about as covertly difficult as can be, & god knows how it operates & is distributed, but it, too, might be controlled ingeniously); again, one's left with the possibility of hyper-sensory or non-sensory programing of the brain, which invites thought upon the greater possibilities for psychology by bypassing stages of the learning apparatus & exploiting the full and fully radical possibilities of the [redacted] cellular brain itself (personally, such cerebral cyborgs or isolates seem inevitabilistic, however involved might be the research foretime; on the other hand, to the degree that sub-cerebral & portative apparatus is usable, one imagines 'cyborgs' [redacted] might be much more massive & complex than our bodies, & the cities & architecture would, alas, have to correspond). Next, I present a new philosophic theory, as important as behaviorism, which I misleadingly call 'mechanism', with application to emoticns & values; before I called "the senses" fictitious, for this reason; there you have it!

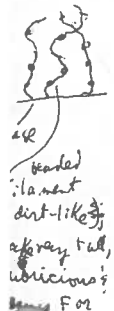
One can argue that we're sofar too uncertain to establish value directions, transformation & rigorous criteria & theories, however, that the inaccessibility of such certainty argues not against but for a contemporary provisional maximization of such pure science, efficient technology & practical construction as is now widely contemplated & pursued (it can, however, be argued that reasoning, in these matters, is impossible, & thus folly; this is a conservative, static & primitive, albeit quite acceptable, posítion); however, it's insufficient to choose some simple pattern & state, of this action, because the alternative, directive & dynamic consequences are analytic & vast; this argument applies to the following. An argument supporting the gigantism & progressivism of CIF, which however is not free of paradox itself, is that it's consistent, superficially & essentially, with our current logic that we push technologic transformation to its extreme &, second, maximize, or at least continue to extend, the amount of population; this pronatalist posture echoes & satirizes the Catholic condemnation of birth control, eg the criminality of contraception & abortion, but smoothly generalizes its logic to mean that, as is obvious, the failure of a capable couple (or society) to maximize reproduction is equal to murder or genocide, just as your parents might have weighed whether to have you in the past & decided against it (schematically bothersome); this argument envisages a most rapid achievement of a maximal population, on this Earth, rigorously with respect to a forfeiture for "bothersomeness" or quality v quantity (esp where the qualitative boundary is ethically autonomous, ie self-control can achieve vicarious greatness, man is otherwise indeterminate), and obviously argues for a plenary ecumenopolis, using all possible facilitative technology & preplanning.

'artificial grass & forbs'

A city's using incentives & penalties to entrain preferred behavior seems little short of compulsion, & less one thinks in terms of government using psychic inducements such as expectative obedience to published requests, one might as well work with coercion, granted with explanatory ethics, governmental balances with procedures & other insurances against its aggrandizement.

Re what people'd do if to-quaternary jobs were mechanized & abolished, one can postulate a quinary occupational category: "unemployed", noneconomic, detached from compulsion & involving pursuit of 'higher' or own ends, eg ideas or values; this might be connected with a guaranteed income, various methods of deriving an income without working or with little or initial work, or via usufructs.

As an ex of an interioristic trade off, one could substitute white sand for dirt, which is messy & visible, in the play halls. There might be various rules or procedures for eliminating or lessening the amount of circulatory 'dirt', eg an intermediary quick action locker room & nudity in the hall (which, to a futurist, seems undaring; of course, he has latitude), a portal cleansing device (US, UV, shower with special clothes, vibrator, wind machine, electrostatic), undirtiable & closed clothes (or costless & 10" changed), an exit pool, etc. One could imagine substituting a pilose, dirt-like landscape, with various properties & capabilities, or gravel or electroneutral particles--or a method of stimulating the effect of particular aggregates. I'm just firing off a few blissful eyed suggestions to make the prpfound point that technology can radically redesign the variety & quality of indoor life. With enough essentials, a machine could run through so many permutations that the world could be stocked with creative & ingenious, fairly simple gymnastic, game or recreative environments for groups of people, opposing today's damaging idiotic television.



Peregrine & incautious children could be monitored & tended, as well as educated, by a simian/or coleopteroid robot with a brain or also telecommunicatively linked with a humanoid or transhumanoid brain, & here the opportunities are infinite & fascinating, forasmuch as the robot can be so designed as to, by its appearance & behavior, elicit extraordinary behavior from its subjects (behavior can be, actually, witness the novelist, simulated rather easily, per my 'mechanism', & in great varieties; a machine is capable of much greater consistency of behavior, &, it will be found, of application to constructing, such as it is, behavior in others); the psychic handicaps of men glare here, where the machine worries not that its dalliance is temporarily foolish or that it musn't forget its possesion, doesn't react & is capable of infinite pains, never gets disoriented & ever adjusts & advances the realities of others, is precisely reliable & 'in tune' with each other, lives without stint for the furtherance of others' states &, unemotional, is perfectly capable of that euphoria & genius which we note so seldom & imperfectly in men; CIF mostly concerns a human world, so we may contemplate the possible states of man-machine coexistence, as well as the heights to which man can [redacted] bring himself; consider what a difference one who ever smiles, bubbles with human insights & laughter, soars with inspiration & intelligence, ever has wisdom's discipline makes in one's company--consider then how human development might be accelerated & augmented by mechanical nurses, teachs, consorts & mentors; I noticed the phenomenon that as I grew older & older ages that I'd [redacted] foreseen as mature turned younger & imperfect, so I expect must be when I die, so I extrapolate that utter wisdom & maturity is infinite &/or that men are intrinsically somewhat childish, thus I suggest that we may stop personifying machines as evil or wrong & build poli-

tical, parental & even 'divine' machines as animate or inanimate symbiotes for all ages & all of humanity, cf With Folded Hands by J Williamson; & I see nothing against building same's Humanoids, or a somewhat manlike mechanical substitutive race, which I see, within this context, as biracially inevitable; the child's robot might be a small personal one perching on one's shoulder or hanging about one's neck (the oppugnancy aside, in vivo) or as a helmet or cap fixed to one's head, with organic or prepared idiosyncrasies, or else an independent one for the one or many, & would serve to exosomatically order & organize the sequential lifetime, eg through loquacity such as to bring attention to & interpret the experiences & environment & establish intense & ramifying dialogues,-to install thoughts, values & attitudes--ending in an identity between the child & its robot (I'd argue that the [redacted] curiosity of the average child of today & of independency is extremely hypoactive; there're many other orthopsychiatric, orthopraxic, orthodoxal, etc reasons for such close & systematic supplements & complements; one needn't necessarily go as far as various [redacted] subordinations, eg a situal or remote machine with various types of intelligence to inspect, overrule, dominate, semiconsciously include or freely & abstractly manipulate a, eg hypnotic, human force, but these relationships might become meritorious, men might become rightly convinced of their desirability, eg temporarily or classly; again, first we must subdue our ditentive bogeys). An ex of a control which might be pedologically or criminologically justified would be a natal installation for 'punishing' or 'paralyzing' a person, in that a child about to do a tragic act could be remotely halted, preferably just by 'deactivation', by its attendant robot; however, i. I think an extraordinarily safe & indestructible environment may be built, ii. I think the child may be ex-

cellently taught re its environment & iii. I think sins & infractions can be abolished, as rule-breaking behavior, by various extraordinary positive reinforcements & inducements (agathologically & ethologically).

It's entirely possible that today's distinction between work v play v school is artificial, in that the child could & should spend all of its years & days busy with study, with diversion & vacations unnecessary; much as it's remarkable that education stops suddenly at 12 or 16 yrs, thereby probably limiting all the intellectual & cultural horizons of society, albeit inapparently, insofar mental development might go on upwards, hierarchically, into extraordinary accomplishment, possibly averting many of society's present troubles; this is one argument inescapably favoring political experiments, eg Soviet & Hitlerian, subordinating people to social-national development, granted there are Huxleyan, Skinnerian and even better alternatives, & that such experiments are almost impossible to conduct or analyze scientifically; unless another extraordinary development occur, it seems sure that eventually society will be morally enlightened that finite, semi sacrificial social & societal experiments are scientifically essential, as elsewhere in science, for the sake of higher & better things (let's be optimists, the day'll come when the fat family of humanity will trust itself sufficiently appropriately that these kind of voluntary & involuntary experiments, albeit in a basically changed climate, will occur).

I can foresee numerous or innumerable highly special cities evolving, or being put up & down, in the billions of yrs of future ahead (such as in Antartica, under the sea bottom, deep in the mantle, poised in space or littering distant stars & galaxies), but darn if I'm to try to describe their character, even the obvious fact the IQ will be higher, equipment

x (oeils-de-boeuf)

will abound, the faces'll look busy, sex will occur in the lab, the general shape of things will be unrecognizably altered by the influx of general technology, the cities will be appropriately environment-oriented (structurally), adapted in odd ways to the requirements of the area, new social organization will occur (if for no other reason, because of technical relationships & understandings), the environment will always have the romance that it'll involve a change of images & behaviors resulting from psyche's complexity & the logic of situations (musical instruments made of & scores based on local ice, candy made by extrusion & roasting in the circumsolar vacuum, food as the alien biota, postcards), you float in space & don't vomit* [redacted], sturdier materials must be used on Jupiter, etc. <> It's true that presuppositions will be woven & rewoven & reflect, in their profound complexity, different environments in the character of the cities, aeonically, but I could only damage & never count these substantial traits of cities in the future. I have bi-defined futurism as a science of totality & of ignorance, but by the last I've meant that we in the present, a mere mind, can never but see through the glass darkly; futurism generates its variety by mapping in ignorance, despite its cosmic latitude is foolish; the future is an infinite growth of specificity & differentiation, rhizoidal & ramate, splendiferous but incomprehensible--of course infinitely important.

*(note how a spectrum of different emotions are routinely substituted, arbitrarily & instead of phrasing this like a penchant, I could like a priest, ad infin.)

* This holds also because of heat

POSTSCRIPT

It suddenly becomes obvious that because of the natural & artificial instabilities that would be associate with vast & ultimate architectural terrestrial growth, & the instabilities & imaginative or energetic demands of that architecture itself, a planet of the size of the Earth offers no present reason for being the site of most future architecture.* Rather will smaller bodies & agravitational spaces serve. This is supported by indications of the eventual usable fund of energy, methods of handling energy & materials & a certain metaphoric attraction of the ether which I cannot, in the end, dispel. Technical & esthetic contemplation & calculation must therefore henceforth turn to the stars, or predominantly exterrestrial life. Arguments can be arrived at for facilitating, directionally, an early emergence, or a native development of population & civilizations. Cities of the future will literally drift in the three-dimensioned ocean of space, perhaps actually like spores - out into the cosmos. Their pilots, of course, will be superintelligent nonanthropomorphic entities on now possibly unidentifiable programs - though strong arguments can already be made in favor of the existence of such programs as natural consequences of tomorrow, somewhat alignable with todays.

Some engineering considerations are initial: the resultant spacial shapes could use the athermicity of space, plus locospherogravitation, for insulative & structural cryologic preabundant H & He, otherwise simple rock, as radiative shields against the lethal & destructive free mass wavicles & micrometeorites of space; microwheels, microcylinders & aegagropilous topopolises for inertial gravities--eg excavatory asteroidopolises; circumproximostellar wavicular collective apparatus egcum recto-directive roboto/track-mirrors galactofocally; plenitudinous entomorphic vicinal & radiolineal craft; hymenal, nebular & spectro-dense

x There's no reason why you shouldn't think in very long time periods, & if you do, it's obvious that global engineering will be necessary, or radical industrial cycling, etc., to accumulate astronomical amounts of possible societal plateaus, eg radioactive, gaseous, hydrologic, solid! In 10⁴, at 10⁴ today's affluence, the world's atmosphere will annually double — & what of the nuclear waste?

'biocentristic'

eg monomolecular mechano-apotheoses; astructurally knit nesopolises; lithic spheroelectropolises or ergopolises; maximal astroplexopolises; spherodomopolises; magic introkinopolises; platopolises; heliohymenopolises (dyssonopolises); introphysiopolises; chororopolises; amorpholabyrinthopolises; super arboropolises; vagoeremopolises; multiseptopolises & haplopolises; supravitropolises; interscelopolitan communities; sizeopolises (any size cities); uranopolises; xenopolises; arthropolises--& other atellurian exopolis & cosmopolis mellanopolise eg cyclostoichiomannopolises; on the other hand, callopolitan difformity & whim might transannually transidiologically transcivilizationally transtemporally operate to produce infinite natural & symbolic structure holopolitanly--eg a galactic immigration to or super self-population of a hylo-aggregativ cosmopolis, with perhaps signifigant differential omnivariegation & omniorganization, with an infiniteid inhabitancy (spatiotemporally), with a new paleontology serving to maintain prochronist synechism ie neoredundancy, pluriversally; there's also the prerational individualist diaspora achieved eg hypnologically, phylectically or transphotonically--which could be compatible with a, however, paradoxic aprogressive atelic 'naturalist' esthetic wherein unchanged few or classical nostalgic peoples boarded science-fictional images & ramified globally noctivagantly gleefully into the scintillescent cosmos in their metallic ultramicroscopic ships; otherwise one could picture bizarre technical planetary cities--eg jovian, plutonian, martian, venusian, mercurian, ad infinitum philomorphs; but the true meet histopolitan structure & attributes of cosmian cities, citoids, buildings & artifacts is temporarily unclear.

Very large spatiospherocopolises would be desirable because: surface-to-volume ratio favors because of decreasing relative as exterior interface to high-energy ether (incl meteors), heat-radiator, & decreasing mass of vacuum wall relative to internal mass with a pressured wall that will be smoothly & tautly texted; it would be easy to imagine the entire terrestrial atmosphere englobed at 30 perpendicular psi, which is little & requires much little.

'aigialopolis' (city by the seashore"

A FUTURE URBAN TYPOLOGIC TERMINOLOGY

This battery of terms is intended to suggest variations of unitary cities of the extraordinary future, sufficient that their inhabitants & global neighbors would be inclined to adopt the epithets. I have provided early synonyms that superior democratic choices may be made. Many of the classes are locational & structural, but the great number, sizes & real conditions of future cities account for this. If there are any future cities at all, & they are not just super machines, they will tend to fit this classification, & envisagement of their settings will render emotional & rational my varieties. Naturally my prefixes form composites & specifications, but many such combinations will also prove unique & sui generis. These classes, then, are the huge superficial framework for the imagination of smaller-scale realities.

Kinopolis, Motopolis, Planopolis. A mobile city. A kinopolis might be a city axially made or left to rotate, on the ground or in space, say to disorient the inhabitants psychicly, simulate or obtain solar cyclicity, produce centrifugal gravity, create an inertial schedule for concentric horologic transportation or multilevelar shuffling; or a city with a good deal of artistic or societal action. A motopolis could be a city, of various sizes, capable of locomotion about a landscape or within a space; such a city might be piloted about in space, through air, on the ground, or on & within the liquids of its planet. A planopolis could be an urban body given to wander randomly, say floating over the ocean; or it could be, & at once, a planetoidal city.

Cytopolis, Dictypolis, Histopolis, Hysteropolis, Favopolis, Demopolis, Plexopolis, Nidopolis. Network created by intersections & interconnections of the hierarchic maniness of cities & the nebular striations of population without them. Occupational, functional & transportive network of the subterrene or steric city. Pattern created by an intradistribution of natural & unmatural elements. Topologic network of a compresent city. Hodology of a very intricate city. Various of the terms have various references to an EMForster city wherein the inhabitants are cloistered, cozied, englobed, merged, embodied or just restricted in an all-encompassing environment, say with no travel, contact or bodily motion, but with varying degrees of dehumanization, abstraction, mechanization, automation, cyborgization, dephysicalization, etc, eg in a womblike city, with men reduced to microbes or micrococci; were pleasure to turn out or be what life is all about, eg temporarily, such a city would not necessarily be bad, but instead splendid. A dictypolis might be a web of transportive & domestic filaments & beads erected in space or within the sea, of various diameters or dispersions. A demopolis suggests a hyperpopulated, smectopolitan & democentric city, eg it is an antonym of mechanopolis. Some oceanic cities might involve pelagic evacuations dropping down from the surface, say onto & into the benthos, of various widths; similar pendular or conic formations might hang from space or penetrate into the crust, as lumenopolises or favopolises: these would all be nidopolises. A cytopolis might also be a city which is one of many within, or constituting, a histopolis, cosmopolis, etc. Some of these names suggest various densities.

Tychopolis. An urban or populational concentration produced by, or-& representing, elements of chance or unintentionality. The aspects

thereof. Such aspects in general.

Neopolis. A new city. One built from scratch & at once. New elements or parts of a city. An experimental city. A city yet to integrate & find itself, develop its social fabric & idiosyncrasies. A city built according to new considerations or design. A city of perpetual renewal. Renewed elements or parts of a city. A future city (mellanopolis).

Oopolis. A spheroid steric city. Perhaps randomly deposited. Another eiderdown hysteropolis.

Lentopolis. A lensoid steric city, such as might form under the sea or ground (say at great depth). A multiannular multirotational spatiopolis.

Archipolis v proteropolis. The former would be a primitive city, the latter would include merely earlier & incipent cities or city.

Conopolis. Another geometric city suited for a special sphere.

Micropolis, Atomopolis, Coccopolis. A small city. Perhaps a microminiaturized city, eg an atomopolis or coccopolis. A special or familial, rural city (arcadiopolis). An argopolis. A microbalneopolis. A city within a city.

Monopolis. A single city (which may be quite a phenomenon), perhaps an outpost, eg on a planet. An isolated city. A highly homogeneous city. A specialized city. An integropolis.

Dolichopolis, Telopolis. A longitudinal, narrow or distance-spanning city.

Telopolis. A perfect city. A complete city. The ultimate city.

Cyclopolis, Rhombopolis, Teleopolis. An esthetic or ideal ectopolis. An annular rotatory city in space, say interstellar or galactopolitan (transcosmic). A centrifugal cylindrospatiopolis. A periepeiropolis, such as a perimontane or pericontinental ectopolis; ie a peripolis.

Zygopolis. Fused or merged city. Interlinked cities. A binary spatiopolis.

Ectopolis. A surface city or part.

Endopolis, Hypopolis, Subopolis, Intropolis. A subsurface city or part, within land or sea.

Eurypolis, Platypolis, Squamopolis, Tanypolis. A broad humifuse ectopolis. Broad, flat, scaly & stretched-out cities, respectively. Steppopolis--a city across plain.

Stenopolis. The antonym of eurypolis--narrow, short & small.

Acropolis. The top of an altopolis. A city set on a natural or unnatural height. Highest city. An exopolis.

Altopolis, Hypsopolis. High city or part. A hypsopolis could be a hanging or floating city, or a satellitic city. A city with heighth, possibly narrow.

Stratopolis. An eurypolitan altopolis. A stratous stereopolis. Stratified cities. A stratospheric city.

Stereopolis. A steric city or part, usually one in which the buildings are megaunistructural & endopolitan. The center can be within, upon, over or beyond the planet.

√ gramminopolis (grass-)

√ a cartiecomely city = a curiopolis

√ ~~c~~anellopolis

√ scytopolis (skin, integument

√ crossopolis ("towering up")

√ clinopolis (slope, bed)

√ ammopolis (psammo) a 3D sand city

√ cetopolis (whale) a huge ~~[illegible]~~

~~[illegible]~~ ~~[illegible]~~ endo astroargopolis

√ verticillopolis (whorl)

√ ho

√ hoplopolis (armed city)

√ ~~[illegible]polis ([illegible])~~

√ syringopolis (tube: fistula)

Some Varieties of Cities

kinopolis--mobile city.
plexopolis--network created by intersections & interconnections of the hierarchic maniness of cities & the nebular striations of population without them; occupational, functional & transportive network of the underground or steric city; pattern created by an intradistribution of natural & unnatural elements; topologic network of a 'compresent' city; hedology of a very intricate city,
tychopolis--an urban or populational concentration produced by, or & representing, elements of chance or unintentionality; the aspects thereof; such aspects in general.
neopolis--a new city; one built from scratch & at once; new elements or parts of a city; an experimental city; a city yet to integrate & find itself, develop its social fabric & idiosyncrasies; a city built according to new considerations or design; a city of perpetual renewal; renewed elements or parts of a city,
oopolis--a spheroidal steric city; perhaps randomly posited;
lentopolis--a lensoid steric city.
conopolis--sic.
micropolis--a small city; perhaps a microminiaturized city, eg atomopolis; perhaps a special or familial, rural city, or an argopolis.
monopolis--a single city, perhaps an outpost, eg on a planet; or an isolated city; or a highly homogeneous city; or a specialized city.
telopolis--a longitudinal or distance-spanning city.
teleopolis--a perfect city.
cyclopolis--sic.
zygopolis--fused city; merged city.
ectopolis--surface city; or part.
endopolis--subsurface city or part.
eurypolis--broad city.
stenopolis--its antonym.
acropolis--the top of an altopolis,
altopolis--high city or part;
stratopolis--an eurypolitan altopolis; a stratous stereopolis.
stereopolis--a three-dimensional city; or part.
tropopolis--a city of or in change; or part; or changing direction.
ecumenopolis--a planetary city; a solid, surface, bihemispheric, pancontinental, pannational or continuous earthly city;
geopolis--a city in the ground; a solid ecumenopolis; an artificial ecumenopolis.
exopolis--a city at the exosphere; an exterrestrial city.
atmopolis, aeropolis--a city mostly or wholly in the air in suspension.
thalassopolis, oceanopolis--a city on, in or under the sea.
hydropolis--a city on, in or under the water, in sea, lake, river or ice.
glaciopolis--ice city, eg in the polar ice sheets, or upon or under them.
thermopolis--a city in a torrid or tropical zone.
frigopolis--city in a cold or polar zone.
therm opolis--just put this in for fun as something Mumford would coin.
hylopolis v etheropolis--2 ultimate cities, the latter of noetic matter.
rheopolis--a city so big & high that it must flow, an oropolis, ergo.
spheropolis--a spheric city; a geopolis finished.
uranopolis--a satellitic city (or moonopolis?); a deep-space city; an astroargopolis.

plutopolis--city deep within Earth; I suggest: endopolis, just under; abysse
polis, more deeply, or pachyopolis; regopolis, of the crust, -35 miles;
lithopolis, of mantle, 35-385; aesthenopolis, -1000; [illegible]polis, 1000-3
paleopolis--antonym of neopolis;
callopolis--a beautiful city or part thereof.
chromopolis--thrown in just to show how easy it is to make a unique, good ci
oropolis--a city or building, or part, so massive & high as a mountain; a
city in, around, near, upon, under or atop a mountain or mountains
orthopolis--a vertical city, building or part.
mechanopolis, dybopolis--a city pervaded with, run for or inhabited strictly
by machines.
xenopolis--a city of nonhumans, transhumans or exterrestrials; a city in a
strange way or form.
eupolis--a good city or part.
kakopolis--a bad city or part.
necropolis--a moribund, Humfordian, threatening city;
somnopolis--a city of inactive, internalized or uteral people.
intropolis--an enclosed city, part or population--human or mechanical.
hemopolis--a steric city which little extends underground.
extropolis--a city outside an enclosure, polluted or populated.
arthropolis--a segmental, jointed city or chain of cities.
argopolis--a navigable city, on or in sea, air or space.
etheropolis--a space city,
bradypolis--dull city.
demopolis--a human city, or part,
sociopolis--the city as society.
physiopolis--a city in, like, subjugated to or integrated with nature.
ultimopolis--an or the ultimate city.
cosmopolis--a universal city; an ecumenopolis.
tachypolis--a fast active, changing or growing city; an accelerated city.
benthopolis--a city which's geocentric; an abyssopolis; a city upon the sea
bottom.
abyssopolis--a geopolis; a city deeply underground; a city in deep sea.
pachyopolis--a dense city; a deep city, geopolitanly.
lithopolis--a lithospheric city; an oropolis.
xeropolis--a desert city.
xylopolis--a high, fibrillate, cellular city; a grcup of high buildings
or cities which have come close or together.
etiopolis--a city filled with, even made of, cause; possibly a city origi-
nated for a reason.
mellanopolis--a future city.
metropolis--large city.
megalopolis--a super city or urban region.
axopolis--a city arranged along a growth axis.
blastopolis--a growing city.
dynapolis--CDoxiadis' term for a continuously growing or growable city.
psychopolis--a city in terms of, for or in the mind.
noopolis--city of pure, human or inhuman, mind, neomorphic &logical.
biopolis--antonym necropolis or noopolis or mechanopolis.
helicopolis--with stratopolis, & plexopolis, as abyssopolitan ways of con-
structing a city so as not to collapse.
xerdopolis--jungle city; a sylvopolis.
stylopolis--sic.
limnopolis--lake hydropolis, eg a terropolis' extension, or a benthopolis'.
holopolis--a city as an integrated totality; a city resultant from the in-
growth of a cluster of circumjacent buildings or cities.

Precede this by the Envol

Architectural Tomorrows

I have a theory that environment shapes thought; it is difficult, however, to either illustrate or elaborate. If you have studied 20th century art you may have become aware that the range of communications was enormous, yet without there being in use any obvious, set vocabulary; this doesn't mean that there wasn't some strange, disproportionate 'vocabulary' essentially in operation, perhaps one based on a combination of the properties of the environment, of strict human physiology, of human nature and of higher formal relationships relating to the intuitive logics of life itself, in the batch. I assert that the structure of environment, its architecture, conditions its occupants, both resident and visitor--the latter, in the sense that the vision of the world is altered. I contend, therefore, that the micro-structural form of the global environment integrally brings about an average of world behavior, standardedly heterogeneous and criticizable. It is not in my power to assess the exact strength of the contribution, but I would say that it is evolutionarily of extreme importance, and that divergences with respect to the norm, and in adaptation to situations, greatly vary the quality of human behavior. I would at once caution that the relationships and behavior which do obtain are by no shake of the stick simplistic and atomically regular--for maximal conditions and the avoidance of misunderstanding. By environment I connote, moreover, finally, both factors such as the visual, muscular and empirical demands of the sculptural ingredients in their dimensions, and the non-sculptural, so to say, componentry, including the visual texture and coloration, the acoustic properties, the ecological aspects, the interface with the whole and natural environments, the design peculiarities, the objective content--including the inhabitants--the configurative gestalt, and all the other cognitive elements, including the schedules and structure of the lives, the precedent political environment, the image of the future, the extremely random elements, which I will loosely lable 'the history.' I have thus reduced the architectural structure to a cognitive map, wherein a corridor corner mounted with fascinating photographs can modify the entire environment. What is important, then, are the multifold dimensional accesses by which the behavior and sensibility of society are made variable.

I believe that with increasing absolute economy of prices, universal income, social settlement and planning, social crises demanding overarching and prescient solutions and the evolution of other forms of commonsense, without which life is often foolish, a conception of entopia, architecture as universal enclosure and coefficient of super-awareness, will emerge and develop, and the tendency will be more towards investing so much science and work into the environment, in reinforcement by the social sciences, that it will become like the museums of today, a solid, all-encompassing informational interface, recreationally designed, and designed for the lifetime of everybody, in particular. I see as one of the challenges the virtual usurpation of the processes and appearances of nature by artificial and synthetic parks, and more abstract structures or mere devices. (In this latter fashion I see the possible death of externalistic architecture engineered for the perceptions of human beings, becoming a functional and repetitive machine, in fact.) Given human crowding and specific developments in technology, I esp see the emphasis upon the medical and artistic shaping of the private environment, the 'individual cage.' The

*(change the degree of adaptive complexity must be considered)

correlation of these elements is too uncertain to warrant a prediction, here. Suffice to reemphasize that the entire range of components, many of which are now unaffected, unorganized or unintegrated, will subsequently become so, becoming recognized, described, understood, controlled, developed, mastered and displaced; many new, entirely artificial elements will enter environment adventitiously, creating their own environment and values. The single identifiable trait may be that the extensive and intensive range of variation will be increased, locally-globally, statically-dynamically; environmental reality will, ipso facto, intensify. If you took the topography of the Earth, the vertical and horizontal interweaving of structural entities such as streams, strewn rocks, trees and clouds, you would realize that it all constitutes a wondrous behavioral geometry; nature outshines the past of human artifice because its substituents are of unstinted number and variety, the variety is homogeneous, eg scalarly, and the substituents and components are interwoven in additionally provocative static and dynamic processes. A science of variety, which I anticipate, will forever displace monotonous 'nature.' So, the two-headed beast I now find in the garden is global ecologic landscaping and global geologic landscaping--the survey and restructuring of landforms and of the planetary surface, in some sense, as a whole. As per my introductory definition, nature has always been a complementary or sui generis part of architecture, and its style is now in rapid directional, though unconscious, flux.

What is happening in the psychological school of Skinnerian behaviorism is much more radical than usually thought, since an objective process is transpiring analogous and complimentary to transformations in the overall structure of knowledge and the world. Behaviorism is fragmental and finitistic, more importantly, searching out the small, constructive units--epistemologically--whereby the large and whole units, which previous knowledge dealt with crudely, expressionistically, are enabled and measured. The environmentalism which I pose, in this chapter, will include the interlocking, fragmental behavior--its study and eventual reassemblage in wholly new and productive forms, and processes. The dramatic, gestalt point-of-view is actually [illegible]observed, by this simplification, but its full-blown reinstatement will either await the future, of computers or novelly-educated architects, or [illegible] prove inhuman. This continuous alphabetization will definitely be therapeutic. Beyond this, architectural psychology exceeds our present, distinct scope.

I see three sciences forwardly converging: urbanology, though in its present form or spirit, redemology and architectural engineering. The time-scale, in the present, for urban developments is lengthy, but I recognize an unprecedented socio-political willingness to fashion and implement a science of the city as a whole, ab initio or correctively. What we might call an intellectual technology is about to develop from heights of soft and hard computer technology; the monotonic, strict dissociation of human and machine intelligence is spurious, overlooking the fact that moronic and 'idiot-savant' computers will and do outdo men, sofar as their regulatory, heuristic and holistic powers are concerned.

In the way of man-machine liason, I see emerging new capabilities, such as of automated design in real-time qualitative and quantitative massivity; esp a plastic 'systems' approach. I see an unprecedented opportunity for interpersonal collaboration, including the team creation of a whole city, and even inter-urban interaction. I see the possibility of employing telemetry and theoretical models to amplify consciousness, and create an unfettered vision of the unitary small and large elements of the city.

More sophisticated architectural engineering might entail: geodesic domes, 'fancy' stressed shells, pressurized skins and esoteric materials. Here is a list I made some time ago,

a) all the fashional phases' contrastive unfoldment of artistic possibilities
b) (toward complete plasticity/
c) variety/
d) texture/
e) property);
f) toward a totally plastic architecture
g) with no structural limitations;
h) toward the minimization of necessary structure,
i) or the abstraction of structure to symbolic utilities
j) (eg privacy,
k) mystery,
l) presentation);
m) toward an architecture which is 'totally illusionistic,'
n) kaleidoscopic,
o) kinetic,
p) multisensorial,
q) useful of the environment's possibilities;
r) toward a nonhylemorphic architecture
s) which is totally vertical,
t) towards ideal thinness;
u) towards invisibility,
v) penetrability;
w) towards a totally responsive environment;
x) the advanced mathematics of architectural structures' appearance
y) and function;
z) the impressment of the manifold of material manifolds;
A) toward the balance of progressively macro elements with the indivisible atomic anthropomorphism of the structure;
B) towards astronomic,
C) natural
D) and demonstrative architecture.

Some science-fiction novels' covers have displayed architectural elements in their scenery. These have typically been notable for their excursion from the modalities of our day, which last have norms such as box-likeness, restricted height and size, monotonous and functional coloration, distinct buildings interconnected by streets, flatness, rectangularity, orthodoxy and essential limitations. The range of 'natural' (visual) forms is explored, by the former, as also the unempirical set of contemporarily meaningful hierarchical recombinations of the panoply of considerations discussed in my ante definition of environment. By casally contravening the implications of the conventional laws and requirements of physics, eg, pure visual configurations are arranged surrealistically in flagrant disregard of vertical, horizontal and perspectival distinctions; buildings, cities and individuals are blurred into spicular lumps that teeter and drift magically across the countryside or through outer space, or float mysteriously or majestically upon varicolored oceans. The 'natural environment' is transmogrified, contributorily, with oddly designed, scaled and functioning aspects and modalities. Super-Wrightianly, the vision is built of curves, drifts and webs. There are supernumerous bubbles, diffractions and abstractions; pellucid attitudinal monsters.

× 230 [illegible] possibilities
$\sqrt{\text{Earth core}} = 45 \cdot 10^6$ psi.

Is there prophecy in this fiction? I believe so. There is a science of
bionics in respect of mechanical analogies, there are many elemental, holis-
tic and analogous similarities to be recognized and produced respecting
biological and architectural structure and appearance, including machinal
ones. It's quite likely that the full range and familiarity of these results
have not come into existence because financing is inherently small-scale,
insular, scattered and conservative or cunctative, and because no apparatus
has come into existence, and no expertise, for constructing and checking
the novelties. Moreover, one can predict the feasibility or plausibility
of extraordinary structures, typically semblative to the random and effec-
tive stuff supra, without prophecy, simply by incisive reference to the
intrinsic limits, and implications, of presently existing, but organiza-
tionally impeded, structures and materials, in overall schemes; eg by ap-
praisal of position in, eg, the S-fold Eric Jantsch technological ladder;
and this arboreal and vectorial approach is extraordinarily suggestive. If
one review the primitive and quasi-ultimate implicative limits of accelerated
science, one deduces that the prospect is on or close to hand of extending
architectural elements into the desert, mountains, jungles, arctic, oceans,
crust, mantle, troposphere, stratosphere and exosphere--as well as outer
space, proper. This deduction is confirmed by the minimal appearance of
representative examples, in our day, which are often modularly equivalent
to any totality, and their individual extrapolation. We thus have a double
indication of architectural imperfection and progress, doubly. I would en-
courage that a trenchant inventory of the cycle of biological forms be made,
and assert that the abundance and characterology of these forms is astounding.
It is difficult, however, to decide whether society will pursue architec-
tural greatness, by exploiting varietal range and organization, or, instead,
engineering greatness, whereby architectural forms would be simplistic, re-
petitive and functional; or whether purely functional considerations or al-
lowances might generate a certain exploration and representation of infinite
forms. Architectural extravagance is, in any case, directly comparable and
rather relatable to private, eg domestic, extravagance, which serves as an
indicative argument, in the face of impersonal architecture's publicity and
conspicuity.

Within architectural pieces we may discern fragments deserving isolation
or multiplication in other pieces, either by dint of their novelty or their
suppressed, surreal worth. Some of these seperations are, in effect, harbin-
gers of the future. If we can identify necessary understatements and avoid-
ances in structures, we can exaggerate them to implicational extrema; the
family of such exaggerations and elaborations creates freedom such that we
may predicate modalities upon their combinations. One of the first things
that happens, in this latter stage, is that the vertical, distal and hori-
zontal components (plan and section) lose their boundaries and sterically
combine, in a matrix. Then innerness and outerness--or openness--takes on
a kind of ambiguity. It is uncertain whether, again, there would be premia
on space such that spatial articulations would be small, narrow and similar,
or, contrarily, there would be some meaningful distribution of the sizes of
evacuations, eg sigmoidally, or a distribution for purposes.

Mr C. Doxiadis suggests an intersective grid (nature, man, society,
shell, networks, vs man, room, dwelling, dwelling group, small neighborhood,
neighborhood, small town, town, large city, metropolis, conurbation, mega-
lopolis, urban region, urbanized continent, ecumenopolis), which might be
cubed vs functions--residence, commerce, industry, administration, defence,
or factors--money, labor force, building materials, urban land, plans, in

X (Lovly 65% Quhili 46% ... ; shd of Transubstn)

ekistics. A world hierarchy of communities, per supra, extant and to embody future growth; a dynapolis, or prepared axis of successively larger urban centers and widths--to prevent overtaxation of an immovable core of an expansive city. He envisions an ecumenopolis ca 2068-168 of ca 3 X 10^{10} men (or more). What must seem a fanciful overstatement to most, his proposals strike me as conservative, indeed; birth-control threatens to abort this inadvertent ecumenopolis, and he ignores many of the areas of the Earth, such as North Canada, which seem expanses perfectly likely to be inhabited. I suspect my disagreements may be due to greater farsightedness and uncertainty, or be explemental.

There is probably a moral obligation to produce as many terrestrials as it is possible to maintain without unacceptably infringing on the quality of life, in general, and how much this is will directly depend upon what the progress of science and technology permits. Indications are that this is presently a considerable expansion (despite the miserable standards of living, and shifting expectations, of segments of the world population), and that this is in no way comparable to possibilities and probabilities in successive scientific plateaux; it has been seriously, and cogently, proposed by scientific authorities that a future population of several trillion is perfectly comprehensible, within the powers of science. I suggest that we can make an imaginary, substantial maximum (so phrased, because I don't intend for us to rush unpreparedly for an obligatory goal, since alternative eschatological bases are more likely to conflict with normal ones, and because fringes of describable maxima suggest nonlinear values and are essentially very abstract and intuitive) for the feasibility of justifiably maintaining population, through time, volumetrically for our 8000 m sphere of 10^{20-4}, though the higher values connote some serious biological adaptation; this is the square of our present obtention, and must needs cause some suspicion, since it suggests a density of 100/sq'; I'm speaking, however, stoically--10^{18} would allow everyone their castle, the other figure is designed to suggest a standard space varying from the size of a room to the size of the human brain. Viewing the economies present in physiology, I see no reason why an apparatus for the maintenance of a chambered demosphere must more than double the space per man. 10^{24} represents the threshold for intensifying humanoid life of the Earth, beyond it, I have seen estimates of the quantum inefficiency of the brain which suggest kicking up that 'population' by half again that exponent*, but this is an inarchitectural curiosity, or parallel to L. Pauling's architectural chemistry. These numbers are interesting, since they impose the really distinctive alternatives upon global architecture, within a fair range, and of an ultimatum. The equivalent surface, 10^{14-16} men, may seem unpleasantly crowded, with 10^{5-7}/m (say Paris has .24 X 10^{5}, some Asian cities 10^{5}); it should be realized that this concentration would not be intensified, by having to apportion land to differentially, say non, occupied areas--since we envision the mastery of the terrain, water and ice; but the comparison with these urban examples illustrates the true demand. should be realized, esp however, that this projection refers to the possibility and probability of a building-science so advanced, and partaking in so many concomitant technological advances, that the inventory of complaints appropriate to our instances of crowding would then be nonlinearly, commonly inappropriate; eg acoustic insulation, perhaps immaterial, would enable transportive encapsulation and integrally ultra-thin walls to apartments, communication would oust fenestration and minimize travel, automation would minimize excursion, environmental factors science would transcend outdoors.

* (ref von Neumann)

*# (the nutriment could be electrically regenerated, the net gain of this lovely is very slight & could partially depend on the o

*(intermutatively)

Celebratory

What I foresee, then, is the opportunistic or preplanned sunrise of a planetary engineering, by which the globe will be hollowed out or reconstructed as a giant-size condominium; if the globe were homogeneous cerebral tissue, given its density, this would make it 5 E big, or multiply its diameter by the cube root of 5;* if a house weighs 100t, and this be taken as a standard density for architectural volume, the Earth permits, by weight, ca 10^{20} such house-spaces, equi-densely necessitates a 50-fold volume, or a ca ... Rouun diameter sphere. I have, naturally enough, no estimate for the subjective average distribution of open space, ala nature, density, for juxtaposition to the domestic structure; what is interesting is that, in this case, openness free for the, semelfactive, taking. Among the advantages of disassembling and mechanizing the Earth are: the gravitational restraint and strain on vertical and subterranean extension are decreased, as gravity decreases by the mean square-root, the solar surface multiplies, the seismic and volcanic sacrifices (+ centric concentration) are stopped (inter alia), interior resources are exposed, the interior heat may be tapped, much spinoff occurs, transglobal travel is--sterily--effectively expedited (mean distance as function of proximity-density) and, of course, animation. (GECHIRURGIA)

F. Dyson, as well as myself, have suggested the desirability and feasibility, if not destiny, of dismantling and distributing a planet to serve as a sphero-solar shell, as the natural augmentation of pedologic insolation or conservation of the momentous erg release of the Sun. These enterprises are not so fantastic, considering that i) they're resultantly justified, ii) new enabling energies are coming out of nuclear physics, iii) engineering scale invites such extrapolation, iv) other extraordinary goings-on will be contemporary and v) there will be moral, competitive or interested reasons connected with population. The Earth has a volume such that it, centimetrically dislocate into a surface 10^{27} cm^2 on a side, 3 X 10^{8} miles square; this folds into a sphere, when redistributed, ca $10^{8}/2$ miles in diameter, close to 1 au. We increase the depth of the soil to serve as an inertial translator and to enlarge the entities upon it, as well as decrease the ratio of the energetic devices with respect to the Sun, halting where the ratio of the IR and other radioactivity becomes mutagenic, with respect to the means of impedance. This distance is linear with respect to the gain in soil depth, so it is more possible that the brake on intimacy would be either some conduction or a tendency to erosion or instability next to the violence of the Sun, and the steric infrastructural advantages, hitherto cited, would mean that the (+ spheric) absorber would probably be condensed within the orbit of Mercury, which represents a value of -2 cm for the Earth, and an unrealistic enlargement for the entities, making it obvious that this station would have to be uninhabited, if not (+ rather) sterile, serving to collect and collinearly redirect solar energies, if it were to serve as a perfect sphere, and not just a spherical slice. The alternative was proposed by Dyson, who suggested substitution of Jupiter, whose mass is 318 E, affording a potential cthonic or impedance value of 24', mercurially. My original proposal was that the entire (planetary) solar system, ca 550 E (37'), be so employed; finally, that the Sun itself be destroyed (this would depend upon such things as the conservation of dismantlement, etc.), its matter and energies being equally distributed throughout a vast number of concentric spheres, or a seme of monotonous occupant spheres or some matrix, and its central point being used, more appropriately, as a focus of information. The sum of mass in our Solar system is 332,500 E. This defines the potential occupancy ..., according to the above considerations, as a moment of 10^{25-29} men (10^{41} von Neumanns). 10^{80} visible cosmic atoms permits 10^{52} men, 10^{64} von Neumanns (...