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PROGRESS

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What is wrong or right with it? This paper treats this question.

What could progress? Science, technology, social processes, human personality, health, the city, the environment, art, international affairs... the list is endless.

A reason for progress is that the good life is not yet universal. The highest standard of living known by anyone on Earth, by average Americans, by the developed nations of the world, foreseen by the human imagination, &c has not been attained by all, most, or many terrestrials, or by all Americans, &c. Arresting progress now would to this degree be premature. It could to some extent freeze the current pattern of distribution and the huge gaps which separate people. There are those who would see this as desirable or at least acceptable for such reasons as that it would relieve the strain on world resources and capacities, burst the fatal or absurd illusion of the all-goodness of growth or growth ideals, preserve the colorful and essential variations of mankind, preserve appropriate inequalities, &c. On the other hand, populations or leaders of relatively undeveloped and developing countries might autonomously disdain any check on their growth and repudiation of the good life visible in other nations. There will always be some contributing to growth, and, ironically, nations affirming growth may swell demographically to outrange effete antinatalists. Moreover, foresightful leaders of various nations may recognize critical opportunities for their countries to outdo or outvote other nations by growing both economically and demographically.

Our direction, destination, nature, want, aptitude, and capacity (or many) are not yet known. For example, something of our vitality and nature may be the result of, require, or be the cause of growth. Certainly there is a tremendous gamble in stopping our growth. For centuries, perhaps millenia, mankind has been growing. This growth has fostered marvelous cultural change. It has brought unprecedented improvement in the standard of living and the quality of life (overall). We do not know whether these are separable in the future. Fuller and better life, greater human number, the velocity and very fact of change, &c may be inextricably interrelated. There may be horizons ineffably beyond those known today and these may depend on sustained growth for their realization. Do we know what the human family wants? Do we know what we ourselves want? Would we be rash and arrogant to foreclose those horizons by now abandoning growth? Have we really assessed and integrated those horizons in our equations of policy? Might modern standards of living be a compromise between need and satisfaction, liberation, or unimagined splendor? Might the world be run more efficiently, safely, purposefully, &c as the fruits of continued growth? Suggestions to the contrary, we really do not know what the capacities of the planet are, nor our human powers of adaptation and mastery. Images, ideologies, and rootless fears opposing growth are nothing to understand, yet readily argued against.

Quantity and quality of "the good life" are as yet undefined. Human needs and wants seem to endlessly change and expand. Man could obviously profit from a million things he does not have. Abundance can enable a quickest and best discovery of real needs and wants and their solutions. It is possible that we are right on the threshold of an adequate or suitable standard of living. True leisure may require such increase of productivity, such industrial processes, and such automation as can only or best be gotten by furthering growth; it would be ironic, indeed, if we were to postpone or abort a degree of "total automation", and it might even be tragic as far as the underdeveloped world is concerned. It can be argued that the quality of life, standard of living, variety and excellence of human opportunities, excellence of the world, &c does or can go up, in effect, exponentially as we grow beyond our current or some future point. It can easily be argued that the desiderata of recovering the environment, perfecting lifestyles, perfecting society, saving the miserable half of the world, transcending economic motivations, eliminating the causes of war, simultaneously attending to vulgar and aesthete wants, ultimating science, providing full leisure, &c assume persistent, intensified, or even maximal growth. Growth may not be redirectable, say to these ends, and a practical compromise may be to support general or conventional growth as still the best way of attaining "noble objectives". Human disagreement about "qualities" and "quantities" as the ends of growth may require greater growth to serve an inefficient multitude of values.

Progress and problems (even so far) are disconnected. It is plain that most or many problems, at least in some sense, are more or less independent of all, most, some, or any "progress". Many of our current problems are immemorial or racial problems misattributed, either basically or symptomatically, to either progress, aspects of our current milieu, or even in any sense to our milieu or age, particularly as a matter of scale. Many problems have been thus assigned in the most casual or fanciful way, without good documentation, validity, or truth. Many problems are of a kind that in effect "elects" "causes and correlations" indifferently or noncausally. Many problems have been aggravated by our milieu but are in fact perennial. Many problems are interrelated, one, or causally simple, so that problems are less numerous or important than feared. Many problems are inventions. Many new and additional problems are inevitable, trivial, or quasi products of affluence, solutions, changed conditions, or merely the human appetite for problems. Many problems are simply expressions of problem-solving transitions. Solution is often disorienting, painful, inflammatory, touch-and-go, and perverse. "Problems" are often but projections of attitudes. It is hard to show that any past, present, or future problem is essentially or necessarily a result of "progress". Progress seems surprisingly compatible with the absence of many problems. Problems that have resulted, in one sense or other, from aspects of progress cannot necessarily be reversed, tempered, solved, or best solved by terminating progress, aspects of progress, or even the specific original sources of the problems. What is apposite is caution. Finally, the scale, number, grievousness, or variety of problems may have been going up, even suddenly or steeply, without exceeding or failing to vindicate the rate of progress or the future returns of progress, eg in the crude sense of the sum good outweighing, at least potentially, the bad. There is also such questions as that of distributing culpability to various persons and agents, and exonerating progress itself.

The special need for types of progress; the fallacy of "progress" generalized. Many things are included under the umbrella of the word progress without belonging there. Conversely, a large number of things, both essentially and not, do belong there. Making a bogey of an abstract and absolute "progress" is silly. It is clear that we should be selective. Obviously, for essential and inessential reasons, many bad and good features of progress coexist. Many indubitable, wonderful, unambiguous, and isolable progresses are recognizable, that do not presume--as cause, effect, relative, or companion--objectionable progresses, regresses, or conditions. Progress can rely on innumerable heterogeneous means for the attainment of unnumberable heterogeneous ends via numberless routes. Science and the economy can take many different forms. Yet the critics of growth, and even progress, overlook such vital distinctions as a matter of habit.

Current problems are just early, transitional, irrelevant, or inessential. Founding America was a costly, idiotic, "misguided", and fearful process: was or was it not justified by history since? Baking a cake is a messy procedure: the cake may be exquisite. Developing the US resulted in the Civil War. Settling the West Coast meant much tragedy at the time of the San Francisco earthquake. Growing up entails many stresses: ought we end our lives as children? Hardship often occasions triumph and absolute improvement, and deepens the meaning of life. The road to transcendence is often perforce crisis. Rapid growth of world population will produce much death (through normal causes and through famine) and austerity, yet it will also produce many more lives and it might present a unifying challenge to the world from which the world might profit. Affluence may initially produce waste, prodigality, boredom, abuse, transvaluation of values, and nihilism, but inevitably, and just as inevitably give way in time to a healthy, strong, happy, knowing, and purposeful culture the equal of or superior to its predecessor. There is a widespread and chronic mistake of confusing, as above, the nature of progress-related problems.

Progress is ambiguous. I intend this as a reply to the same remark used as an objection to progress: the sword is double-edged. Both epistemologically and ontologically, people do not know what is meant by "progress". It is difficult, or at least improper, to object to something neither seen nor understood!

Maintenance may be taken as an instance of progress; if maintenance halts, we degenerate. Without progress in general we may degenerate. Many things are really meant by "progress", and, ironically, maintenance is one of them. The critics of progress are often simplistic in imagining a stabilized, regressing, or regressed world. There are the confusing dynamics of our economy. There is the dependence of many of our enjoyments upon some general level of goods, services, or activities. There are dangerous complexities in necessary equilibria, and in the human equation. Growth, adventure, size, and change may underly or stabilize much of our psychology and our quality as a culture. The obvious importance of maintenance underscores the arbitrariness and improvability of our standard of living, and its economic basis. There is neither sharp nor straight line between maintenance and progress, and the interdigitation presents a challenge. Much we value in "maintenance" is actually active or progressive. Our values may be Heraclitean, "kaleidoscopic", and "gyroscopic": adjustment, change, and progress may be essential, and they may forestall decay and pathology.

Despite sour attitudes and popular delusions, everyone wants the benefits of progress (and so the thing itself). Saints "vanish". Take eg growth. It is very easy to condemn growth. Youth may do so because they are lazy and

enjoy criticizing their elders and distinguishing themselves from a "mistaken" past and a past that serves as a kind of scapegoat. Compulsory things are understandably disliked, and work falls in this category. But, of course, work provides the means of enjoyment, and work can be pleasant once the initial tensions associated with it, and its requirements, are transcended, and it is embraced as inevitable and neutral. Intellectuals of various sorts condemn growth for all kinds of neglected reasons: the traditional opposition of the intellectual and the businessman, the dependence of the intellectual or the artist upon the businessman, the excesses and abstractions of intellectual idealism, the traditional or new role of the intellectual as critic, and the inevitable difficulty in finding and taking a fair and balanced position. Those of established wealth and position may find reason for opposing growth in the real or supposed opportunity this allows for the stabilization of their advantages, thus explaining what at first seems the paradox of their stand. The politician can gain by currying the favor of the democratic tide, and by the seeming virtue of the absoluteness of his views. Theologians are able to profit because of the pretensions of their profession to deal with higher things. Lawyers stand to win clients and cases. The mass media has always taken pleasure from a similar pretension to higher things, and from a role as critic and venal demagogue; into the ranks of journalism have gone, quite selectively, the apathetic and antagonist of business. Labor leaders concern themselves myopically with the short-term profit of their gastric rank and file and disregard the visionary compound interest of reinvestment in capital growth. The vision of growth remaining distinguishes, or distinguished, a few solitary businessmen, who are now hopelessly outnumbered and cynical.

This problem is characteristic of many other situations. Journalists have always preoccupied themselves with sensational and bad news. Good news is not good news. The world is immensely complex. It is possible to step out in it and find material strengthening or creating any point of view. The public, and everyone else dependent on these journalists, then makes the crucial mistake of failing to discount the reportage on the basis of its terrible selectivity making use of an infinitely complex, and unfamiliar, world; the size of the sample space is hopelessly forgotten, and conclusions are formulated that would require infinitely greater sophistication. Novelists chronically treat the future by portraying flawed, horrible, enigmatic, incomplete, discomforting, and doomed worlds to come--even the utopias are done with critical bias or points of view. Few people have the ability and make the effort to look equally at the two, many, or infinitely many points of view which are essential to understanding any such large conception as that of progress, and they forget this essentiality. Few realize how dependent feelings are on habitual, artificial, or careless attitudes, how dependent perceptions are on arbitrary or questionable perspectives, and how dependent even concepts are on highly ambiguous and difficult assumptions or preconditions. Moreover, few realize how schizophrenic and self-contradictory, or compromising and inverse, most human attitudes and behavior are--condemning litter as they litter, waste as they waste, hate as they hate hate, &c. Few bother to explore mentally or actually the consequences and implications of their passing stands, even qualitatively. Few have any notion what behavior, society, rules, things, and systems should, could, might, or must replace their general or personal norms--the sine qua nons for advocating any changes. Few have any or accurate world or historical perspectives, lacking eg any conception of the defective conditions that preceded the world as it now is, and to which it might return, even ideally. The past and the future are chronically idealized, and the grass is always greener on the other side of the fence.

The world is beset with difficult attitudes that may condemn progress for no good reason and yet themselves quite arbitrarily blacken the world's picture.

The destruction of the work ethic can lead to dissatisfaction with one's job and the world related to it. Diffusion of this dissatisfaction can lead to prevailing discontent and more radical dissatisfaction. The economic system, delicately and dynamically balanced, can break down. A downward socioeconomic spiral can gather momentum and exhibit a sinister reality. The world may proceed to a nadir or appear everywhere through dark glasses. Man in his nature seems to require an external pattern which he can fear, hate, blame, ridicule, and oppose. This pattern is often the norm, especially a past or partial norm--the theme of other souls. Human progress often presumes belief in progress, or consensus. Many acts require a miraculous belief in and affirmation of them; doubt can be fatal. Many social problems today are, as matters of degree or kind, projections of fears, a social or psychic mirror. Attitudes often tend to extremes, exaggerations, fancies, self-realizations, blind advocacy, metaphysical permanence. It is a little like "speculation".

We cannot foreknow where we want to go (see "Our direction...", above).
 (1) Those who want to foreclose or redirect progress just have not the needed or sufficient evidence or reasons for their positions; their case is not decisive. (2) Alternatives conflict. (3) Alternatives overlap. (4) The rate of emergence of evidence pro and con, of alternatives, of consequences, &c indicts premature conclusions or redirections. (5) Above all, it is impossible to properly comprehend and evaluate possibilities until they have been suitably experienced and realized. The capacious world is patient. The case for progress is thus at least provisional.

Progress may be infinite (contrapositively). E contra to the view that possible or imminent progress may be finite or diminutive is the automatic corollary view that it may be arbitrarily great, or infinite. Yet this is more than mere logic for the view is consciously or unconsciously prevalent that we already are entitled to some position about the nature, dimensions, consequences, and limits of progress, a regular and typical position concerning what it is about and all it can possibly mean, such that we can act responsibly by curbing or redirecting it. The fact is that it is possible or probable that any problems current to the world, or foreseen in the future, hypothetically attributable to progress are such that probably, possibly, or surely these problems will be solved or transcended by modified or continued progress and cannot be ascribed to progress essentially, quintessentially, or terminally, nor even to any particular phase of progress. Things of incalculable and decisive importance, excellence, goodness, and kind are surely immanent in progress and dependent on its pursuit, and meanwhile outweigh conventional or decisive objections to progress, especially those which view it as an unmitigated evil and a superfluity.

Progress may be unqualified (progress, sub specie aeternitatis, may be progress). Essential progress might be virtually unblemished, the blue of the sky and the light of the day. The set of objections to progress might be entirely wrong, and not just in part. Mistakes attributed to progress, like computer mistakes, may represent but guilty human error, possibly even a failure to embrace and lovingly assist progress. The particular view that the net result of progress is neither good nor bad may err, and progress may be mainly and uniquely good, constructive, and right. The important point is that this viewpoint may be as legitimately teneted as its opposite or as the neutral view. There may be something like destiny or the expression of the human heart or nature about progress. The background of negative consequences may be irrelevant but confusable as figure and ground. Problems created, remaining, or possible may be purely transitional, symptomatic, relative, inevitable, littler, kindred, &c. Most importantly, all that one might further as a greater design to nature and a full spectrum of human destinies may profit, profit best, or only triumph--sooner or later--through the complex evolution of progress and progress affirmed, if just because of the equilibria of mankind and the mysterious order to morphogenesis. Progress may work in secret and clever ways impervious to or destroyable by knowing interferences with progress.

Progress may well, indeed, be directed, even teleological. Mysticism is not wholly illegitimate, and mysticism may oppose mysticism. Science obviously has its finger on only a small part of the world, and insightful study of the course of science persuades one that history is spiral, the basic processes of nature and humanity mysteriously complex and ordered, and the future of science will involve the progressive recognition of this awesome complexity, order, and virtual destiny in the mechanism of things. Ultimate science and religion probably dovetail. Many things in nature work successfully and perfectly by rules of unimaginable kind, power, and efficiency, and the same can be said of man's introduction to nature. An observer beyond time might be aware of a clean or basic path, or a convergence of alternative paths, to some unique or general state of things in an era beyond our own the consequence of intermediate progress, and the unavoidable and ideal hope of all human endeavour. The unconscious reasons for our present actions, or the unseen rules and balances within the world's seemingly erratic course, may direct the branching of history or steer it on a unique and special course, or at least safeguard the world's excesses. An animal, human, or superhuman 'mind' can respectably be surmised behind the scenes, and favoring progress, despite all human recusancy and anxiety. In any case, there may well be something grand in the human equation that is to be fulfilled despite the entropic aspect of progress. Man may even be dimly or diversely aware of these things, however negligibly. For example, the very randomness, "terror", complexity, and contradiction of the course of the human race's progression into the future may be the special and unavoidable generator of man's queer and enormous self-discovery.

Quantity as quality. It may be an exercise in pure logic that doubling the human lifespan, without concomitant deterioration, would double the quality of life of a population. It may be another, that doubling the size of the population would double (in pure signifigance) the quality of life, were this also without concomitant depreciation. Historical progress would seem therefore to have multiplied manifold whatever is signifigant in the quality of life. A larger population is like a compression of time: the fruits of progress are enabled in the present that would otherwise require millenia, were they possible at all, since qualitative and unique advantages accrue to greater populations and economies or rates of progress. Superabundant wealth creates a surplus or exerts side effects that transform the landscape as middling wealth never could. Nature, a priori or corrupted, can only be disciplined if it is manned by a sufficient and sufficiently wealthy population. It can be argued that it would be safer for the next hundred years of progress to occur in 20 or 100 years than in 1000. Prolongation of progress may enlarge its risk. Defeating epidemic disease, girdling the world with trade, carrying on a scientific enterprise the magnitude of our own, eventually combatting a reverse of global climate, developing the interiors of our continents, achieving the splendor that we have in art, &c all may have presumed our socioeconomic magnitude and speed of progress. Some of these things are acts of enthusiasm one with a worship of progress. The variety and number of our goods, our homes, and indeed ourselves may represent qualitative peculiarities of sufficiently great quantity, and the justification therefor. Life and mind themselves have been defined as representing "vital surpluses", like the liberties and thoughts possible only when life rises beyond economic subsistence and knows sufficient density and complexity. So true is the dependence of modern man's fantastic achievements upon quantities--the velocity of progress, economic growth, and immensity of population--that, when this is realized, it almost seems mad to limit progress and these variables. Furthermore, progress seems to accelerate and leap ahead when abetted like a life desirous of being born, thrusting against the cage of its arbitrary confinement. The case can as easily be made that the quality of life has led as that it has lagged economic growth, despite the neglect of this fact and ambiguity. Quantity and quality are not inverse.

Progress simplifies, cleanses, complexifies, economizes, streamlines, fulfils (perfects), obeys, varies, augments, &c life. It simplifies eg by facilitating the acquisition of skills. It cleanses eg by removing zero-sum competition for survival through agriculture, engineering, automation, and by giving us a clearer view of ourselves. It complexifies by returning new interests to life, eg new games and occupations, and new possibilities overall for mankind. It economizes by doing more with less, eg by substituting nuclear fusion for fossil power, and jet for stagecoach. It streamlines because eg society is devoted to its own perfection, to the ideal flourishing of human life. It fulfils and perfects life eg by the ideal provision of a sufficient number of means of such excellence that human life can climb a ladder and achieve a meaningful goal in 70 years. It obeys life because life directs progress to its own ends. It varies life because it expands the possibilities for human fulfilment and endeavor, promotes the human adventure by modulating the whole world and moving it elsewhere with time, and enables the mosaic individuation of all of mankind. It augments life because it realizes a cornucopia, creates a universe of supreme delights, and a million paths between, challenges real human greatness, entertains the insatiable human mind, and (potentially) maximizes the adventure in the human equation. It is therefore apparent that progress constantly and cumulatively expresses itself in highly subtle ways, and constitutes an unappreciated background to human history, and matrix out of which the future may grow. The benefits of progress are often very simple and even inevitable. Even if human existence is meaningless (and this seems a fatuous question), progress "does its thing".

The fear of progress is panophobic. Man fears everything to some extent, some people more than others. Because progress is so large or general it can be blamed for everything and be the recipient of human emotions, even if these emotions are totally irrational and eternal, aspects of our physiology. It has become customary to speak of a "modern malaise", a holistic anxiety reflecting our milieu or prospect. Yet such anxiety, metaphysical despair, angst, &c may be part of human nature, regardless of what it attaches itself to; indeed, valid causes or reasons for such feeling are at least, or even more, identifiable in past ages--likelihood of early death from some dread epidemic disease, chance of punishment by one's lord, fear of crime, fear of loss of income, fear of husbandly brutality, &c--and modern unhappiness may to some extent represent the paradoxical effect of affluence and security. In any case, progress is too big and unsizeable a thing to fear it absolutely or overall. Withal, it has now become a scapegoat and whipping boy. Simple calm, epoche, and precision should thus make a case for progress.

We must give primaverall progress a chance. "Primaverall" means referring to early spring. It is exactly where I think modern progress is at. When we speak of all past and present progress we are referring to a negligible part of that which might or should occur in the future. Thus harm is done by confusing past and future progress, both quantitatively and qualitatively, and in the most various ways. Again, progress may well be self-acceleratory, even explosive. We may well, for good reasons, stand right on the edge of a stupendous surge of progress, just as we may be on the edge of realizing what all the past would have looked at as utopia, as the eschatological dream; that is the way it looks. But it actually looks as if we the human race are on the verge of something infinitely greater than our dreams; in fact, something literally infinitely important, and thus having religious significance. It also looks as if nature, and thus science, may be infinitely complex and infinitely challenging, rather than finite and simple as once or still thought; Heaven may have many or infinitely many levels. By contrast all current human concerns and purposes seem of infinitesimal consequence, and the present world seems a sliver of nothing. It is actually quite silly to suppose, as many do, that science has revealed her shape to us, or is near exhaustion, and that the future of this planet looms clear and foreseen; the future has always been surprising and bizarre, inexhaustible in essence. Progress seems, far from a sapling, but a sprout, and we would do well to delay her harvest. It is difficult to form any useful notion of the size, shape, and qualities of a mature tree from a day-old seedling. Yet it is clear that progress contains the germ of an awesome majesty.

Progress having many levels, dimensions, and aspects, its condemnation supports a fallacy; it has a kind of ultimate ambiguity about it. (Is the good unmeasured --tenebrous, distributed, impalpably elusive, contigative and textural, "eternal"--?) It is seriously to be doubted that many, especially the absolute and fanatical or the more visible, critics of progress have looked over the entire world and recent period of history and taken precise comparative and sum inventory of all the general and specific instances of possible rise, fall, and invariance of standards, and the highly complex specific formulae requisite to cutting across the rivalry of dissonant views of progress, related to all these things, formulae including the dependence of perceptions of standards upon arbitrary or correct attitudes--yet this divine clarity seems essential! It is manifest that standards within or between areas--eg music vs visual arts, sports vs arts, foods vs sports, television vs science--may be countercurrent and unrelated, or reciprocal. Often a period of such substitution involves a mutual or illusory dip. Revolution in a field such as the arts may combine the feeling of falling standards. The significance and worth of art, like its nature, may be ambiguous owing to trade-offs between difficulty and appreciation, unfamiliarity and appreciation, novelty and sophistication (eg in early development), exploration and culmination, self-negation and consequent reaffirmation, &c. Cheap food may be justified by the temporal values of a culture and even by its subjective preferences. Cheap new food may be basically healthy or sufficient. Navigation of cars may substitute for sport or fishing, and, as McLuhan intimates, the art and pleasure of driving a car--the science and metaphysics and religion--can actually equal or surpass more usual and recognized forms of these things; certainly these values and transformations are nowhere formulated and quantified in familiar criticisms of "progress". Man, content and healthy as a result of progress, may no longer require equivalent standards in the successful composition of his life, eg as a result of the removal of stresses, burdens, ignorances, struggles, miseries, afflictions, conflicts, needs, and other defects and deficiencies. Modern man's thoughts and concerns may be operating on a far more abstract plane than in the past, and the state of the environment, manners, morals, fine art, religion, &c may no longer have the significance or the general importance they once did; more elaborately, abstract may substitute for concrete, and concrete for abstract, or the like, in the equations of the moment. How does one compare horse and car, or one's car's mileage with the land per dwelling, in evaluating the drift of standards and the consequences of progress? If progress has created a momentary shallow or Hell, it is worth remembering that destruction prepares the way for rebirth and may even elicit it as a proportionate compensation. Too, times of renaissance are often times of crisis, conflict, malaise, decay, skepticism, and upset: the historic world has shown a remarkable equilibrium and confusion. It may be one's very critical criteria--oneself--undergoing change or replacement; who knows the residual? The good may have the very peculiar qualities I ascribe to it above. The adaptability and incomprehensibility of children, of new life, may invite an important conclusion. The signs of the spectrum of changes are not enough: what are the derivatives, what is the Hilbert Space, what are the gestalten, and so on ad infinitum?!

A horror of progress can arise maliciously via a fixed or inorganic sample, for progress may succeed as an organic process of simultaneous adjustment too complex for condemnation by other than a large but partial fragment of mankind (nonconcensual opprobry; esemplastic progress--unlike dreams and models--is alive). We must be wary of the fact that, in a huge population, a small percentage of that population can be an extraordinarily numerous, vociferous, powerful, and persuasive body, and cut across many social groupings. In fact it is difficult to guess the precise importance of any such organized group due to the irrelevance of critical factors in its composition, activity, and purpose! Some "wing" of a population is bound by the laws of chance, and the sorting of experience, to view the world pessimistically: and certain small fractions of the total population must for the same reason be absolute fanatics owing to the accidental statistics of their experience of an infinitely ambiguous world. (Likewise particular epochs or, at higher frequencies, months, days, or moments, must see the world in a bizarre light and are apt to draw "metaphysical" conclusions from this transient view.) More importantly, the system of the world is an organic, adaptative, and adapting system that succeeds because it is alive. The distant past, the distant future, or the distant present can look infinitely forbidding, inexplicable, and not smoothly connected with the immediate present, yet this alien, mysterious, disjointed, and unbridgeable appearance may be a necessary illusion in view of the organic and growing qualities of the real world. "Esemplastic" means shaping or having the power to shape disparate things into a unified whole -- and is used of the imagination. It is because the world moving in time, and entering new realms, is esemplastic that the computer model of World Dynamics fails: nature cannot be continuously extrapolated (without seeming to founder), the world is made of men that react and innovate in incomputable ways, our world as it progresses through time probably appears amoebic, &c. The operation of a railroad engine, television set, the human body, or the macrocosm can be frightening, unbelievable, and worrisome--yet harmonious, efficient, unceasing, and necessary. We can extrapolate backward: how did 4,000,000,000 men, gigantic cities, and civilization persisting for 100,000,000,000,000 seconds come about?! These are very comforting facts, given the evidence.

Man the governor may be very subtle indeed, and his ability to cope as yet untested. This is to "vacuously" counter the suggestion that the modern world must overwhelm "puny" man due to its ungovernable complexity, size, rate, depth, and other idiosyncrasies. Such a suggestion is humorously akin to the assertion that modern society, for its complexity, has outgrown capitalism, which flounders when it is asked when this discontinuity occurred. The human mind is eternally miraculous in the powers it has to master "impossibly intricate" things, and to adapt itself to every situation. Nothing in the modern world seems for the first time to have exceeded man's sizeless powers. The modern world may groan, but it has yet to commit suicide or even repent, and the world has groaned loudly before. It is important, when comparing man's intelligence to the problem of the expanding world, to remember that the planet is governed and peopled by 4,000,000,000 highly intelligent individuals, tremendously various, and tremendously busy and adaptable--not by 1 person. This makes a difference. Man's "IQ" is obviously much greater than 100! This cooperative army clearly must function as a distributive lubrication enabling the organism of the world to adapt itself overall in the most indifferent way; because of this instantaneous and atomic democracy it may be that the world follows a directed or even teleological course, much as the "unique" mind of man is underlain by a stupendous orchestra of autonomous cells. The fact, the single unquarterable fact, is that man has yet to even be challenged, relative to the invariance of his conditions through history and his apparent promise: despair is premature!

Inevitable? Dissent is too trivial, the motors and momentum of progress are too great, the nations of the world are too unsynchronized, disagreement is too universal, doing is so much more than saying, human ways and nature are too rigid or slow to change, growth has always oscillated, a higher standard of living is too possible and attractive, human appetite is so insatiable and totally self-relative, progress is too excusable, curiosity is so great, competition is so enormous, growth and progress have gone too far too miraculously, progress is too multiform and protean, opportunities are too numerous and fine lines too inconstructible, vast progress is too imminent and immanent, progress is too coessential with life, prosperity is too fine a word, self-transcendence is too much in the heart or blood of man, ancient causes of stasis are too void and irregenerable, additional causes and reasons for progress are so expectable, the problems of the world are too many, the ultimate inevitability of progress is too plain, the independence of progress from human decision is so obvious, the partial transiency of objection is too lawful, the instability of the world is too obvious, the incompleteness of the present world is too obtrusive, the deficiency of counterarguments is too obvious, &c that "progress" may be inevitable and its opposition may be partial, futile, presumptuous, sacrificial, complicating, self-ignorant, intolerant, or even deadly.

Men are too few. One type of progress, so-called, would be increased population. Current discussion has, with almost the sole exception of the Catholic Church, been biased toward curbing growth of population over the globe. It is remarkable that only a few decades ago the fear in such European countries as England was that population would fall in the absolute and erode civilization. Actually, such a renewed fear may not be far off, certainly not inappropriate, in many of the advanced countries. These countries now have access to contraceptives and share certain attitudes toward familial and national size that could add to whatever causes underlay the older worries and decrease population faster still. The important point is that the current antinatal and statonatal bias has eclipsed the engaging set of possible reasons for enlarging the number of one's fellows and current policies are therefore apt to be both unrealistic and unfortunate. Paradoxically, a fall in quality of life attributable to a doubling of population might make a better counterargument than an associated fall by a factor of 2 or 4 caused by a quadrupling of population size. Pure logic argues that potential people have a right to exist, even if they are not around in advance to make their own case or take up arms and defend themselves; the logic is vivified by the observation that a past policy halving present population (and thus illustrating a factor of 2) would render the probability of our own existence .5--I have found this illustration of great empathetic value. Many of our current individual and political acts, such as the safety we build into bridges, embody a deep concern with ourselves and others decades in the future, and even with our descendants or posterity in general; one argument in the antigrowth debate is that we are today squandering tomorrow's vital resources, even if tomorrow is centuries off, and likewise the real risk involved in contemporary human behavior is that an anthropogenic catastrophe disrupting the world or extirpating Homo sapiens will affect, not 4 billion moderns, but a virtually infinite number over future gigennia. The brilliance of present and past technology and culture is directly or indirectly attributable to the size, growth, wealth, knowledge, &c of mankind that has marked the last 10,000 years, and commonsense declares that multiplication of these individual quantities could have greatly enlarged human accomplishment and greatly improved our own situation. The face of the Earth is largely unoccupied and undeveloped, and the overwhelming probability is that the resources and capacities of our planet will tolerate vastly increased population and industry, a fortiori if they are changed systemically in prudent ways already certain to exist. Fascinating mentalities, personalities, purposes, groups, activities, industries, "schools", societies, &c are attributable to populations of certain sizes. Again, large population and wealth effectually compress the future into the present, and such acceleration of history may actually safen development. It might be a better and safer world if the older, higher, more sophisticated and traditional societies--those with something to both teach and give the world--grow at pace or faster than the backward and emergent world (entirely apart from any unilateral, selfish arguments for such reflection). No one has rationally determined the proper--lesser, greater, or unaltered--size of human population, in any sense at all, either qualitatively or quantitatively. The diversity of national or geographic situations has been almost entirely forgotten in an absolutely antinatal debate or ideology. The bearing of this paragraphic point on the other points is plain. If there are independent or "intrinsic" reasons for enlarging human number, progress in wealth, technology, &c may be necessary or appropriate, in defiance of previous considerations. It is essential that we better understand, in a rational way, the carrying capacities of Earth and the styles, qualities, &c of life they in fact presume; modern population may represent--what is extraordinary and critical--but the square root of the potential population of Earth, satisfactorily or rationally maintained.

That the only progress is material (and eg scientific) progress. An arguable and respectable reason for progress may be that all that really progresses, or is important, is, heterodoxically, the extent, variety, and excellence of human means, understanding, power, mastery, possession, splendor, &c. Eg it may be that the flourishing and purity of religion depends paradoxically, perhaps even fairly rigorously and directly, upon our materialistic stature, eg our transcendence of nature as distracting, dominant, unmalleable, delomorphous, cosmopoietic, &c. It may be that destiny--the real future, goal, or purpose of the human race--depends totally or mainly upon our rate and degree of scientific and material progress. That destiny, ne plus ultra, ultima thule, expansion, or whatever may represent something so much better and greater than anything we know or foresee today, and yet perhaps something so coessential or natural, that the present world and present concerns may be inconsequential or totally negligible, and the "only" meaning of things may lie in that supportable vista. It may also be that so-called spiritual, aesthetic, moral, and other values may be falsely divorced from their cruder basis or content, or so closely tied to the latter as to be virtually indistinguishable. The practical result of substituting and centering on such "higher" values may be paradoxical stagnation, retrogression, or worse fulfillment of such values. One

need not be cynical or biased to believe these things. The world is by nature, or by habit, paradoxical. Indications are that modern standards of living and qualities of life are actually tremendously better than those 100, 1000, and 10,000 years ago, and are such as a direct and proportionate (or disproportionately great) result of progress in our material conditions. It is easy to dissociate physical and moral progress, and sometimes difficult to reassociate them in an accurate way; man is proverbially blind to his advantages and thankful to his benefactors. Last, a superb case can be made that the vulgar concerns of mankind--mere well-being, virtue, idealism, even knowledge--are relatively or absolutely inconsequential against the exiguous or unique background of the height of insight into possibility and the progress thereof, which may be uniquely dependent upon material and scientific progress; of course this is, if anything, God's view, and perhaps surpasses current human understanding; and yet it makes a point. It may be that we are fallacious to look for and regret the absence of moral and other progress: these may be invariant, proceed at their own rate or in their own way, or be virtually independent of, and not connectable to, scientific and material progress or conditions; their basic progress may be of such kind that any, or our present, efforts to, or concern with, progressing ourselves may aggravate things and be contraproductive--men are notoriously intolerant and contemptuous of each other's standards, and notoriously incorrigible (man does not reform, he distorts or transforms; man does not transform, he reforms). Material wealth increases man's "degrees of freedom"; it is up to man to master and exploit his new freedom. Civilization is probably the child of progress but it is an awkward and casual child; and yet its growth probably requires nutrition.

It is only by progress that we find what we should progress, degress, or hold to ("progress" also means "tour")? (Is progress metamorphosis?) The important point here, touched on already, is that inherent in progress is a kind of self-exploratory adventure, and possibly also an experiment designed, in effect, to determine the intrinsic value of progress apart from consideration of its linkage of specific origins and ends, or stages in the history of mankind.

The benefits of progress are so far unaccounted and unappreciated. No one has constructed an inventory of the peculiar and total goods that progress in general or qua progress has produced historically or cumulatively as of the present time, nor has anyone used this for going on to construct a proper balance sheet comprehending profits and losses. One's impression is that progress has achieved a tremendous amount of gross and net good, for which it is not honored. Today's health, lifespan, happiness, wealth, opportunities, means, &c are not appreciated for their transcendental contrast with former human existence, but are instead seen in a "flat" way and relative to residual dissatisfactions. Few men even have any notion of how and why we might "progress", and so it is inevitable that benefits attained and problems overcome signify so little to most men; indeed, lacking desire, ambition, care, and justificatory philosophy, why should we progress--the act is meaningless. There is a great problem and issue here that reaches much deeper into the earth than the quick opponents of progress might suppose. There is eg some neglected wisdom that says that human happiness is one with gratitude, care, striving, perception of the world's tragedy, limitation, and abstract glory--some wisdom uniting possession and understanding, work and fruit, triumph and discipline, peace and diligence, satisfaction and fineness, and the like. Such wisdom, where and as present, might stand to gain from progress, and be the better approximation of beauty and truth. We men lack some vision or knowledge of the structure, dimension, course, origin, and end of progress; the things must be weighted. How much less grueling is work, how much greater is our means, how much freer are day and year, how much fuller is our home, how much more human is our environment, how much safer is our food, how much more fulfilling can life be, &c? Above all, there are probably extraordinarily subtle and strong benefits of which we have no inkling.

Radical changes and new worlds require characterological adaptations and mutations in men and mankind (including new men) so far unrealized (even culpably). The age ushered in by scientific, cultural, economic, and social changes has either disoriented everyone or presented a challenge to him to accomodate his new conditions and opportunities. It is a truism that we contemporaries suffer from crises of identity, role, lifestyle, purpose, and belief, and suffer acutely for it. What is new is not understood, and what changes too completely, abruptly, and frequently can prevent that interweaving, settling, permanence, and certainty without which life cannot be fulfilled and hence truly happy. Urbanites may resist with horror transplantation to the country that seems by contrast so idyllic. Preference for apartment over home, like home over apartment, seems sheer and crucial habit or use. World population seems disturbed by two causes: flux itself and the novelty of flux, however indistinguishable. The latter may, no matter how wild, be a function of our crucial place in history as an age of instrumental transition. The former may prove temporary as man adapts to a greater scale of permanent change and the subsidence of many complex traditions.

Nihilism, nostalgia, inertia, indulgence, and indifference may represent moral failures of every man to react positively to modern conditions, changes, and possibilities. Odd though it sound, much of the trouble of the world may be its own fault. This may hold especially if the supposedly objective state of the world is deeply subjective, a failure of hope, mental fixity, devotion, courage, and belief. In any case, complementation of scientific and material progress by progress in the character, attitude, and sociology of men--perhaps occurring inevitably, later, seperately, or subtly--may rectify progress. Halting material progress now might not stabilize or remedy current problems --both may be irreversible--and the stabilization might be undesirable.

THE VISUAL ARTS

The arts are an especially interesting place to look for fluctuations in standards for they are variously said to mirror the present, mirror the future, and cast the character of society as agents in its making. Too, laments are common that the arts have fallen in the standards they now exhibit.

The claim of fallen standards is hard to evaluate because an effort to reflect on the history of such a fall instantly encounters the significant problem that the length into the past over which the fall has presumably extended is enormously ambiguous, and one knows that these lengths involve the additional problem that many falls and rises--regular or irregular--will bear on any greater or merely new tendency of "standards" (whatever they be) to fall. The nostalgic and erroneous romanticization of "the past" is a universal fallacy with respect to all sorts of standards (see eg The Good Old Days--They Were Terrible! by Otto L. Bettmann). It is a truism that "art is before its time" and so incurs contemporary rejection, so a romantic view of the past is itself standard.

Some of the general reasons for the rejection of recent art, and a supposition of artistic decline, can be named. It is (or it is alleged to be): abstract, simple, artless, meaningless or incomprehensible, professional or theoretical, vulgar, sensational, cynical, uninspired, negative, incomplete, ugly or unpleasant (eg sadistic and masochistic), maniacal, sick, imitative, faddistic, cliched, 'depthless', 'artificial', 'unintegrated', childish, directionless, random, illusionistic, &c. It is, however, important to remember that what we think of as characteristic past art is highly selective: the best men and the best creations have surfaced and been centered on, these (or past tendencies in general) have been 'theoretically explained and justified' in an advantageous and illuminating way, times and places in the past (rather than the absolute and global past) have been centered on, aspects discomfiting to the contemporaries of past art have lost their bothersome qualities by the historicity and total remoteness of that art to moderns, so that the art is now seen and appreciated as part of a larger historical process whose high 'color' derives from the spectacularity of an impersonal mosaic.

One possible excuse for modern art is that the enlargement of the number of contemporary artists, the visibility of the cumulated art of the past due to mass publication, the fertilizing abundance of new means and stimuli, the instability and rapidity of our times (its pace and crises together), the proliferation of artists (especially of lesser innate talent) due to the increase of leisure and mass education, &c has exaggerated the differentiation of styles and messages, often trivially and defeatingly, and this 'compression of the future' into the present has stimulated the impression or half-impression that standards have been on the decline, justifiedly and unjustifiedly.

This is the age of science and technology, the age of exhaustion of pure possibilities and of fascination with the possibilities present in the life of societies. The scientific or 'abstract' outlook has bred a wealth of new art of its own kind. The normal, the real, the partial, the abnormal, the possible, the surreal (for science finds itself in complementary antinomies and in whole spectra of possibilities), the supernormal, the transcendental--these and other themes have been pursued ad nauseam or ad infinitum, and it is understandable that the results have been, inter alia, a numbing saturation, a rejection by publics, an abundance of failures, an abundance of nihilism as simple artists exceed their own cognitive powers and are captured by an irrational (often insulting, negating, exploitative, artificializing, demoralizing, argumentative, &c) magic.

One criticism and defense of modern art is that it expresses the scientific or intellectual realization of the infinite hierarchic, informational, and aspectual complexity of everything that exists--a truth at once marvelous and dangerous. It embodies the realization that the world is not what tradition, commonsense, perception, intuition, accustomed theory, stereotype, &c says it is--infinities of possibilities embrace the singular realities, and structure has many or infinitely many levels. Yet this infinite-dimensionality and specificity has an enormous tendency to be misunderstood and abused, eg by a distortion of the organic, an ignorance of the whole of life and the enduring realities, a confusion of complexity and uncertainty with nothingness, a satisfaction with inconceivable trivialities, a divorce of fantasy and reality from each other, a conviction of worthlessness, &c. These misunderstandings have greatly scarred modern art.

SUMMARY:
THE GOOD OLD DAYS--THEY WERE TERRIBLE!

The good old days were good only for the privileged. For the majority they meant a life of unremitting hardship; neglect and exploitation. Forgotten are the hunger of the unemployed, the despair of the aged, the insane, and the crippled, the crime and corruption; pollution, addiction, urban blight, and educational turmoil are not new. The retrospect is that we are going forward, but slowly. Streets caked with animal wastes and the oozeings of clogged sewers, and littered with the overflow of uncollected garbage piled on the sidewalk. Emanating stench. Confusion and stench from pigs roaming the streets. Horseshit paved streets, radiated stench, attracted hoards of flies, and dried into a sharp, piercing powder blown into clothes, furniture, and nostrils. All-pervading, violent, obscuring, endless, irritating, nauseating, moribund, depressing, and unbreathable industrial smoke and stench. What garbage pickup existed was capricious and inept, lined the streets in ridges, spilt onto the unnegotiable and rain-beslimed sidewalk; the situation reflected overcrowding, commercial and domestic cross purposes, and lack of regulation overwhelming the meager facilities. Wind dirtied home and eyes. Summertime unbearable indoors and out, period clothing increased the misery, delirium and sunstroke common, deaths could occur in a city heat wave by the 1000; windowless, unairconditioned rooms; slums pitiable, the poor fleeing into streets, the nights brought no relief but only a still, sleepless languor and apprehension for the morrow. Chicago: fetid and greasy river, air-pervading stockyards. Pittsburgh: barrage of soot, ashes, and glowing embers; habitation and factories unseparated, smoke belched into windows, clothes uncleanable, workers' lives controlled and enslaved, backyards thick with mud and strewn with beer kegs and rubbish. Cities of West: dirt, shit, flies, urine, streets became ooze in rain, rotted wooden sidewalks, polluted wells. Traffic jams with stages, carriages, cartmen, expressmen, and pedestrians agglomerated; frantic pace of men. Inferno, rolling icebox, pickpocket's paradise horse-drawn streetcar with packed and standing passengers suffering insolent conductors and the smell of unwashed bodies, beery breath, and tobacco juice. Uncrossable streets; underfed and nervous horses, often flogged to exhaustion by pitiless drivers who exulted in pushing ahead with utmost fury, defying law and delighting in destruction; runaway horses common; the horse-associated casualty rate was 10X our car-associated rate. Steam railroads often went right through the center of town, immolating pedestrians and horses, and contributing din, smoke, and vibrations. El: rattling and screeching was painful and exasperating, creating insomniacs; ashes, oil, and cinders fell on pedestrians underneath; ugly, dirty, depressing, slow, unreliable, packed passengers and in rush hours played havoc with traffic. Snowstorm havoc in the city: slowplows were triumphs of awkwardness, blocked traffic and got stuck, did not remove snow but shifted same onto the sidewalk, impeding pedestrians. Continually impeded by traffic (esp the compresent pace-setting horses), new electric trolleys contributed to snarls, and seldom reached their 20-25mph design speed; monumental tie-ups occurred daily; unattractive jumble of overhead wires, winter danger of their electrocuting horses; the 5¢ fare (10¢ for El) cost low-income travelers almost 10% of their pay (<25¢/hr pay). Townhouses: stuffy, difficult to maintain, and occasionally injurious to health; windows permanently shut against redolent air, but the indoor air comparable and unventilated; sewer gas from primitive drainage systems posed a constant peril to health, and dampness and odors plagued the homes of rich and poor; the indoor air befouled further by the standard coal stove's soot and dust; central steam heat finally became a costly alternative but suffered from water hammer and hissing; Victorians seldom bathed, in 1882 New York only 2% of homes had water connections, these probably leaky or (attached to a stove) dangerous; regular chores were a grinding toil; servants were hard to get. Tenants are now protected from landlords by law, but 100 years ago he was vulnerable, ignorant, and utterly misused, eg no court papers were needed for dispossession. Boarding houses offered a nonideal alternative but injured rectitude; New York in the 1870s was one vast boarding house. Middle-class apartment houses were crammed, their apartments diminutive, smells and noises were not insulated for, garbage removal and sanitary facilities were wretched, the houses were firetraps --between 1870 and 1906 four US cities (Chicago, Boston, Baltimore, San Francisco) burnt down. Laborers lived in shantytowns in Pennsylvanian coal fields, towns strewn over the landscape like so many abandoned, rotting crates; formless squatter encampments came to surround NY, built of discarded boxes and construction-site refuse. Slums: dungeonlike tenement houses in NY, inhabitants beset by grinding poverty, filth, and disease, drunk, bestial vile...steadily sinking, parents became demoralized and children depraved, fever perennial in its toll; the pitiful wreckage of slums lacked sanitation, drainage, ventilation, light, and safety; between 1868-1875, estimated that 50% of New Yorkers lived in slums, as many as 8 persons sharing a 10x12 living room and a 6x8 bedroom; vile privies, dirt-filled sinks, stairwells with slop oozing down, children urinating on the walls, dangerously dilapidated stairs; plumbing pipes pockmarked

with holes emitting sewer gases so virulent as to be flammable; at the bottom of the vertical hierarchy were the cellar dwellers in repositories of filth washed from the street and caking a floor shared often with goats and pigs; the rent of the period/sq ft was 25-35% higher than that of apartments in fashionable uptown NY--squeezed by merciless slumlords; the slum child became an animal; disfigured by the bestiality of home, 1000s of urchins roamed the streets (an 1880 estimate had 100,000 loose in NY)--cunning, predatory, with an instinct for survival that rivaled an alley cat's, they slept under doorways, in discarded boxes and barrels, they fought, blasphemed, begged, and stole, and in the end gravitated to prostitution and crime. Rural life: unrelenting hardship, families toiled 14 hrs/day merely to subsist, in an unpicturesque landscape; during the 1870-1900 economic stress, few small and middle farms exceeded subsistence and many were foreclosed; in place of a neat rose garden, an expanse of muck and manure surrounded the farmhouse, sucking at boots and exuding a pestilential stench attracting swarms of flies, ticks, and worms; the elemental task of survival precluded hygiene or sanitation, and the punitive winter brought with it isolation and a terrible loneliness; the primitive and crowded country kitchen served equally dining, living, and washing; the fireplace was hazardous with searing heat and darting flames; laundry was punishing and involved lugging huge kettles, building an outdoor fire, doing without machinery or miracle detergents, piece-by-piece reduction of farm-filthy wash by hours of beating, rinsing, wringing, and hanging; the young wife soon acquired callused hands, stooped back, and careworn features; wells received the infection of all sorts of noxious matter; buzzing, biting bugs plagued day and night, windows lacking screens; windows closed in winter caused rooms to become choked with noxious fumes; bands of drifters and lone bums, living by theft and begging, roamed the countryside and brought fear, fires, murder, and even abandonment of homes; suburban districts of NY and other towns were not considered safe for children unless the police protected them from wandering bums; farmer's sons and daughters were from childhood routinely assigned multiple chores that filled their nonschool hours and limited their intellectual growth; farm children were notoriously immature since bodies developed but not minds; in the 1880s close to 40% of farmers were but tenants, their shabby property reflecting debts, despair, and lack of pride; produce monopolies and railroad monopolies, the need for competitive mechanization against falling prices and outrageous freight rates, drove 30% of farmers in the 1880s to mortgage their land; farmers were impotent against mother nature (fierce winds, storms, insect plagues, prairie fires); the bleak West was haunted by loneliness and despair --nowhere to go, no one to see, nothing to do, no relatives, no friends, dismal evenings, endless drudgery, restless cooped-up children often kept from school by weather, winter intensification of isolation and frequent confinement indoors amid deathly silence or cruel winds; many settlers went insane (yet today city loneliness is a cliché); parental old age destroyed by desertion of their children to the city (pay better, life one's own, gamble attractive, prospect of new friends and experiences, the satisfaction and maturity possible from self-reliance, the myriad stimuli, the chance of romance and wealth; drawbacks included forced menial work or crime, drudgery, &c). The US worker today has dignity and protection, but 100 years ago he was poor, debased, unprotected; profits were enormous against meager wages, never have the rich been richer and the poor poorer; virtually unopposed by any unions, employers hired and fired at will; the huge labor pool, augmented by countless immigrants, caused rivalry for the worst jobs; a hellish 12-hr day in a steel mill might earn a maximum of \$1.25 for a 7-day week and a hovel; constant danger ruined the health of many by 40, machines were set at the limits of human endurance; two shifts might work around the clock demonically; at 6 years son might follow father and enter manhood stunted; industry had a cavalier attitude to safety ("Men are cheaper than shingles...There's a dozen waiting when one drops out."); companies disclaimed responsibility for accidents, refused to install protective apparatus, and paid no compensation (courts sided with employers, and few employees could afford suit). Sweatshops: alternatives of exhaustion or starvation; mainly new immigrants; regimented supervision (eg browbeating, fines for talking, smiling, or breaking a needle), grinding oppression; standard wage yield a bread loaf, cup of tea, and a bed in a tenement attic; a garment worker could not support his family solely on his own and so wife and children were sucked into the grim cycle of working and sleeping; bread and tea the staple diet; nothing cooked, since no time; an 84-hr week/5¢ an hour; factory bathrooms inadequate, perhaps intentionally; workers machines. Child labor: parents eager to exploit, pay \$1½-2½/wk (young mine workers, exposed to poisonous dust and injury, got 25¢/12-14-hr day), even babies used; 6% of New York State's child population worked in factories in the 1880s; children were imported from other states to circumvent prohibitive laws. Layoff, a constant threat, meant ruin because what came in Friday was gone Thursday, and, contrary to popular belief, \$2/day in the 1870s was not a lot; food absorbed 50% of low incomes; many

families had only \$1/day to spend, often lived on bread alone and had no meat for weeks; wages were mostly in scrip, redeemable only in company stores charging inflated prices, and workers protesting this extortion were sacked and evicted from company homes; refusals to accept wage cuts led to lockouts; wage reductions occurred during rising profits; with few exceptions, strikes proved calamitous to labor; hired armies forced workers to yield; authorities' attitude toward strikers was only punitive and the public agreed; there was fear machines would replace men; the dehumanizing aspects of the assembly line are still hotly proclaimed, even tho it has increased workers' prosperity and leisure time. Crime: the lawlessness from the 1860s through the 1890s was "an American phenomenon with no equal in the world"--population rose 170% but crime 445%; NY was known as the world's center of crime with an extravagant toll of murders, assaults, and robberies; the slums bred what moved into the business and residential areas; contemporaries developed shame and alarm; lack of well-lighted streets, absence of laws against concealed weapons; murder quadrupled in Chicago in less than 20 years, and in 1893 her arrest ratio was 1 per 11 residents; less than 100 years ago--prior to telephones and squad cars--the public mood about street crime was unflagging pessimism; NY streets turned little toughs into major outlaws; gangs proliferated; juveniles were imprisoned aside hardened criminals; once a juvenile offender was caught, his fate was sealed by exposure to the brutality of prison and reform school; adults and children alike were locked up on the slightest suspicion of misdeed, nurturing in the young disrespect for the law; wayward children were treated as adult offenders; today's basic confidence in the cop was largely absent--most thought of them as ruffians who constantly guzzled free beer; brutality and graft typified police, and their appointments were political; forces were chronically undermanned and lacked today's technology to respond swiftly; the policeman used to be in love with, and but, his club, which was used with relish on suspects, drunks (whom he thought little of killing if they resisted arrest), and even persons in orderly crowds; prisoners at station houses were brutally kicked and maltreated, even beaten as normal procedure to render them credible in court; police juggled statistics to mimic low-crime areas; forces were political, not professional, and kickbacks and protection money were typical; police colluded with scoundrels; legitimate business paid for nonharassment and organized crime for protection; the system was impervious to reform; all police transactions were bribeable; the NY Police Dept. was for sale (patrolman's job cost \$100, captain's \$1500); prostitution was protected by police, massive (about 3% of New York's population was prostitutes in 1890), and encouraged diverse crime in the houses; politics --federal but especially city--was thoroughly corrupt, "the conduct of public affairs for private advantage"; Tweed Ring robbed NYC of \$160,000,000; all services were pilfered, all important city jobs were sinecures, favors were for sale in every department, cities were terribly ill-run and boss-ruled; lower-court judges were of low caliber and boss-influenced; judges were merciless on the poor and helped the rich; boss-protected gambling, liquor, and vice operations were carried on with impunity, and large corporations tampered openly with the courts, paying off judges and juries; certificates of insanity could easily be had to legalize burglary, arson, or murder; the Mafia flourished; prisons were strictly for punishment by medieval excesses, prisoners were considered subhuman; starvation, floggings, chainings, and torture were blandly routine; negroes especially brutalized; owing to court corruption and incompetence, many innocent and deranged were imprisoned; there was an epidemic of lynching in the late 19th century.

The Good Old Days run in reverse.

The preceding depiction of what the past was actually like, by a septuagenarian, is especially interesting in that almost all the general ideas touched on by Bettmann invite being extrapolated beyond present accomplishment and into tomorrow: progress can continue! The things touched on often have involved relapses, neglects, imperfections, side effects, and novel possibilities that amount to opportunities for major progress in future times. By the way, Bettmann describes the US, especially New York City, and especially roughly the period 1880-1900. His treatment is subject to criticisms: aspects, instances, times, places, things, views and attitudes, contrasts, &c are almost completely selected to suggest his (a particular person's particular) point of view; his evidence is qualitative, not quantitative, and certainly the very opposite of being free of ambiguity; inconsistencies appear in his own pages; the feeling that many of the phenomena are oscillatory or repeatedly fluctuating, rather than illustrating any specific overall and characteristic trend, is strong; often the "offenses" occur to one as having an appealing or totally excusable aspect; overall, one is left largely without any confident picture as to what the past was really like, even in connexion with the author's thesis; one often wonders whether alternative selection of "present time" and "past time" might not drastically alter the appearance of things, and whether the epoch to which Bettmann refers was not unfairly idiosyncratic, eg a unique time of stress and development, eg vastly inferior to an earlier time of progress or a pre-industrial time (which might variously excel the present, even as a result of the extreme subtlety of factual "quality of life"); Bettmann must have been sorely tempted to choose the very worst facets of the past, and past recorders of their period (or sources of memorabilia) must have been similarly selective. Despite this, The Good Old Days successfully persuades one of the fact, importance, magnitude, strength, universality, continuity, basicity, inevitability, desirability, and modern and current underestimation and undervaluing of progress, and that the previous faith in, glorification of, and pursuit of progress was and is, perhaps now a fortiori, justified; secondly, it equips one with a deep realization of the artificiality of human attitudes and the degree of human gullibility (given current rejection and detestation of progress, and longing of romantic pasts and supposed future alternatives); thirdly, it successfully teaches one the variability and improvability of the world, things, and standards; fourthly, it removes, in these ways, the artificial mental and emotional limits one clearly, consciously and unconsciously, has been imposing upon the possible future (ideals are advanced, seem more accessible, and the future seems more "open"). One must be careful to remember, however: a) that the degree, rate, kind, &c of past improvement (in the things and standards reviewed by Bettmann) are, applied to the future, inadequate (the future may arbitrarily surpass past progress; moreover, Bettmann's sample of areas of past progress obviously was narrow and personal, and likely omitted some of the most important things because of their excessive subtlety), and b) all new kinds of progress (perhaps especially in the "neglected" or "quasi-neglected" moral, qualitative, esthetic, sociopolitical, "vindictory", &c domain) will appear in the future (and perhaps at an accelerating rate; moreover, the "size" of the future --its infinite time scales, amount of wealth per capita, size of population, and acceleration of discovery, invention, innovation, perfection, &c--admits of no finite description). The Bettmann book is the most encouraging book about the present and progress itself that I know, the best transformer of pessimism into optimism. (It is 2/3s pictures, however, and a picture is worth 1,000 words.) One reflects what a pity it is that others have not documented the movement of standards in the history of the world and the overwhelming progress of the past 10,000 years! Critics of progress must, at minimum, confront and answer this book.

By listing the specific things, classes of things, dimensions of things, and overall patterns to which Otto Bettmann refers it is possible to set forth a tentative suggestion of the probable, possible, specific, overall, simple, complex, exhaustible and inexhaustible, proportionately and disproportionately important, familiar and novel, ambiguous and unambiguous, unique and alternative, homogeneous and heterogeneous, direct and indirect, larger and smaller, desirable and undesirable, imminent and distant, accelerable and inaccelerable, permanent and impermanent, analyzable and unanalyzable, important and neutral, conflicting and compatible, monotonic and nonmonotonic, complete and incomplete, evidential and conjectural, &c dimensions of future progress. It is exactly such a framework that planners and people in general need to visualize, understand, affirm, sort, interrelate, measure, weigh, order, value, &c pieces and the whole of progress, and to abandon our current morass. We can get an encouraging sense of what we can yet do to make things better than they are or have ever been, and of what we should do, of the degree of good inherent in such progress; we can to some extent explain away the ills or limits of the current world by showing how marginal progress has been in the absolute or relative to future prospects; we can

see how progress can be directed to the solution of specific, often needlessly aggravating, residual problems; we can order our priorities and henceforth derive faith and optimism from consciousness of the schedule and course of ongoing progress in a world that is not refractory; we can get a better sense as to the nature of problems associated with progress by seeing explicitly the dimensions--eg "avenues"--of progress; we can get some feel for the nonlinearities--the "wobbles", "obliquities", and "loops"--associated with real, as opposed to ideal, progress; we can become responsibly aware of the emergent destinations of progress that have to be paid for by preceding generations' labor, suffering, specialization, doubts, sacrifices, investments, faith, &c; we can acquire some feel for or even picture of the puzzling but overwhelming "morphogenetic process" at work in the world to push it forward and over the hills, and to release its dormant promise; we can develop a better idea of, and philosophy for, the attitudinal relativism of views on our world (for the sake of erasing needless pessimism and for the sake of establishing intentional positivism of a realistic kind) and extricate ourselves from any false and self-indulgent dread, guilt, resignation, "acting out" of convictions, &c; we can prevent any excessive (and "reactable") satisfaction with past or future increments of progress or types of progress; we can pursue progress with the vigor, focus, expertise, intent, planning, unanimity, determination, conception, conviction, &c which it deserves; we can better identify problems in the present by analogy with the past; we can concern ourselves with full, perfect, and holistic progress instead of the accidental, fragmentary, purposeless, undirected, and divisive progress of the past; we can maximize the rate of, and "saltate", progress; we can better understand the inequities in progress, and the extent to which progress so far is a ridiculous hybrid of material and factual progress with wish and fancy, ie a hypocritical abortion and a misconception; we can better understand the progressive intertransformations of things; we can better understand and solve the sources of our discontent; we can better, or totally, answer the critics of progress; &c.

Traffic. Traffic remains a problem. Roads, walks, and spaces remain congested. Of course congestions and jams are sources of entertainment and are of interest as sports and games. People like crowds. Even with our present resources, however, traffic problems seem inessential and the result of poor planning or the absence of planning. Air congestion at airports could be solved or greatly helped by future automation. Airports could be multiplied and located further out from cities, and yet be more convenient, if they were coupled with enormously faster and more efficient systems of commutation with the city or its domains, systems which seem eminently feasible; these systems could ferry men and freight at hundreds of miles per hour. That part of congestion related to intermediate travel between (eg suburban) home and city center would seem perfectly amenable to a similar fantastically automated, fast, and efficient system; such a system could work if it were absolutely reliable, fabulously and yet feasibly comfortable and convenient, scale-economically inexpensive, virtually substituted for privately owned cars, perfectly maintained, "privatized" as trains have long been in Europe, operated intensely, &c. Functions performed by masses concerting in cities can be decentralized, largely or wholly: "perfect" communication (eg costless, mimicing man's motor processes, equalling man's complex and huge sensorium, totally realistic (photographic, noiseless, perfectly reliable, convenient, universally available, holographic, "cosmoramaic", "robotically movable", pansensory, distortion-free, field size-adjustable, instantaneously responsive and "unnoticeable", "omnipresent", flexible for various specializations, kinesthetic and vestibular, &c), able to "congregate" any number of communicating men or scenes, able in various ways to surpass individual travel and presence, &c) from homes or scattered "centers"; quaternary, tertiary, and even secondary and primary jobs rendered performable remotely; primary, secondary, tertiary, or any jobs rendered largely or totally automated so as to free men to jobs not--in terms of above technology--requiring bodily presence or compresence; facilities visited and used in central cities can be rendered just as visitable by nonbodily communications, or can be replaced by others, just as adequate, not requiring such presence; shopping can be made, in such ways, "stay at home"; needs met by entering central cities --or otherwise concentrating at spatial nodes--can be circumvented; &c. Even future highways and individual vehicles can be perfectly automated. Given the above, national populations can be spread more evenly over their land in terms of residence, work, and play, and the land itself can be so designed as to hide men from each other in an artificial privacy of great ingenuity. "Rush hours" can be totally eliminated (eg by manipulating man's need for sleep, systematizing all human concerns, disindividualizing transportation, abbreviating the work day, reordering the work year, enlarging the transportation system, rationalizing and expediting the transportation system, rationally redistributing sources and destinations such as houses and businesses, ad infinitum).

It is interesting considering some of the specific traffic problems Bettmann alludes to for whatever contrast they afford to conditions prevailing today, in the most "advanced" countries and parts thereof as well as in those more nearly approximating the era to which Bettmann refers (the important fact to note is that variations in conditions over the world today, "downward" from most advanced conditions anywhere, are enormous and dominant, and so alone provide powerful reason for progress, in a secondary sense, toward what is already possible and extant; moreover, the unmistakable impression one has is that conditions at the "top" are but temporary maxima, not fixed or culminative in any sense, and that the measure of inequality in the present curiously serves as a yardstick for a logarithmic measure of progress yet to occur as a future minimum beyond today's highest standards or conditions; in fact, the flaws and limitations sensible in present accomplishment on the highest plane strike one as so easily soluble and surpassable, often by such simple things as the application of taste and preferences and the slowness of time as a modifying and adapting process, that one is immeasurably confident of tremendous progress that is yet both latent and inevitable).

Thus eg the discomfort of current systems of transportation is obvious: Air-conditioning in buses is nonuniversal, unreliable, extremely unequal, enormously imperfect and partial, discontinuous with other movement, grossly expensive because so ludicrously inefficient, &c; eg only parts of the bus are helped, heating or cooling is often excessive, temperature is regulated but not sunlight, humidity, dust, dirt, noise, motion discomfort, vibration, variations concomitant on opening of the doors, &c; intended is partial or token reduction and not perfect solution or even supernormal improvement; outside noise, noise from the bus itself, and passenger noise are grossly neglected or totally overlooked; solutions are often bad, eg green windows destroy external color contrasts, provoke headaches, are dismal, absorb heat, block the outdoors, and are not light-varying. Buses are dirty and uncleaned, smell, tight, disturbingly cavelike (they should be transparently domed or gayly decked), rigidly seated and rowed, with open seating (rather than private), vibrate so as to make reading impossible or causative of headaches, are so noisy as to cause headaches, 'bury' the outdoors, and complicate or prevent conversation (even with one's adjacent neighbor, much less within a party, or in terms of semiconscious listening to the drift of societal conversation), and prevent or destroy listening to radios &c; ill-lit (both by day and night, in terms of directivity and quality--or control--of light, and by virtue of disturbance to one's neighbors); the invacatable and infinitely inflexible seats are torturous and unsuited to long rides; the noise, vibration, lack of privacy, motion, chair discomfort and unsuitability, tightness, stop disturbance, means of signaling passengers, untrustworthiness of personnel, passenger-luggage competition, nonprovision of suitable (clean, large, appropriate, perfect, &c) sleeping aids, &c make sleep impossible or horrendous, and such insomnia destroys the overall trip by ruining oneself and one's fellow passengers; hygienic facilities are awful (dirty, super tight, inadequate, uncomfortable; eg ideal showers might be provided on long trips); the interior of buses is ultracheaply designed (crude, dirty, monotonous, commercial, functional--much less elegant, spick-and-span, totally individual, beautiful, and alive with entertainment (at minimum, inspiring scenes of nature filling the walls)); there is no light music or 'light show' background, nor 'pluggable' entertainment such as the airlines' provide; buses are ill-ventilated; buslines make no attempt to provide 'hotel links' overnight, as they easily could; bus trips are not (at all, much less continuously) 'guided'; terminals are notoriously depressing, disturbing, and inadequate; it is hard to get any, much less perfect and wonderful, information on considered trips; above all, there are a million small and decisive things (of clever, thoughtful, perfectionistic, aesthetic, combinatorial, &c kind) that could character bus travel, but do not--to an extraordinary degree.

Elis and subways are still horrifically noisy, crowded, dirty, dangerous, unappealing, slow, congesting, disturbing to the larger environment, backward, inefficient, &c (such simple innovations as rubber wheels, "ultramodern" bright cars, adequate numbers of cars, sound insulation, acceleration engineered for human comfort, automation, ingratiating music in stations and cars, &c have yet to be implemented). Vehicles are still driven by internal combustion engines emitting foul vapors and noises, and piloted wrecklessly by men instead of automata. Snowstorms still reap urban and rural havoc, displace rather than remove snow, lessen rather than eliminate falls, respond sluggishly and often ineffectually, cause jams, and ignore innumerable (capillary, pedestrian, &c) surfaces--instead of surfaces being instantly (or preemptingly), totally, invisibly, ubiquitously, reliably, efficiently, cheaply, more safely, &c kept free of snow &c by electrical heating of pavement.

Old cities and towns used to be set in dirt and dirty to that degree. Modern cities are "abstracted" and immensely broad, and generate dirt in

incomparably lesser ways. The importation of dirt from an "outside" is further reducible, cities are eminently cleanable, personal standards can rise, the atmosphere can be cleaned or sealed off, residual dust in a closed-system can be minimized, &c and ultimately--over a period of time--future cities can become increasingly immaculate. Yet in a way it is not "dirt" per se which is so offensive, but "dirty" (septic, greasy, suspicious, irremovable, overabundant, "old", &c) dirt--whose reduction might be a separate matter; modern cities have had a tendency to become garbage dumps and sewers. Eliminating the noxious fumes, noise, heat, tension, brutal presence, crowding bigness, &c of vehicles amid pedestrian traffic could be miraculously benefic and is feasible--other drives are practical, vehicles and pedestrians are completely or partially separable, &c. The former hellish scenes could be replaced by quiet, natural, safe, easygoing, decorated, broad, "wild" or sophisticated, pervasive, "intimate", air-conditioned, &c settings negotiated by friendly pedestrians, eg. Already such settings are beginning to appear and accumulate. It is obvious that enormous real progress is possible, and yet might depend on economic growth to be feasible or perfect, especially if the type of progress were to be taken to a ne plus ultra and come to "saturate" the Earth and any part of it--and the goal seems eminently desirable. It is likewise clear how easy it would be to overlook this wondrous and cogent capability, and that virtually everyone has done just that.

Crime. The increase of crime may not be real, geographically universal, equal for all types of crime, an increase of seriousness of individual crimes, increasing as opposed to static but horrible, exactly an increase of ratio for the population of offenders or of victims, a secular trend so much as an old cycle, a matter of degree so much as derivative of increase, a matter of derivative so much as degree, a matter of degree so much as of violence, a factual matter so much as one of reportage and conspicuity, may be a recovery from a past artificial or atypical low, &c. Has crime been increasing for 10 or 100 years? Has increased crime been a function of urbanization? Is it attributable to American mobility, excessive affluence, enlarged differences between rich and poor, increased opportunity for crime, excessive public and official leniency, arrogance on the part of "tragedized" minorities, decay of central cities or other areas (eg rural, due to migration to the city), disintegration of the family, disintegration of authority, tradition, ethnic heterogeneity, &c; our hyperpermissive milieu, mistaken or experimental judicial attitudes, excess reportage and glamorization of crime (eg its romantic treatment by the media), excessive "liberal guilt" and hypocrisy, disintegration of religion, our peculiar American heritage, new opportunities created through our technology, reexpressions of crime, new desires created by our living standards, new capabilities for crime created by our affluence (eg cheap guns, ready money, easy flight, farther travel, new deposits of money), &c? That crime has increased need not argue that it will increase more or stay at a high level: it may defeat itself, constitute a passing "fad", represent a chance fluctuation, be met once understood or resisted, create new means of law enforcement, or simply be met by the longterm evolution of crime detection and law enforcement. How much worse can crime get? Are the causes of crime independent of other aspects of progress, especially scientific or economic, which might even submerge in importance any increase?

The solution to crime may be to increase wealth beyond the averages that currently prevail, or even beyond exceptional wealth. Eliminating current disparities may reduce crime. Crime may be particularly associated with marginal living or subsistence, even that subsistence of second kind that represents the occasional need to do any work at all. Current US crime may be the expression of conditions prevailing 2-6 decades ago, a kind of budding of a certain level of poverty or of a sociopolitical experience. Current crime figures may be inflated by poor past reportage. Conceivably great crime amid progress may be rather noncontagiously American. Future automation of the circulation of "money", automation of other sales, buys, and distributions, perfect scientific identification of individuals, relatively perfect traceability of misdeeds, perfect "recording" of transactions, perfect accounting of individual wealth, computer supervision of cash flows, computer knowledge of everyone's past and of population movements, total disappearance of "on-person" money (as above), automated self-observation by homes and businesses, perfect "X-rays" of passing individuals, &c may depress or eliminate crime overall or in certain categories. Restitution or unprecedented trial of truly draconian punishment may in future, or in the long run, depress or greatly eliminate crime. New technologies of punishment--eg brutal but harmless direct neural "torture" instead of scarring, lengthy, expensive, hardening or worsening, ineffectual, socially offensive, absurdly proportionate, &c imprisonment--may gradually or abruptly depress or expunge crime or wrongdoing (one could even imagine the propriety of a punitive system which gave identical kind and degree of neural punishment to every single offender). Some future psychology or neurology might eliminate, anticipate, or detect criminosis at its roots. Crime may be largely self-perpetuating and its virtual interruption for 1-140 years might lastingly reduce or eliminate the whole phenomenon. If man does, will, or can progress ethically it is conceivable that by this route crime might tumble (reusing the pacifist argument, if everyone just ignored crime and left it wholly unpunished, it might fall). The sources of crime in normal and abnormal people may lie in or be enabled by a malfunctioning or at least alterable part of the nervous system; interventions in the nervous system may diminish or remove the causes or means for crime in everyone "congenitally"; at the very least, neurotechnological perfection of or control over the nervous system (eg self-control), eg such as to regovern drives otherwise capable of excesses, might have this effect of extinguishing crime, perhaps altogether. The slums breed crime and progress could end slums. A portion of society may create slums for fundamentally hereditary reasons and this portion may be curable by euphenics or erasable by eugenics. Children being bent toward crime might be identified when children and redirected, perhaps by removal of the causal parents or environs and reeducation. Crime would be diminished if everyone invariably and conscientiously reported it and the suspicious, if people became completely intolerant of it, and if people took "perfect" interest in each other's welfare; crime flourishes where there is compromise. At minimum, "pre-industrial" levels of crime may be restored. Crime may grow where progress is viewed cynically, opposed, and absent. Maybe we should

greatly enlarge and render more efficient rewards for public reportage of crime? Maybe we should enlarge enormously fines for crimes? The treatment of crime is a great experiment that is only just beginning and it is too soon to know what methods will prove most effective in the long term, and irrelevant to fault progress beforehand.

The integration of minorities, eradication of needs and inequities, slackening or "normalization" of change, stabilization and "settling" of society, expunction of slums, restoration of the ideal of progress, solution of general social problems, restitution of moral education, and all the other possibilities considered above, should lead to a subsidence of crime in the future.

POSSIBLE AND ACTUAL CAUSES OF WAR
Pat Gunkel

1. Ambition.
2. Misunderstanding.
3. Misconception.
4. Stupidity.
5. Envy.
6. Opportunity or felicity.
7. Accident.
8. Function as a means of distraction.
9. Religion.
10. Language.
11. Xenophobia.
12. Instinct (eg aggressive).
13. Ideology.
14. Competition (for resources, territory, might, bravery, identity, attention, trade, seas, arrogance, sport, hatred, authority, dominion, ad infinitum).
15. Preemption.
16. Tradition.
17. Proximity.
18. Sharing.
19. Regeneration.
20. Uncertainty and ignorance.
21. Superiority and inferiority.
22. Habit.
23. Incomprehensible cycles.
24. Testing.
25. Experimentation, gambling, &c.
26. Sublimation, eg exteriorization of hostility.
27. Projection, hallucinatory and otherwise
28. Scapegoating.
29. Moderation of tension.
30. New methods, means, weapons, asymmetries, defenses &/or offenses, &c.
31. Dramatics.
32. Fear.
33. Civil war prompting international war.
34. Domestic or international disorder.
35. Alliances.
36. Imperialism.
37. Arrogance, insult, pride, pugnacity, truculence, discourtesy, hubris, irascibility,
38. Tiny, trivial, meaningless, pointless, interpersonal, symbolic, vague, dubious, absurd, irrepeatable, unpredictable, catalytic, phasal or threshold, ambiguous, inevitable, indistinguishable, Heisenbergian (ie inexcludible and yet based on the inevitable periodic occurrence of infinitely misleading appearances by the association of chance factors), deliberately provocative (eg trick triggers of scheming groups or insane persons), and/or cetera events.
39. Societal psychopathology.
40. Fun and romance.
41. Weakness, pacifism, femininity, vacuum, or the like.
42. Lack of international law, order, climate of opinion, civilization (eg isolation), stabilizing commerce, mutual interests, authorities, penalties, &c.
43. Revanchism, domestic schism, secession(ism), &c.
44. Interests of military-industrial complex.
45. Disagreements about other nations' system, practise, or leadership.
46. Lebensraum.
47. Fate (random factors, morphogenesis, historic destiny, mysterious factors, unconscious factors, working out of destiny, &c).
48. Misappreciation of what war is.
49. Design, genius, inspiration, &c.
50. Internal militarism.
51. States obedient to single persons, families, clans, oligarchies, parties, cliques, cults, interests, other factions, &c.
52. Famine, poverty, liberable oppression or inequity, depression, &c.
53. Idolatry (cults of individuals), mob rule, and herd behavior.
54. National moods.
55. Recklessness.
56. Insidious, incremental, escalatory, or continuous war, belligerence, cold war, antagonism, treachery, espionage, fomentation, &c.
57. Abuse of treaties, contracts, understandings, &c.
58. Altruism, sympathy, counterintervention.
59. Domestic or international revolution.
60. Prevention.
61. Demonstration (eg of determination).
62. Miscalculation.
63. Self-fulfilling prophecy.
64. Bad peace.

War and peace.

The preceding list of the causes of war prompts the following considerations: How many of these causes (in their aspects, cases, degrees, overlap, transformations, &c) are still active, where, how, when, and why? Which of these causes are and are not justified? Should war end, at least now? Has war increased or decreased (secularly or momentarily, quantitatively or qualitatively, in terms of casualties, fatalities, damage, extent, number, comparability of incidents, readiness, per nation incidence, incidence in the profile of nations, cost, contagiousness, standards with which fought, hardware/men ratio, duration, permanence, adequacy of result, 'totality', tactical vs strategic kind, justifiability, &c) over the past 10,000, 2,000, 500, 100, or 25 years? Have any solutions to peace (however unpractised) emerged (eg federation, development, judicature, arbitration, negotiation, UN peace-keeping, better communication, global commerce, domestic balance of powers, democracy, world opinion, news media, education, pacifism, nuclear or Great Power balance, crisis management, understood escalatory ladders and rules, instrumentalism and rationalism, stigmatization of any violence, aggression, misbehavior, egoism, &c; 'domesticity' or isolationism, demarcated spheres of 'proper' influence, fear of armageddon; novel destructiveness, scale, uncontrollability, costliness, moderation, resistibility (eg unwinnability), inhumanity, and even nature or 'bizarreness' of war; concessionary policy, antiwar propaganda and philosophy, a distaste for war, exercised memories, 'middle politics', compromise, 'moral inflexibility', 'good dominants', alternative preoccupations, rising or basic content, world cooperation and community, cosmopolitanism, settling of old disputes, sophisticated tolerance, 'pacification' of religion; muting, deterioration, or invalidation of ideologies (eg imperialistic and messianic Communism, imperialistic and amoral capitalism, monarchism, heroic cults, ambitious churches, paranoiac perspectives, psychagogic Americanism, colonialism or empire, cult of 'Great Powers', manifest destinies, fatalism, &c); bilateral, unilateral, or multilateral disarmament; cultural exchange, detente, entente, wise leadership, higher horizons (eg space); international and transnational consortia, corporations, societies, voyagers, residents, languages, ethoses, preoccupations, projects, friendships, associations, dependencies, equivalents, systems, economy, politics and even parties; fixation of national boundaries and sovereignties; neutrality and bilateral protectors, various stable dichotomic partitions of nations, various absorptions of fringe and minutely quarrelsome states, erased memories of war, transcendence and erasure of any and all cultural differences and 'miscegenation', widespread domestic accommodation and rationalization, optimism and faith in progress, conversion from ideology-ideocracy to technology-technocracy, lessons learned, subsidence of hysterical climates, individualism replacing certain group orientations, 'miarchic' restrictions, goodwill, 'controlled' militaries, resolution of boundaries, technological meaninglessness of borders, communal territories (oceans, atmosphere, space, poles), fully subdivided continents, passé 'frontiers', prudential and conservative politics, rise of statesmanship in all countries, global triumph of semigerontocracy and meritocracy, ethnic disidentification ('melted pot'), global (indecisive, conservative, technocratic, compromising, feeble, embrasive, regular, homogeneous (no 'colors' anywhere in the world), anarchically pluralistic, 'iatric', given to muddling through, self-contradictory, unimaginative, &c) bureaucracy, healthy nations, uncooperative and faithless world, too many nations and too many issues, powerless and transient (always fragile) governments, internally preoccupied government, extreme national individualism, countless 'scientific' and 'identical' examples of other nations and historical retrospects, international programs, world charity and the mutual assistance of nations, non-zero-sum games, global sports, sharing of resources ('communal' politics), views of the future, inspiring universalistic individuals, diverse and considerable intercommunication of culture (art, books, movies, cuisines, practises, manners, mores, values, references, beliefs, attitudes, problems, various products, jobs, jokes, amusements, practises, interests, perspectives, institutions, ideals, and affections), ad infinitum)? The nuclear bomb and its accompaniments might be an interesting example of bizarrely genuine, or at least genuinely complex and multidimensional (often totally ambiguous, indirect, or ultimate) progress. The bomb may have given the United States the (untaken) opportunity to defeat evil belligerents, disarm the world, advance the complete world directly (a la Japan), universalize true democracy, universalize nomocracy, advance the (educational, health, economic, institutional, political, and even sociocultural) standards of the world, safen the world and prevent at their fanning and critical origin numerous future world menaces, institute a rule of peace and cooperation, unite the world in comity and purpose, preempt Communism, seed ideal laissez-faire in place of today's automatic and panacean socialism-statism, settled innumerable differences (now sources of war and other havoc and discomfort), eliminate the international bellicosity which regrettably induces cumbersome and destructive militaries cum gigantic global armaments and induces excessive, restrictive, autonomous, life-transforming, life-directing, self-perpetuating, ever-enlarging, often irresponsible and totalitarian governments and milieux, along with an

atmosphere of discord, distrust, despair, waste, dissimulation, machination, absurdity, and shame, establish an ideal (instead of compromise, chimeral, bedeviled, pandemoniacal, feckless, uninspired, and abortive) and true world government (modeled along the tested, virtuous, and liberal lines of the US, or fashioned to be the ennobled successor thereof, the child of enlightened, altruistic, leisurely, and free men), prevent some ultimate armageddon or holocaust (or procrustean doomsday machine devised by some cruel government) in our warring and divided future, &c. Yet the United States (whether meekly, naively, blindly, humbly, self-distrustfully, culpably, criminally, or just fatuously) forwent this supreme and perhaps unique opportunity, creating the world as it is today with its inevitable and permanent problems. So multidimensional progress creates multivocal opportunities whose proper recognition and exploitation decides the positive, neutral, or negative nature of that ambiguous, challenging progress. For all this, the nuclear bomb has seemed to give the world a needed respite from major war with a very uncertain future issue, and it may be that this periodic stabilization will refocus powers on peaceful and cooperative purposes, diminish habits of war, and advance the world radically beyond (some) old causes of war, vile antagonism and persecution, and dumb self-absorption and cross-purposes, as a happy result of a supreme but janus-faced weapon. Subjectively or objectively, the nuclear bomb may mean that world war must never occur again for it will inflict unacceptable cost on all adversaries, other terrestrials, or even chance human extinction, and therefore preclude dreams of great clashes and conquests, especially global conquests. It may hold in check subversive and domineering activities of nuclear powers in other countries, and divert to some (indeterminate future) extent evil or abusive powers from an international to a municipal scope and conscience, thereby enabling the proper successful evolution of Earth's scores of complementary (instead of interchangeable) lands and peoples. The acquisition of nuclear weapons may be such a serious thing that it matures and pacifies the thinking of proliferants and their enemies alike (even if it leads to a sprinkling of unsightly, initial use and abuse; the aftermath may be a progressive restraint on use and war by anyone, and a world-transfiguring reaction of the rest of mankind, ending the local disputes and further damning the use of brute force in the settling of human differences); indeed, it may be highly desirable that both proliferation and reuse of nuclear weapons occur as they may constitute the decisive and indispensable catalysts for pacifying the internecine globe. Looking beyond the H-bomb and its current means, the further progress of military science may serve man more happily still, variously by: 1) rendering war still more effective, ghastly, grievous, explosive, obvious, and unpredictable, thereby stimulating, compelling, racing, magnifying, certifying, and perfecting sincere, enthusiastic, consensual, consequential, cathartic, treasured, and ultimate world peace, demilitarization, disarmament, accord, reconstitution, and redirection in a post-belligerent and compassionate eternity, 2) giving a humane actor (be it US, UN, Japan, Arab, a wise China, or a reflective USSR) a second or still later chance for (as expatiated above) instituting world peace, order, prosperity, virtuous government, &c by providing some endeavoring or inadvertent power an unanswerable instrument of war or willable doom whereby he may dictate to his adversaries and all of mankind (and achieve his ends with or without use) (indeed, as a still further example of the ambiguity and complexity of progress, even such acquisition and application of such a device by a so-called "bad guy"--eg an oppressive, aggressive, totalitarian, kakistocratic, antidemocratic, ideological, despotic, exploitative, sinister, sick, backward, ignoble, &c state or coalition--might not be bad and might even, on a larger and greater page of history, be good, eg by stabilizing the self-injurious and potentially self-suicidal world, challenging and ennobling the nonsatanic possessor (eg bringing out his finer, more trusting, fair, helpful, imaginative, religious or platonic, self-justifying, self-liberated, happy, generous, and ultimately moral and profound qualities, forcing self-examination, reconsideration, and transcendent, creative discard of his limited, irrelevant, and dull ideology), redirecting the ideological state to practical and ideal things and the inevitable wisdom and pluripotent rebirth of the sublime, demilitarizing the state and world, uniting people to some higher tasks, restoring common sense and the multivious and convergent progress of the world toward some consummate self-defining destiny paradoxically and even all-favoringly indifferent to the misconceived and exaggerated political distinctions of our day, elevating the victorious culture by its absorbed subjects' oligodynamic admixture of souls and ways; all regimes may be finite or victories fatal, and all regimes are conspecific and intercurrently determined), 3) having the means for some such unanswerable weapon (as, indeed, the great powers may already by assembling a 'quantitative doomsday machine') does not insure its building or use (for various reasons, that may be

decisive) at first or at all (nor its efficacy, in certain cases, as the other side may decide in advance or instantly--for moral or strategic reasons--to be absolutely insubmissive to 1. a device guaranteed to extirpate Homo sapiens or at least devastate all, ie a self-retaliating device, or 2. a device able to be used safely, in degrees, and selectively and that would be used to successively re-decimate, and thereby extract a surrender from, an opponent, or else to threaten his unary obliteration (it would probably take a pretty fanatic or strange enemy to use the device in any of these 3 ways, and the experience would likely be traumatic, even subtly suicidal)), and the opponent may create during the lag or possess initially a counterpart device (in various senses; the obvious potential for such a device, built easily, might compel consequential conference of conscious or able nations, and an issue variously pacifying and reconstructing the future world), which enantiomorphism would, in effect, render the possessor nations each other's hostage, and which reciprocity might make them moral teachers of each other, promote their rapprochement, and variously favor the future of the world via a supreme (and not just partial and temporary) stalemate (this dual situation is not as unlikely as it seems), 4) so horribly savaging adversaries or mankind, if just by the spectacle or affect on landscape, as to drive the survivors to abandon fire, and the states that use it, for all time and totally, 5) so multiplying and simplifying the possession of some weapons of mass destruction as to render them rationally unusable and intolerable, compelling (before or after demonstration) their abandonment and universal prevention, concomitantly more or less rendering any war inoperable, 6) bringing into existence means of absolutely or effectually perfect defense (proof against critical, worst, almost any real, or virtually any forthcoming weapons), which might (at least for someone) render the possessor, with his preexistent (presumably symmetric) offense or retaliatory defense, superior to or victorious over his adversaries and the rest of the world (such an edge, with the probability of being temporary, might even compel seizure of the adversary and world to maintain the impunity or capability; it might behoove a "good" nation to act, as described already, and this fact might in turn compel a foresightful but reluctant bad guy to act), 7) rendering the outcome of a war totally incalculable, 8) rendering the actual offensive and defensive, qualitative and quantitative state of an enemy, or a set thereof, totally or excessively unknowable, and possibly also or instead rendering the state of one's own or an enemy's post-war environment (in terms of the acceptability of some risk of some destruction of some kind) totally or intolerably unknowable, 9) equip both or all enemies with sufficient or absolute invulnerability as to defeat or enigmatize everyone's offenses (comically regressing the world to, in effect, 1940; the race might end there or recommence, lessons forgotten), 10) etc! A convincing case can be made that if the world fails to disarm or at least terminate its hectic arms race, the world is doomed to catastrophic war, extinction, or to succumb to a bad or good aggressor (exploiting a probable or certain sufficiently decisive edge that will eventually or repeatedly occur); this is encouraging, in a way, since it makes probable the eventual cessation of the world's current excruciating status quo, and possibly because man will eventually awake to the knowledge and be driven to a satisfactory solution of his present arms and disarmament stalemate. In war and peace it can easily be suggested that the world has been regressing, not progressing, of late, witness the impersonality, civilian effect, general devastation, futility, toll in lives, side effects on government, relative and absolute expense, 'cold' perpetuity, and sheer hideousness of the major wars of our century; man has, and will have more, weapons at his disposal which he cannot control (eg pandemic pathogens, absurd nuclear overkill, a chance that a nuclear war will devastate planet and species indirectly by affecting the upper atmosphere). Decrease in the number and scale of wars would be made meaningless if rare but infinitely more destructive wars are still to occur, or occur once and interrupt the career of civilization, so one must hesitate in evaluating any progress in war and peace at a time when the world is overflowing with ultimate weapons and recurring wars no smaller than those of earlier centuries. In a way the sole measure of any progress is our prospects, our own and our hopeful descendants, and these prospects are not good. The prosperous and civilized picture of the world we have is misleading since the occurrence of a third world war could well engender a world that would be a political, social, and physical nightmare of an enduring kind, a barbarian state of existence.

The list makes it clear that causes, conditions, and eggs of war have by no means vanished from Earth's pathetic surface, victims of the juggernaut of progress. Per contra, the Earth looks seething and flammable with causes and opportunities for war everywhere competing. Yet the persistence of war in the face of cornucopian progress of human welfare, power, and knowledge seems paradoxical. Its concentration in developing countries with greatly inferior standards of living may imply that war, like human pullulation, is vanquished when the standard of living becomes sufficient as an inevitable

result of a country's industrial growth modifying its way of life. This in turn might imply that we should exhibit less concern for the momentary political vicissitudes of developing countries experiencing revolutions and invasions, and instead reflect that these irregularities are insignificant when placed against an encompassing tidal wave of socioeconomic progress towering into the sky, spanning the horizons, and overturning particle and figure in its path alike. Evidently war and ideology must be transient things, totally powerless against transcendent progress and the latter's introduction of its own standards. There seems to be no defective state on Earth such that it might endure for long surrounded by and permeated with a revolution of rising expectations and satisfactions. That revolution would seem to answer human needs, equalize standards of living, and reduce the differences between governments by rendering them into purely technocratic agents serving benthamic purposes. There is not a country on Earth disobeying this grand, climactic tide. The multiplication and generality of war under the beginning surge of this tidal wave of inevitable progress in 150 nations--with its passing chaos and revolutionary multidimensionality, its constituent hatred and hysteria, its incomprehensibility and mystery from within, its random transformation of appearances, its inevitable demagoguery and radicalism--makes perfect sense, as does the idea that the war, unrest, malaise, and ideology are doomed eventually to wither of their own vapidty and weakness against a tidal wave of human satisfaction, happiness, and well-being.

RETICULAR

A NEW WORLD VIEW

This book has been a critique of critics and a review of standards. It has found people to be, paradoxically, at once rightly and wrongly unhappy. The higher critic should have his alternative to that with which he finds fault. I am no exception and I have mine.

I believe that the modern world suffers above all from mass attitudes of an improper kind. I believe that a new world view is needed, accurate, and inevitable. Modern man, if his malady is really modern rather than perennial, suffers a malaise whose cause lies in a universal questioning and decay of traditional wisdom about the nature of the world and himself, and the propriety of his ways. The technological evolution of civilization has confronted man with mankind by concerting all the variety of beliefs, images, mores, styles, personalities, philosophies, societies--all truths, values, and ideas--on a marble, or toward a point, in a single emotional arena; it has simultaneously called into question all of these together by a powerful critique of nature arising out of science. But predictably, instead of harmonizing, unifying, transforming, and sublimely transcending this "volume of molecules", it has resulted in conflict, violence, unhappiness, and nihilism (the view that all these beliefs may be false, any belief impossible, and that the world may be without meaning in any case). In short, any satisfying, constructive, challenging, and unifying world view has been foreclosed.

The new view I wish to propose I will call The Cosmomorphotic View. The word "cosmomorphotic" is formed by combining "cosmo-", meaning universe and order, with "-morphosis", meaning action or process of forming or developing. The cosmomorphotic view can be defined by listing some axioms which it embraces:

(1) The Principle of Cumulative Complexity, which says the cosmos is anamorphic and that order and disorder, simultaneously, always increase.

(2) The Principle of Eternal Revergence, which says that the universe is a pattern of convergence and divergence, that this pattern is inherent in everything real, that convergence always produces divergence ("convergence") and divergence always produces convergence ("divergence"), that these processes are marked by the genesis of qualitative novelty, that the orderly ramifications of all events ("vergences") are infinite, &c.

(3) The Principle of an Hierarchic Plenum, which says that nature is saturated with an infinity of hierarchic levels reaching to infinite size, another infinity of hierarchic levels reaching to infinitesimal size, with an infinity of varying hierarchies quasirandomly connected anastomotically with other hierarchies along their levels in "horizontal" or "banyon tree" fashion, that any point in any space is infinitely dense or a plenum owing to this infinitely complex interweaving of an infinite number of hierarchies (everything, something, and nothing are interchangeable; all, some, one, and none are somehow deeply identical; a point is a space, and a space is a point), that probably nature is like Jack's giant beanstalk in that all her levels are growing up (and/or perhaps down) into one another, perhaps regeneratively in any or all of various ways, &c.

(4) The Principle of Perfect Memory, which says that nothing in nature does or can erase, lose, isolate, or weaken information, pattern, or order, that nature is but quasirandom, quasi-entropic, 'paramorphic', and morphogenic, and perhaps that nature is infinitely self-connected--eg neither atomization of a corpse, incineration of a tree, solar engulfment of the Earth in a future age, capillarization of water waves from a stone, words spoken into air, or thoughts thought results in a true loss of any of the essential information or in simple randomization and temporal symmetry. (Possible ways?)

(5) The Principle of Self-reproductive, Self-multiplicative, Self-infinetizing, Self-correlating, Self-perfecting, Self-ubiquitizing, "Self"-saturating, Self-regulating, Cosmoplastic, and Paradoxical Information, which says, inter alia, that a Markovian matrix particle of information, vergence, or whatever expands to paradoxically (eg in a quasi-entropic) and approximate the universe or every other such particle of information. always recursive; Horn's

(6) The Monadological Principle, which says that everything in the universe is at once unique and all-containing, an atom and a mirror microcosm, and according to which everything is "codestate", somehow evolving in parallel to, and yet ultimately convergent with, everything else, so that there is an "omniconsequential" meaning to things, a progressive and apocalyptic pattern to the entire, however transiently confusing, universe of actual and possible things.

(7) The Principle of Progressive Unity, which says all events -- all personal and impersonal causes and effects -- are organically and infinitely meaningfully codestate (note that no particular finite, nor even unique, event in the future is intended); the universe is an organism, a mind, a soul, and a God.

(8) The Principle of Perfect Relativity, which says that no event is so minimal as to be without consequence, that "consequentiality" belongs to the perspective of a subjective but inevitable frame, that the interactions of the universe are infinite in time because no rate is so slow, no force so weak, no events so few, no effect so isolated, no pattern too complex, no situation too simple, no state so final, no event so dominant, no range so great, &c that interaction, pattern, organization, universal complexity, 'reflection', &c fail to occur.

(A) Paramorphism: The property of changing from one mixed species to another by a

Ambiguous
Stories
Differential poetic
power
samples
symbols

Statement that "An Infinitely of Quantum $\# \#$ Exist" is equivalent (3)
to "An Infinitely of Hidden Variables Exist".

Simplified explanation of the preceding 13 principles and their 26 consequences.

The ideas just set forth will repel the reader. Are they profound or merely obscure? What do they mean? What credibility and likelihood attaches to them? Why, and therefore how, should they form the basis for a new world view? What status do they have in any case, eg what fields do they come out of and reflect, if not some barren metaphysical metaphors? How can they serve to promulgate the new world view among the intelligentsia and average men, and effect the sought change in the course of mankind? Are the various principles and consequences equally likely, symmetrically or asymmetrically interconnected or necessary, a complete or partial composite eg sufficient to the problem, and how ought they cooperate in the new world view? Are the ideas intuitive or ^{are they} rather formal, rigorous, conventional, empirical, theoretical, nonunique, and/or the like? Are the ideas testable? How do they relate to other ideas, normal and otherwise? How are the ideas revolutionary? Are they preliminary to some grander scheme and set of ideas, which may subsume or negate them? Are the ideas ambiguously stated? To what degree do the ideas overlap or, rather, bound one another? Apart from other questions, have the ideas heuristic value? Are the ideas subdivisible? Are the ideas to some extent synonymous? What are the assumptions behind them? I suspect that the proper presentation of these strange ideas would require the exposition of an entire book to be suitably convincing and fair even in a preliminary way, so I have plunged myself and my present book into deep waters by encapsulating the new ideas here. Still, I believe that the world view to be developed is, again, right, timely, and apposite here, whatever difficulties it occasions on the part of the friendly reader of a book otherwise infinitely more charming and familiar.

Principle 1, The Principle of Cumulative Complexity, in effect says that order in the world, at least as experienced and as it experiences itself (for I do not here suggest the process is simply in the mind of the beholder), always increases. "Order" is to some degree synonymous with pattern, information, coordination, organic organization, purpose, intelligence, possibility, &c. One viewing the world can identify what might be called "levels of order" as he asks himself the question whether nature is of finite variety: (1) the sheer number of discrete things (of course the mereology may not be discrete but instead continuous) that populate a. a finite volume of 3-dimensional space or 4-dimensional spacetime, and b. the entire macrocosm (to the degree this is to be supposed finite), (2) the variety of things (ie the quantity of qualities; again, the mereology may not be discretely finite but continuously infinite), (3) the variety of variety (subject to the repeating qualification), (4) the amount of importance in the variety or homogeneity in the variety, and (5) in effect, still higher "derivatives" of the all (which may be infinite or superinfinite, subject to the repeating qualification). Put more simply (but distortedly), an inhabitant of the universe or "cosmite" might view everything and ask the farseeing questions: (1) is the universe only finitely intensive and extensive, (2) does it comprise but a finite number of (possible and actual) types of things, (3) does increased experience cause these types to converge upon one another and unite or combine in a lesser variety (instead of diverging, whether simultaneously or not), (4) is this general variety less interesting, and (5) do the ^{subl} laws, forms, stories, meaning of things, settings, complete picture of the ^{subsubl} universe, measures of things, rates of things, and everything else increase ^{non} infinitely, in arbitrarily great measures, in arbitrarily great increases thereof, in a maintenance of the degree of larger novelty and importance, &c. Assuming the universe is a permutational machine, has it a finite number of states and an overwhelming tendency to monotony, or even the ability to create any one case or degree of repetition-without-variation at all, ad infinitum? These questions are important and yet these questions are unanswered, in any degree, by current knowledge. (This restates a point I once made in defending "religion", that the really fundamental, great, and decisive questions--which withal have a revolutionary bearing on the particulars of our normal conduct--have never in the slightest way been answered, so that "religion" lives. I considered religion to constitute a defense of these subtler, deeper, truer, universal, overall, &c questions.) Principle 1 also says that "disorder" always increases, so that it "increases" simultaneously with the increase of order. Disorder is to some extent synonymous with "noise", macrostructural or microscopic (ie apparent structural) decay, entropy, randomness, decomposition of entities, absorption of forms by other forms, &c. Clearly it has a direct, complementary bearing on the sets of questions raised above. Lancelot Law Whyte, in The Universe of Experience, his valedictory essay, has suggested that order may prevail over and subsume, as a partial expression of itself, disorder, in which case the universe may be imagined as a unicyclic or polycyclic asymptotic or symptotic increase of a finite all-encompassing ratio of order to disorder. I am suggesting, however, a deeper ambiguity or reciprocity in terms of which neither the numerator nor the denominator are finite and the ratio may for all purposes be static. At first there

Stagger
as lists

is a reflex to object to my proposal on grounds that the universe has to obey some encompassing "law of conservation" according to which, at best, order and disorder may unidirectionally or bidirectionally interconvert but must instantly or eternally perfectly balance, 1:1, with no need, perhaps as well, of any intermediate residual. Of course one can rebut that the existence of anything, as opposed to nothing, is sufficiently amazing that it, as in some cosmologies of "continuous creation" as opposed to finite-momentary-asymmetric creation, renders it possible or even probable that the "real" or "seeming" order, disorder, &c--or their sum--may alter (increase) ad infinitum. My suggestion, however, is subtler, and variously says that a. the measure of order, disorder, and order:disorder is indeterminate, and possibly bound up with the nature of time, change, consciousness, value, and/or the like, b. the universe, or certain of its relations, are continuous so that the new, increasing, and lasting complexity--order and disorder--may express itself in the distribution of information, arbitrarily more minute (and/or greater) sizes, c. or in the "open" structure of time (eg the rhythmic complexity of motions, the n-body structure of the universe, the hypothesizable infinite subdivision or "plenary continuum" nature of space or spacetime, a temporal hierarchy of asymmetries piled upon symmetries eg as larger or arbitrarily--"topologically"--different units of time &c, &c), d. holistic and inescapable patterns of the universe, and/or e. the like. Therefore there is an obvious, credible, and elegant physical basis for an infinite, paired cumulability of order cum disorder, ie "complexity". I am not sure at this point how this principle may in fact demonstrate itself in nature. Whyte calls attention to the astonishing fact that, overall (ie over all moments, volumes, things, events, scales--as some sort of "emergent pattern" (but note the abilities to hide or be ambiguous)--), the universe exhibits a tendency not (or not subtractively, detractively, or perhaps equally) to entropy, disorder, chaos, death, destructive conflict, &c but rather to maintained, increasing, and perhaps inexhaustible (structural, processual, functional, nomothetic, hierarchical, interconnective, &c) order, transcendence, perpetuity, &c--however the law of entropy, or the Second Law of Thermodynamics, may hold, order as much as disorder seems to be increasing. The energy, regularity, hierarchic and organic order, anthropogenic ("anthropophilic") conditions of this universe and time, intrinsic improbability of the current universe (including both Freeman Dyson's anthropophilic "hangups", and the alleged unicity, morphogenetic and structural excellence, and/or whatever of happenstance things), and/or cetera--if inexplicable by the idea that observers such as ourselves will only appear in that permutation or transformation of nature concomitantly meeting conditions and their coordinate corollaries for the likely appearance of commentary observers--may prompt a wonder whether the universe is not possessed, at minimum, of some equilibrium--dynamic, static, or developmental--or equilibrium quota of remanifestational (Hydral, Protean, Sivaic, &c) order, energy, law, organization, life (even), "perspective", and/or cetera, rather than being a "one shot", infinitesimally likely, infinitesimally rare, "doomed" ("necrotelic"), atelic, antibiological, random, autodestructive, pointed, "garbage dump", "zero sum", quiescent, calescent, decalescent, paradoxically "isogenic", paradoxically "heterogenic", paradoxically "plicogenic", paradoxically "statogenic", paradoxically "amorphogenic", and/or cetera affair (these metaphoric possibilia will be developed elsewhere). This means that the instantaneous, larger, or overall energy, negentropy, interactivity, "ontogeny", "phylogeny", opportunities, order, interconversion of pattern, &c of the temporal, spacial, virtual, subjective, &c of the universe may be invariant--despite any possible or probable appearances to the contrary--or even nonfinitely enlarging. Regardless of whether the "larger", overall, stratal, stationary or cryptostationary, "constitutive" or elemental, idiosyncratically familiar, "taxonomic", regenerative, regularly or irregularly clustered, random or regular, &c features of the universe manifest a steady-state cosmology, Principle 1 suggests that it is awkward, erroneous, or misconceptual to contend, especially categorically, that the universe as an all-embracing and perhaps synchronous integral has a finite lifespan and thus progresses convergently to an azoic, singular "hot", "cold", or other death of melancholic, bathetic, &c kind. The truth is that we are infinitely primitive, ignorant, presumptuous, parochial, and imbecilic theoreticians as 20th century cosmologists and metaphysicians, and models conceived and preferred by 1975 are inapplicable to the universe overall, which seems infinitely complex, ever-stranger, and, particularly, such as to always and thus repeatedly "invert" its properties when further explored, perceived, and understood so that it seems to involve an indefinitely extended "undularity", anastomotic hierarchy of further or infinite systems, "expanse of evolution", &c in terms of variable laws, phenomena, constituents, coordinates and interactions, &c. Again, I am not sure to which prosaic matters Principle 1 may initially and heterodoxically apply and govern, and how calculable--

α Explain.

now and eventually--known or thereby-discoverable phenomena may be. For example: what order, "memory", growth, informational reexpression, taxonomy, self-organization, "individuality", static or dynamic order, "intrinsic phasicity", "age", "history", relative order, "evolution", "interest" or "investigability", &c --vs degeneracy, "flatness", "dullness", "commonality", "amnesia", rapidity, efficacy, difficulty, peculiarity, thoroughness, "cosmologization", significance, replacing physics or contiguous, instantaneous, deterministic, simple, overt, delomorphous, identifiable, unique, and at least more obviously important effects of information with cosmology or remote or infinitely distant, later or final or eternal, statistically inscrutable/unknowable or random or tychistic, complex or cosmomorphically/infinitely complex and total and complete and fundamental and revolutionary and omnitransformative, cryptic or irretrievably lost/interwoven/ingenious/unrecognizable/illusory/demanding/metaphysical, polymorphous or kaleidoscopic or idiomorphic/infinite-dimensional or infinitely spectral or infinitely self-different/self-varied/self-stratified or infinitely holistic-continuous or pseudomorphous or peninfinitely amorphous or infinitely chimeric or infinitely pluripotent or infinitely infinitely metastatic/unstable/asymmetric, or (infinitely) unidentifiable, or multiple or infinitely branched or infinitely anastomotic or infinitely granular or infinitely continuous or infinitely holistic or infinitely "pluriversal" or infinitely "super-universal" or infinitely integral or infinitely "matric" or infinitely singular or infinitely dense/plenary or infinitely causal or infinitely effective or infinitely influential or infinitely self-reproduced, and at least more obvious trivial/vanishing/indifferent/average/tenuous/infinitesimal/degenerate (or just plain inexistent) effects of information, and/or cetera* suggestedly or conjecturably characterize: liquids, gases, crystals, the ocean, the Moon, the Sun, the Milky Way, the Diracian, Wheelerian, Hoylean, Dudleyian, Gunkelian, or other "seas", cytoplasm, the human brain, human history, paleontology, Earth's interior, neutron stars, black holes, ylem, time(!), the Universe, hypothetical telepathy or a spiritual world or heaven, a musical composition (as an issue), nature's laws, ad infinitum? Is the Sun's interior as interesting phaneroscopically as Earth's or our biosphere (is there some fatal flaw in even supposing the comparability of such things, favoring the notion that "each world may be infinite in itself", alive, evolving, intelligent, infinite, &c?), and perhaps composed of incalculable populations of incalculably diverse and complex phenomena, events, objects, forms, organisms, societies, and ecology with enormous differentiation of levels of evolutionary attainment (a tremendous spectrum of ranges of rate, mass, complexity, organization, equilibria, number, distribution, duration, interdependence, intercommunication, &c--eg possessed of metaphoric hills, streams, layers, crystals, solar systems, meteorology, geology, mineralogy, geochemistry, botany, zoology, noology, architecture, seasons, lightning, seas, caves, waterfalls, cyclones, viscera, theology, vacua, plena, rain, waves, resonances, textures, histories, personalities, &c)? The query is not mad! May our ocean have a similar buried complexity or "side"? In connexion with these upsetting questions, may such complexities reside almost indiscoverably in nature for the reason that an "infinity of worlds" can and do exist, or in effect exist, perhaps with the real complexity of the world as seen or understood being a function of mysteriously indeterminate "points of view" or of level, complexity, intensity, kind, &c of observing, projecting, or selecting intelligence (as I think may well hold)? It may be that extraordinarily time-lapsing or "accelerating" the seemingly dead, rigid, weatherless, improgressive, uninhabited, and eternal Moon might suddenly bring to life such a macrocosmic canvas as just suggested for the Sun and sea if not in terms of unsuspected topographic and petrologic elasticity, plasticity, reactivity, and progress, of slow but very active geophysics, of rains, streams, cataracts, clouds, waves, cyclones, and seas of dust, and of an atmosphere and "biospheric" Sun-Moon interface from the time-dense fluxes of diverse particles of matter and energy rolling and running from the temperamental Sun and involved with the complex, textural, and progressive cyclically infinite rhythms of skeletal magnetospheric, electrospheric, gravispheric, and (solar and lunar) exospheric structures with (as above) their tremendous spectrum of ranges, then in terms of the entire future of the Moon, her infinite 1:1 "microtextural" intercorrelation and autocorrelation with the entire living multiparticulate complexity of the Earth (and Universe) copied on all the multiparticulate rhythmic complexity of the Moon transferred by gravitational (or "cosmometric" ie spacetime) fluctuations (however incomparable might be the selenological "order" resultant therefrom), her crystalline (lattice-excitonic) thermal and Heisenbergian fluctuations (eg of her 10^{49} atoms; "evolutionary histories" could result from these residual or ineliminable quasiparticulate vibrations, rotations, and translations and their orders and continua), and/or cetera). It may furthermore be that the universe is a metaphoric conglomerate in the sense that she constitutes some sort of "plenum" of hierarchically infinitely diverse, interwoven, polyequilibrium, continuously diverse, subtly self-reinforced, anastomotic, historically intricate, &c tenuosities, wavelengths, frequencies, incidents, events, phenomena, systems, "worlds", "orders", &c

*--the Moon should be a computer

--all fitted together in an infinitely deceptive way by infinite contrasts of scale in an endless "musical" topology insubmersibly overlying the continuum; in other words eg, the infinite complexity of the real natural order might continuously hide itself by pneumatically forcing phenomena infinitely differing in strength, rate, number of events, spacing of events, coordinate "melody", spatial extent, &c into the crooks and crannies of one another, the pure relativistic significances of nature (in terms of threshold, least path, figurative "phase diagrams", purely relative stabilities and instabilities, purely relative harmonies or resonances, purely relative surfaces and holes, purely relative homogeneities and heterogeneities, purely idiosyncratic spectral cross-correlations, purely relative dimensional manifolds, purely relative knots, ad infinitum); for this reason I have suggested that the natural universe may be characterized as an infinite or superinfinite hologram combining infinitely or more than infinitely many simultaneous interpenetrating, resonantly divergent universes in the same macroscopic superspace. It may be that the states of the mind survive in nature in a perfect spiritual sense by contributing to its endlessly accumulating, essentialistic complexity, that the mind or thoughts continue to exert purposive, identical, and growing effects upon other minds and inhuman nature or the Universe, that minds are so infinitely complex and ambiguous in their source brains and so kindred and convergent with other minds that our "souls" are in continual or explosive interchange with every other and the mind in effect exists in common with other minds or is continuously reproducing itself in all other minds, that a so-called "noosphere" does exist as a gathering and efficacious store of all thoughts ever thought, that the mind does somehow exert "cultural" and "fateful" (Jungian) effects upon the personal and total physical universe and possibly interact and coalesce with a world that is somehow alive and consubstantial, &c. It may be that nature is filled with a past infinity of order and yet that her phenomena perpetually add thereto in an endlessly growing, ~~convergent~~ ^{divergent} design. Every entity on Earth--^{last} every organism, object, phenomenon, minim, and information or "memory"--may be an instrument in a vast and endlessly climatic symphony virtually infinite in its polyphony and melody, as if, or perhaps in fact because, the world or the universe is a mind dreaming forward in time its themes, characters, plots, chapters, settings, and destinies, enlarging and arranging as it sees fit by laws uncontradictory because internal, organic, and perspectival, the march of the soul. The world may be a convergence, or ~~convergence~~ ^{convergence}, of meanings, adapting themselves to each other in a familial history that constitutes the environment or the world as seen, a concreative and concrescent crucible. The importance of Principle 1 is its assertion that all men are at once the roots and branches of a single noble tree evolving between Heaven and Earth, that the meaning of the world is a vergence in an infinite-dimensional space constituting all that a man is and men are, that meaning combines an exhaustive unending convergence of all our natures in a holy point from which just as endlessly issues an exhaustive novelty and greater fact, that all men and patterns conspire in a single world soul, that human acts live after they are done, that Heaven is the stream of time as the conflux of the infinite melodic consequences of our progressively conscious actual being, that [human history is a single embryonic all-encompassing and endlessly expanding ever-novel civilization indivisible into ^{sublist} true parts or unique meanings or isolated stories or genuine futilities or self-sufficient settings or contradictory phases or proper deviations or finite goals, that no man is identical with another and redundant in the pattern of things, that the human pageant is infused with (an infinitely complex) purpose, that history is like the awakening and voice of a single self-constructing being of unknown purpose but infinite destiny, that [all human institutions, purposes, ideas, feelings, memories, images, works, interactions, lives, epochs, cultures, ventures, actions no matter how inconsequential, creations, &c exemplify a tremendous ^{sublist} indivisible, contextural, concinnous, compassionate, deliberate, self-accelerating, hypergeometric, &c tree and arrow of progress, a cosmogony with an infinitely important future, that human interaction is constantly and universally fateful, that man in fact greatens over his lifetime, that every moment is asymmetric and orthogonal to every preceding moment and the world turns on this axis, that all men draw from one another, that men can bootstrap one another by advancing their mutually influential environment, that the meaning of the world obtains in its transcendental order, that time is never perfectly cyclic but instead always increases in hierarchic complexity, that human lives advance each other, that reality is enormously fertile, that novelties are always emerging, that all men are posted midstream unawares in ponderous currents of infinite destiny, that the world is a living tissue of meaning, that the universe is like a tense web of meaning

Make into
a list.

every touch to which sets the whole in understanding motion, that nothing is truly inert or apart from all else, that the universe is a circuit through which all destinies cycle and every span of which is traveled in each complete instant, that ³⁰⁴⁻⁵¹the cosmos is perpetually enlarging, that nature and therefore science subjunctively are infinitely complex, infinitely challenging, possessed of a superinfinite hierarchy of laws, infinitely exploitable, ³⁰⁴⁻⁵¹&c. I do not know at this point where in nature one should look to find countercurrents to entropy--whether in subtle mathematics or theory, specific epochs or sectors of "the universe", certain comprehensive or synergistic inventories, in certain particles or astronomic objects (eg it is conceivable that in place of the occurrence of black holes gravitational collapse will instead produce interminable sources of energy eg from photoemission of inconceivably compressed zero-point fluctuations; or galaxies &c might represent random spectral Brownian motions in a universal Dirac sea). Continuous or discontinuous compensation for entropy could so easily occur via one or many of innumerable mechanisms already sketchable.

MIARCHY AND PLIARCHY
Pat Gunkel

Foreword.

I have coined these words to signify two partially opposite and partially compatible tendencies actually or potentially characterizing the United States and Earth now and in the future, and of critical importance to understanding things. Miarchy is diminution or a lesser degree or aspect of rule (especially by government, proper) over men superimposed upon or subtracting from individual self-rule, almost regardless of the nature of this rule (eg administrative, nomocratic, and/or normative). It is clear that, in addition to or instead of government, the individual is to some degree ruled by business managers, religions, family, friends, society, conscience, economy, nature, schools, &c. Pliarchy is the opposite of miarchy and refers to strong or increased rule over the individual, and over other social entities. The seeming opposites are actually ambiguous, complexly and mysteriously interrelated, possess some mutual equilibrium, and probably alternate--even dialectically--in time. Miarchic tendencies may conduce to or be in fact pliarchy, and pliarchic tendencies may conduce to or be in fact miarchy.

Possible Reasons For, Causes Of, Tendencies To, &/or Examples Of Miarchy

1. Failures of government.
2. Inefficiency of central, interactive, impersonal, heteronomous, indirect, excessive, disinterested, noncompetitive, abstract, committee-like, redundant, antagonistic, nonperfectionistic, all-coordinating, conservative, unchanging, unevolving, hierarchic, inevitably mediocratic, &c government.
3. Contraproductivity of contracyclical, manipulative intervention in the economy by government.
4. Tendencies to abuse power ("any power corrupts").
5. Subsidence of patriotism and nationalism.
6. Antimilitarism, pacifism, and isolationism.
7. Contraction, disintegration, and abolition of family, marriage, and contracts.
8. Cynicism, individualism, anarchism, egoism, egalitarianism, substitution of reason, intuition, or creative spontaneity for faith, tradition, "form", or conformity; pluralism substituted for unity or collectivism; antiauthoritarianism.
9. Education and sophistication of entire populace diminishing the needs for governmental attention.
10. Elimination, control of, or adaptation to growth or change--eg a post-developed, post-industrial, stationary, fully institutionalized, and/or cetera society--eliminating the justification for much government.
11. Formation of an international community, world peace, or world government enabling the demilitarization of nations.
12. Progressive evolution of norms, laws, standards, associations, social integration, values, purposes, and the character of men within the US and throughout the world alleviating the need for formal, strong, &c governments.
13. Progressive restoration or emergence of gemeinschafts replacing gesellschafts and making for communalism and syntony.
14. Democracy, meritocracy, and socialism replacing totalitarianism, oligarchy, monarchy, plutocracy, single parties, powerful presidents, "politics", bureaucracies, powerful interests, rigid traditionalism, inaccessible hierarchy, foolocracy, &c.
15. Pantisocracy replacing eg representative democracy.
16. Technocracy rationalizing, debureaucratizing, individualizing, simplifying, rendering predictable and reliable, depersonalizing, deideologizing, minimizing, equalizing and universalizing, rectifying, subtilizing, uniformizing, stabilizing, justifying, and transfiguring government.
17. Liberalization of laws, standards, requirements, appreciations, allowances, rights, &c.
18. New technology simplifying government (eg ultraefficient weapons and other techniques of law enforcement, utopian communications, brilliant and comprehensive computers, ideal information retrieval and availability, machines and postures replacing men in the military, future planning, automated distribution, impregnable defenses or offenses, computer knowledge of the economy and econometrics, new methods of garbage disposal in the home, longlasting and adequate highways, automated taxation, future electronic referenda, future automation of traffic, automated education; such technocratic powers enabling the future merger, unmanning, expedition, "generalization", reduction, weakening, and cheapening of governments).
19. New dangers in government (eg excessive secrecy, Parkinsonism, loss of privacy, manipulative ability, caesarism, insidious decay and corruption, access to and control over excessively dangerous weapons, ossification and irrationalization, progressive ownership and interference, pseudoscientific and burdensome nomocracy, excessive military powers, insidious glorification of the state, excessive economic role, elitism, excessive influence, ungovernability, stifling centralism, excessive role in education, excessive

- self-enrichment, excessive unification, intolerable supremacy when world government emerges over national governments and mankind, intolerable privilege when governmental policies determine and direct such major elements of the world as wars, the economy, much of our income, the course and use of science, policies toward other nations, management of industries, political philosophies, education, banefully abusable technology, &c).
20. A sympathetic merger of the political right and left for the sake of individual rights to income, control over one's own business, control over the education of one's family, elimination of inane government controls, elimination of conscription, miniaturization of bureaucracy, elimination of tariffs and limitations to international travel, elimination of redundant governments, tailoring of laws, &c.
 21. Certain governmental functions (eg mail, police, education, insurance) being taken over by private business.
 22. Personal rights to records.
 23. Solution of various social problems.
 24. Minimalization or equalization of income and opportunity.
 25. Public apathy to, and de-emphasization and disobedience of, government.
 26. Electronic credit, detection, prevention, and subsidence of crime (through new technology and universal affluence), &c may in the future collapse crime and reduce government.
 27. Unification of world government simplifying government.
 28. Perfection of political science simplifying government.
 29. Automation or productivity so enormous as to disemploy man and thereby terminate many functions of government.
 30. A new, explicit stress on self-regulability, self-development, maturity, self-accountability, individual excellence, self-sufficiency, personal initiative, responsibility, &c de-emphasizing government.
 31. New standards in government.
 32. Mediocracy, contradiction, confusion, incoordination, powerlessness, abstractness, remoteness, self-absorption, transience, self-limitation, corruption, &c in government regenerating local, individual, and nongovernmental initiative, and tailoring of government.
 33. Consummation of statism leading to its reversal and repudiation.
 34. Eventual triumph, reminiaturization, governmental status, transformation, democratization, unification, total automation, and fading away of large corporations.
 35. Governmental self-limitation (eg legislated forbiddance of wiretapping, data banks, executive power, conscription; judicial circumscription of powers).

Possible Reasons For, Causes Of, Tendencies To, And/Or Examples Of Pliarchy

1. Successes of government.
2. Failures of business, individuals, and other organizations.
3. Inefficient government.
4. Self-aggrandizing tendencies of government: Parkinsonian growth, multiplication and enlargement of powers, its concentration of pro-governmental individuals and exclusion of philosophically anti-governmental men, concern with the entire universe of residual and novel tasks, its autocatalytic growth, its omnipotence and self-determinability, its schizophrenic lack of self-control, its self-protectiveness, its love of grandeur, its religious self-image, its inconsistency, its pettiness, its insecurity, its paternalism, its determinism, its ambitions, its progressive inefficiency, its accretiveness, its acquisitiveness, its infinite absorptive and differentiative powers, its many illusions, its popular origin, its propagandistic powers, its universality, its complicating effects, forgetfulness, its omnicompetence, its persistence, its mechanism, &c.
5. Population growth, concentration, mobility, &c, now and in the future, in US and throughout the world.
6. 150 nations experiencing growing pangs, surging forward socioeconomically, constituting an inchoate community, embracing a titanic population, abounding in monsters, conflicting with one another, becoming scores of "super powers", leapfrogging and competing with one another, complicating any common government, multiplying convergent problems nonadditively and nonlinearly, sustaining all governments for military and political reasons, rendering the world lawless and unpredictable for "many-body" reasons, insuring intense cross-cultural jealousies and hatreds; creating wars, ideologies, revolution, diverse insane behavior, nihilism, extreme and bizarre behavior, antisocial and messianic ambitions, incalculable violence, menacing vagrants, malaise infecting the world in its entirety, potentially catastrophic abuses of new and emerging (and diffusing) technology, &c as the inevitable result of sigmoidal industrial, social, and political transition, say to "post-industrial" status, satisfaction, and stability.
7. Concomitantly with #6, the economic, political, military, cultural, demographic, and intellectual submergence of such developed countries as the US as senior, overwhelming, overpowering, favored, traditional, reputed or actual, unique, mysterious, effortful, dynamic, critical, comprehensive, qualitatively superior, unequaled, unattainable, increasing, dictatorial or influential, few, helpful, independent, impervious, invulnerable, right, "professional", "presidential", exemplary, "consulted", profitable,

unambiguous, unlimited, needed, consistent, universal, catalytic, "equilibrating", virtuous, and suffering leader of the world.

8. *World organization, unification, government* Political, economic, social, cultural, legal, purposive, &c unification and organization of the world and the emergence and strengthening of cooperative, confederal, federal, unitary, and "imperial" world government, preceded by regionalism, anschluss, and perhaps eg a few penultimate "ideological parties".
9. *Social complexity* Increase in societal complexity amplifying the opportunities for and challenges to government.
10. *Big government, institutions* Growth in the power, size, integration, political development, and "essentiality" of big government, big labor, big business, big individuals, and other institutions, organizations, and interests, including their competition and collaboration.
11. *Law* Endlessly progressive development of the number, subtlety, complexity, kind, generality, specificity, hierarchy, detail, intellectual demands, application, authority, power, self-sufficiency, interconnexion, coverage, roles, educational demands, acceptance, cultural significance, organic development, tested nature, finality, governmental significance, efficacy, consistency, and confusion of laws, both within and between various governments; progressive and pure nomocracy; regardless of whether the law represents tradition, science, or legislation.
12. Increasing devotion of government to social purposes and its inexhaustible enlargement within those purposes: economic control (policing, regulation, stabilization, direction, equalization, impropration of wealth; information, assistance, supervision, requests, requirements, stewardship, representation, appointment, partnership, and invention of various--increasingly many, diverse, important, and complete--industries, and similar roles in other organizations and spheres; increasing frequency, absolutism, permanence, importance, systematization, thoroughness, necessity, arbitrariness, blitheness, &c of such interference and invasion), direction of science, social insurance, management of earnings, control of education (span, content, form, personnel, supervision, control over the child; conditioning of his behavior, interests, beliefs, experiences, morals, purposes, directions, associations, and freedoms; uniformity, demands; locations, sizes, and designs of schools; regulation of the family and employer), medical care, imposition of externalities upon business, care of the aged, care of the newborn, regulation of products, control over agriculture, peacetime conscription, declaration of and redistribution to the "underprivileged" and "rights deprived", "democratization of management", socialization of science, reconstruction of environment, provision for posterity, subsidizing of the unemployed, reducing the need to work; reducing the need for prudence, planning, initiative, insight, effort, excellence, improvement, care, provision, "goodwill" in business, innovation, enterprise, character, ability, learning, perfective struggle, merit, friends, family, community, death and change, adventure, seniority, organic growth and adjustment, natural development, &c; determination of the magnitude of the military and other services "essential" to protect and otherwise benefit the individual (using his money), &c.
13. Failures of the family, school, other institutions, traditions, standards, religions, mores, traditional authorities, professional ethics, the scientists, traditional aristocracies, social agencies, and government compelling the (tendentially irreversible and corruptive) enlarged, diversified, acceleratory, crude, regular, stable, necessary, profounder, all-embracing, and absorptive intervention of and compensation by government.
14. Hasty, forced, fatal, collective, simplistic, destructive, national character-shaping, illusory, character-aborting, ideological, compensatory (neighborly), &c adoption of totalitarian, socialistic, communistic, stratocratic, prematurely or excessively democratic, authoritarian, centralistic, "dirigisme", ideocratic, "revolutionary", bureaucratic, hierarchic, nomocratic, technocratic, artificial, &c governments by the many developing countries.
15. Excessive democracy, submergence of timocracy, disappearance of aristocracy, triumph of nomocracy, overattention to government, &c leading to aggrandized government as a result of mediocracy, inefficiency, confusion, lack of purpose, meaningless compromise, absorptive bureaucracy, moronic committees, &c.
16. Cycles or sequences analogous to: (king, chief, or other legal despot) → (sacred king: Stalinism, Hitlerism, or Maoism) → (aristocracy) → (oligarchy) → (democracy) → (anarchy, egalitarianism, or deadlock) → (tyranny, Caesarism, or Bonapartism) → (princeps) → bis.
17. A tendency or capability for disastrous, aggravated, or peculiar lingering or fixation in bad or pliarchic stages of such evolutions, alternations, circles, or drifts owing to: the Earth's full occupation; the panocratic, cosmocratic, technocratic, scientific, eutopian, democratic, &c capabilities distinguishing today and the future; the steadiness of past progress, the world's new requirements, further technological possibilities and scenari, &c.

18. New, developed, or altered technological capabilities, requirements, challenges, mixes, situations, options, possessions, dangers, &c for or in terms of such things as fuller, total, complete, absolute, or pluperfect coordination, supervision, knowledge about, understanding of, control over, or design and limitation of society, government, the individual, the environment, and/or the world, say involving neurotechnology, data banks, world-computerized money or credit, supervised public or private transactions, surveillance of homes, monitoring of movements and expressions of all citizens by elaborate person-carried transceivers, intelligent machines of human or superhuman powers, mentally and physically totally irresistible and "perfect" weapons, ability for and practise of examining part or all of the brains of individuals, capability for and practise of direct installation of information, directions, and even "character" into individuals' brains, capability for or use of dictation of movements of all citizens (eg "supercontrolled" cars, doors, and other facilities), capability for and use of partial or total erasure of men's thoughts (even a society where such artificial amnesia is done on a yearly or daily basis, originally, as a matter of individual discretion or preference, eg to regenerate the psyche, perpetuate youth or childhood, repair "psychological damage", prevent axiological doubt or "wasted thought", segment life into "episodes", &c), central and paternalistic control over energy distribution so that a "disobedient" or "unruly" populace can be threatened, punished, immobilized, or decimated by shutting off part or all of the (heating, transportation, communication, entertainment, purchasing, and/or cetera) system (and use of such a capability by a benign or malign government or bidders for power), "ultimate" military powers and capabilities, "opiatic" and "super-opiatic" powers in the hands of men or their governments (eg means for perfectly universal, easy, direct, cheap, mass, enduring, irresistible, instantaneous, total, enviable, corrupting, addicting, "metaphysically revolutionary", perhaps mind-destroying, and/or cetera pleasure, or the like), a technologically "craddled" culture (eg living wholly indoors, at home, in bed, or in container; cf. E.M. Forster, "The Machine Stops"), electronic voting (where the outcomes might be falsified), some "institutionalization" of the economy (eg "higher" econometrics, total direction to esoteric goals and purposes via esoteric means for esoteric reasons, total control of the resources, buyers, sellers, middlemen, products, sources and sinks of money, and even values, wants, and needs), some ultimate role of government in the intimate details of formerly private lives, some overall central, impersonal, or indirect coordination of the specific acts of individuals, greater amenability of governmental capabilities to popular specification, "ultimate" weapons in the hands of bad people (eg plague bacilli, big or portable nuclear bombs, invisible and inaudible long-range lasers for "perfect" assassinations, ingeniously-deliverable "ultra" poisons, sprayable "LSD", various and sundry (eg "dime store") doomsday machines, intelligent machines, "stooge" or "executive" robots (incl. armies), ultra-dangerous scientific experimentation or industrial processes, fearfully great energy resources, eugenics or other engineering of the human "species", conception and raising of children in governmental laboratories, education by "higher" technological means, governmental contraception, dependence of man on controllable robots, broadening of the criteria (or eg perception of) "mental illness" and dangers in its institutional and technological treatment (eg if 2% of men are schizophrenic, 10% mentally ill, how many are neurotic, occasionally ill, subclinically ill, imperfect, logically, ideologically, or axiologically "ill", &c?), perfect technological identifiability of men, military-technological capability of enemies too enormous, risky, threatening, demoralizing, inanswerable, exploitable, &c to tolerate or not preempt, complete and perfect centralization of entire normal and supernormal government (and masterful control over, coordination and synthesis of, &c such data and acts), new and perfect means for spying on individuals (conversations, records, lives, pasts, movements, &c), superb or perfect communication (perfectly instantaneous, distant, ubiquitous, cheap, reliable, realistic, capacited, voluminous, ready, accessible, exploited, controllable, and un/available to others), scientific, technological, and/or social things too dangerous, uncertain, questionable, offensive, deviant, abusable, &c to tolerate, new technological responsibilities (eg to monitor and supervene in terms of the correction & improvement of the ecology of the ocean's "primomillimeter", of the pollutable and modifiable atmosphere, of the global climate, of the corruptible chorology, of human biogeography eg in the proper and ideal location of new and growing cities, of the proper specification of potamic and lacustrine temperatures, of artificial ecologies; the development of outer space, the ocean, Antartica, global resources, solar energy, &c; to control developmental experience and environment because of the origination of a pedological, sociological, psychoneurological, architectural, &c science thereof (eg based on demonstrated need for a complex, natural, active, "full", healthy, "proper", &c childhood environment), &c), and/or ad infinitum.

19. The modern, human, or mental tendency to or ideal of organizing, managing, integrating, controlling, systematizing, and, indeed, governmentalizing everything--and the increasing, cumulative, and transformative basis, capacity, "painful" sophistication, tendency, need, want, and tendency therefor; the subtle but ultimate philosophic equivalence of organized and unorganized lives; the expansion, maturation, and perfection (certainly the success, prosperity, and endorsement) of descriptive, experimental, theoretical, and technological science (political, sociological, psychological, moral, axiological, economic, legal, methodological, &c); the inevitable and infinitely complex and ramified interface of the social and individual.
20. The extraordinary increase of species, individual, and social wealth (complication of society multiplies governmental chores, responsibilities, urgencies, opportunities, structure, functions, powers, pervasiveness, &c).
21. Because the future is long or infinite, the world is filled with 150 arbitrarily self-expansible nations, man is what he is, nature is what she is, technology is creating such a novel world, trends are what they are, history is what it is, we are where we are, &c there is the possibility, probability, or certainty of Caesarism, new romantic and ideological movements, social effeteness, weakness, &r sickness, new public enemies, &c that will accompany or cause pliarchy; power gets abused.
22. Static and dialectical oscillation between miarchy and pliarchy; rational and less so.
23. Inevitable or possible future world disaster(s): accidental or intentional nuclear or "transnuclear" wars, accidental peaceful self-devastations of the human race, world revolution (against now obscure or absent enemies or situations), world anarchy, &c.
24. New roles for government, eg maximize economic growth, dedicate society to science, assume all labor, prosecute perfect automation, perfect eutopia, challenge society, raise children, develop outer space, assign men "purposes", serve as the dialogical contraplete to the media, mostly oversee itself, outdo other governments, "maintain" everything in a post-growth and static world, train individuals for professions, assist other countries, &c.
25. Men learn wisdom by first testing extreme opposites and by hard knocks, thus arriving at the golden mean (of course, if wisdom is hard learned, fast forgotten, then man must needs oscillate forever, as history suggests); so man may be destined to consummate pliarchy to learn his lesson, although perhaps uselessly; certain it is that our course, the rightness and error of pliarchy, are not foreknown.
25. Strong government, a strong hand, a Draconian measure in the law, may be right and contribute to strong and yet ideal order; "strength", here, refers to tough law enforcement, even brutally tough, to character and authority in government at all levels, to patriotism and love of country, to rigidity and fixity in government, to not watering law and Constitution, to international manliness, to respect for authority, to a mild religiosity about government, to hierarchy and senior supervision, to exigent enforcement of laws, to partial but considerable extralegal (general, creative, intuitive, ad hoc, embrasive) powers of officials and officers, to government having a philosophic and pedagogic mission vis-a-vis the public, to the value of the state as a human symbol and a work of art wrought through the ages by mankind, as something higher; it is instructive to draw analogies between government and family, with the state as an extended, adult, and greater family nonetheless functioning along similar lines (the supernormal men recruited in government exemplify conduct, sanction acts, instruct behavior, moralize and philosophize, embody the maturity of ordered social process, and direct the nation--all "parental"; and the men are "aristocratic" in knowledge, intelligence, and ability directed to government, especially considering how lowly the average man (American and world) is).
26. Pliarchy is right, or at least necessary, because 99%, 90%, 51%, and 30% of people are (surprisingly) dumb, abusive, childish, irresponsible, ignorant, incompetent, dependent, selfish, uncooperative, weak, reckless, hysterical, compromising, &c; this applies a fortiori to the underdeveloped world, and it may apply in an added way to the future if educational and behavioral standards, as they may for foreseen causes, decline in the future; it is at least obvious that there is a tremendous opportunity for society if she lets herself be governed by an ascendant meritocracy with genius at the apex managing and directing the immoral, purblind, and unsophisticated multitude.
27. Pliarchy composes, and miarchy decomposes, culture.
28. The world may be a Darwinian competition favoring the aggressive, offensive, transgressive, progressive, totalitarian, mighty, organized, zealous, ideological, wicked, brutal, &c and so it may be that, both within and between nations, governments, ideas, men, and nations are apt to succeed and triumph to the degree they are contributors to and examples of pliarchy.

29. It is those who favor government, big government, and a secular trend who go into government.

30. The traditional ^{abstract} leftist, ~~class~~ extremist, ~~class~~ ideological, critical, simplistic, idealistic & humanistic, antibusiness, interventionist, interest, progressivist, dictatorial, totalitarian, nihilist, revolutionary as opposed to ^{concrete} evolution.

SPACE EVENTS YET TO BE DATED
Pat Gunkel

Note. The following events for the future of space are presented in a preliminary attempt to exhaust such possibilities. They are unaccompanied by dates so that the readers may post their own and subsequent discussion (occurring in "Delphi" fashion) may converge or diverge such opinions, and allow better assignment of such events to the period of the next 200 years (1976-2176) divided into a "calendar" of 8 quarters. It is hoped that readers will contribute additional ideas for events that I will have overlooked. My statements of events may be imprecise, flawed, excessively broad (better divided into several component events), or presumptuous. It is hoped that a framework of ideas will emerge from this initial exposition of what space may mean as a human endeavor inspired by various purposes. A blank column is provided on the left for insertion of dates guesstimated. Other systematic questions pertain to the absolute probability, the desirability, accelerability, importance, complexity, implications, interconnexions, contradictions, priority, ranking, preconditions and assumptions, order, equivalence, hierarchy, &c of the various and sundry possibilities. Obviously this greater contexture is the heart of Hudson's preview of the next 200 years in space.

1. General deployment of space defense.
2. A lunar base (eg 20 men, existing 6 months or semipermanently, 15 rooms or 3 buildings, using some local resources and energy, feeding itself, conducting multifarious research, assembling and perhaps extending itself, &c).
3. A series of such lunar bases (eg 5 scattered around Moon).
4. A detailed (eg resolution of mineral resources on surface into kilometer or meter squares) map of lunar mineralogy undertaken or extant.
5. Such a map for Mars.
6. Such a map for a large asteroid (eg 1000 km d Ceres).
7. Such a map for a Jovian moon.
8. Such a map for Pluto.
9. Such a map for Mercury.
10. 1000 men on Moon.
11. 100,000 men on Moon.
12. 100,000 men on Mars.
13. First discovery of extraterrestrial (self-reproducing) life.
14. First discovery of extraterrestrial "higher plant or animal".
15. First manned laboratory on Venus.
16. First manned laboratory orbiting or passing as close to Sun as Mercury.
17. First manned probe to, or landing on, Pluto.
18. Colonization of Earth's Lagrangian points (a la Gerard K. O'Neill).
19. Launch of an interstellar probe.
20. Movement of an asteroid out of orbit, eg to #18 or Earth (Ceres $\sim 6 \cdot 10^{29}$ er
21. First extraction and/or synthesis of extraterrestrial fuel, eg lunar.
22. First manufacturing of oxygen from extraterrestrial, esp. lunar, soil enabling colonial self-sufficiency.
23. First manufacturing or growing of an adequate diet from extraterrestrial materials (eg lunar agriculture).
24. First industrial use of space.
25. Break-even point for total simultaneous space industry (space becomes profitable).
26. First private adventure, periterrestrial or beyond.
27. First corporate profit from space.
28. Beginning exodus of individual Terrestrials into space.
29. First spacial nativity.
30. Intrajovian probe to the planet's solid surface (if any) or deep atmosphere.
31. First or massive mining of Venus.
32. First wholly automated space flight.
33. Robots working in space (so flexibly as to climb hills, mine in tunnels, surpass men, pilot ships, roam over entire planets, transmit superb impressions of their environment, learn and innovate, farm, run factories, operate in teams, repair themselves, construct buildings, man weapons, run complex scientific experiments, &c).
34. A chain of 2-10,000 small nuclear bombs dropped (eg 1/minute, 1000/day) into a thus-excavated hole in eg Moon.
35. First peaceful nuclear explosion on Moon.
36. Probe reaches Moon's center.
37. First in situ mining and refining of an asteroid.
38. First occupation of a hollowed and spun asteroid.
39. First project of "Dysonian" stature.
40. First transmission of energy from space for terrestrial purposes.

41. First determination of the existence of life on another star, esp. first detection and translation of an interstellar signal or message.
42. First acquisition of such information from civilizations of other stars as to revolutionize our culture.
43. First use of "Von Neumann machines" (ie self-reproducing, life-like automata able, through pullulation, to substantially transform an immense environment per artificial purposes; roughly, artificial biota serving industrial purposes; cf. Freeman Dyson).
44. "True" artificial intelligence.
45. "True" superhumanly intelligent machines.
46. Speed of light proven exceedable.
47. First transluminary success, communication, or transportation.
48. Objects lifted into orbit by hypersonic transports (HST's).
49. Objects lifted into orbit by using ground-based lasers to ablate-propel them.
50. Use of linear motors or other ramp systems to launch craft or objects from the lunar surface.
51. 10,000 men (women, and children) occupying Earth's Lagrangian points a la O'Neill.
52. Photopropulsive craft in space.
53. Ionic-engine craft.
54. Fission craft (eg gaseous core, nuclear-electric, pulsed, solid core, &c).
55. Fusion craft.
56. Use of astronomical balloons to mine, refine, energize, atmospherize, and/or propel asteroids, Moon, other planets, and (incl. weather control) Earth, a la Pat Gunkel.
57. Mass agriculture in space to feed Earth (using the superabundant sunlight, low gravity, and room).
58. First "serious" use of space for medical purposes (space hospitals).
59. First periterrestrial or extraterrestrial tourism.
60. First commercial hotel orbiting Earth.
61. First large-scale manufacturing in space for exportation of products to Earth.
62. First "entirely self-reliant" subcivilization in space.
63. First conscious "spacials" or spacial citizens.
64. Construction or completion of a "nonplanetary" or Dysonian band or sphere about Sun capturing her 10^{41} erg/y emission for local or remote industry, population, &c (Earth receives $4 \cdot 10^{31}$ erg/y from present sunlight and man uses about 10^{27} erg/y of fuel; a megaton fusion bomb releases about 10^{22} erg).
65. First "terraforming" (transformation of the entire, immense surface and/or atmosphere of a planetary body so as to approximate it to Earth or render it habitable to man or suitable for human purposes; eg Carl Sagan has proposed using algae to terrestrialize Venus, Freeman Dyson has pictured transferring the ice from Saturn's moon Enceladus to Mars to give the latter an ocean and atmosphere, and various suggestions have been made for increasing the lunar atmosphere).
66. Expedition to another star.
67. 50-99% conversion of matter into usable energy.
68. Relocation of a planet (eg Mars closer to Sun, Mercury orbited about Earth).
69. Transfer of a moderate asteroid to one of Earth's Lagrangian points, eg L5.
70. Modification of Sun for scientific, energetic, propulsive, "mining", and/or other purposes.
71. Discovery of a "transnuclear" source of energy, presumably coming out of particle physics or astronomy.
72. "Mining" of the jovian planets (eg hydrogen, helium, carbon, &c, or even hypothetical substances in hypothetical cores or layers).
73. Terrestrial or intraspacial use of Jovian protium or deuterium for nuclear fusion.
74. Examination for possible stratification and mining of the numerous Saturnian rings, which are corpuscular.
75. 10^4 - 10^6 tons in Earth orbit.
76. 10^4 - 10^5 tons of freight annually exported from Earth into space.
77. Payload deliverable into space from Earth at \$50(1975)/lb.
78. Payload deliverable into space from Earth at \$10(1975)/lb.
79. Reusable space shuttles.
80. A United Nations space undertaking, force, or "administration".
81. Lunar mining of fissionables.
82. A Mercurial and/or perisolar power plant relaying solar energy to Earth or interplanetary loci.
83. Discovery of usable volcanoes, geothermal energy, "petrochemicals", other combustibles, and/or other endergonic reactants on or in Moon or other planetary bodies.

84. Magnitudinous use of sunlight on Moon to drive solar cells, hydroelectric generators, and/or other convertors, motors, and devices.
85. Materials dropped "meteorically" to Earth (deserts, ocean, Antartica, &c) for crude recovery.
86. Installation of an astronomical observatory and gigantic or planetary telescopes on Moon's backside.
87. 100-10,000 asteroids since "visited".
88. Reception of an intergalactic message.
89. Launch of a cross-galactic probe.
90. Launch of an extragalactic probe.
91. Disposal of certain lethal Terrestrial wastes in space.
92. Performance in space of certain experiments, processes, or undertakings too dangerous on or near Earth.
93. A fair idea possessed of the kinds, abundances, distributions, maps, recoverability, and value of the total resource wealth of Solar System.
94. "Absolute minima" of transportation, maintenance, and operations costs, including "maximal" economies of scale, &c.
95. Military or commercial hypersonic or suborbital transport, travel, and/or commuting across the globe.
96. Creation of an artificial moon, or its equivalent, to lighten night, perpetuate day, increase agriculture, delatitudinalize Earth, deseasonalize Earth, control global climate, &c.
97. Explanation and prediction of longitudinal (days, weeks, months, years, centuries, and more) weather on Earth in terms of exospheric, magnetospheric, and heliological phenomena, and perhaps its, and even their, control.
98. Nuclear bombs used on Moon for construction purposes, eg the building of underground cities, tunnels, and storage places ("termitaria").
99. First intraspacial hostilities.
100. Discovery and occupation of natural caverns in Moon and other bodies.
101. Discovery and use of natural water on Moon or asteroids.
102. Erection of giant atmospheric domes, eg intradomal cities, on Moon and other bodies.
103. Agravitic, antigravitic, and/or supergravitic discoveries or inventions.
104. Discovery, and exploitation (eg for energy, inventions, material, adventure, &c), that Universe is in some sense a "plenum" (eg of infinitely dense hierarchical structure, constituted of an infinity of particles and forces, infinity-dimensional, &c; a Diracian, Wheelerian, Hoylean, Dudleyan, Gunkelian, &c "sea") rather than a "vacuum".
105. Space propulsion using nuclear explosions (cf. Project Orion).
106. Use of solar wind to sail about Solar System.
107. Use of stellar "breezes", light, gravity, magnetism, **cosmic rays**, enantons (alternating matter and antimatter, cf. Hannes Alfvén's Worlds, Antiworlds), cosmic blackbody radiation (eg handled anisotropically), &c to sail Milky Way and beyond.
108. Probe to Milky Way's center.
109. Interstellar "asers" (those espousing interstellar communication preexisting in a cooperative community might be compelled to presume as well ready or elicitable artificial interstellar flows of energy tappable by members; certainly the value of such artificial currents or beams is obvious, even for collinear commuters).
110. Communication using gravitons (Leon Brillouin, Relativity Reexamined, proposes using "grasers", by which he means gravific "asers"), meson beams, neutrinos, or other exotic, esoteric, or unknown particles, waves, principles, electromagnetic grasers, &c.
111. Revolutionary offensive systems using outer space.
112. Direct broadcasts from satellites to home receivers.
113. Proliferation of participants in space (NASA, corporations, UN, all the Great Powers, 10-20 lesser powers; eg US, USSR, UK, France, FRG, Japan, Italy, Canada, PRC, India, Mexico, Brazil, Iran, Arabs, Israel, Australia, Poland, Sweden, Czechoslovakia, &c).
114. Navigation of whole planets or solar systems cum stars about the galaxy (Fritz Zwicky) and reconstruction of galaxies (Olaf Stapledon, Pat Gunkel, &c).
115. Technological "teleportation", the transmission of material objects.
116. First meeting with beings of an extraterrestrial civilization.
117. First exploitation of John A. Wheeler's "superspace".
118. Population of Solar System, a quadrillion (10^{15}).
119. First probe or ship moving at relativistic (at least 0.1 c) velocities.
120. 10 stars inhabited by Homo sapiens or its derivatives.

121. Horizontal takeoff and landing systems for space (spaceplane).
122. 17-25 Mach ramjet.
123. Analogues to ramjets wholly or partly fueled by atmospheric extracts, suitable for operation in the atmospheres of other planetaries (Venus and the jovians, as well as Earth), perhaps interconvertibly or universally, and perhaps even able to regularly hurtle themselves into space and back or across to other planets (eg Earth=Venus), or operating as purely spacial and atmosphere-skimming craft in perpetual motion.
124. "Boats" on some layer or isopycnic of Sun--moving and operating by sail, "ramjet", or "Brownian motion" if not endogenous fuel--for scientific, exploratory, power-relaying, heliacal engineering, mining-mineralogical, manufactural, or other purposes, being either homiotherms or poikilotherms with suitable electronics and mechanics to withstand the anomalous, hot, violent, and noisy conditions.
125. Intrastellar probe to enter, and perhaps leave, solar strata and structures (eg the corona, chromosphere, and regions below the photosphere; the prominences, faculae, sunspots, poles, and other quasi minute features and complex phenomena) and perhaps sample local matter; a subsequent generation of intrastellar devices for exploration, experimentation, or mining.
126. Ingenious devices for "mining" Sun (eg her heterogeneous corona which extends millions of miles and contains iron and nickel), including ingenious techniques (cf. #70).
127. Magnetogasdynamic (MGD; magnetic and electric fields coupled to plasma) spaceship.
128. Terrestrial acceleratory ramps using linear or nonelectrical motors to launch craft or freight ("antimeteors") into or toward space; the tremendous advantage of this mode of launch is its economy from not using fuel to lift itself (if shipless freight could be trajected a further "double" economy would be realized by absence of shell weight and friction).
129. Use of tremendous & swift flywheels (incl. spun asteroids or rocks thereof) to store energy in space, on Moon, asteroids, &c in light or zero gravity and extreme vacuum; superabundant and all-sized asteroids may possess considerable natural counterrotation that might provide local energy (spin spectrum =? possessed of negligible gravity, asteroids can be brought arbitrarily close to each other).
130. Moderately or highly efficient landing energy-regeneration systems (operating like buses using motor-generators, levitated trains in gravitational U-tubes, and a bob on a pendulum--as well as countless other critically-dependent natural phenomena--to store braking for relaunch so that interplanetary & intrastellar transport might eventually become isentropic and costless; such unlikely "elastic" ideas are actually eminently feasible, especially in the light of new and future technology); note the "isentropic" analogue of automation (discounting initial expense over eternity and combining regeneration with complete automation of operations, future space transportation costs could become virtually zero or capacity-competitive).
131. Large Terrestrial vertical, rather than diagonal, accelerators to hurl packages up eg to a broad Earth-parked planetoid (Dandridge M. Cole and Donald W. Cox, Islands in Space, suggest the last might have a magnetic retrieval field).
132. Miniature nuclear reactor, solar energy, or other novel engine systems for ground vehicles on Moon, Mars, asteroids, &c (note that the vacuum, low gravity, intense sunlight, &c of such landscapes could give them unmatched opportunities for primitive and sophisticated transportation systems).
133. "Mining" of upperatmospheric helium (or other gases) by low satellites using immense conical collectors.
134. Direct fission or fusion mining of planetaries.
135. Most people living in space and off planetaries.
136. Astronomical machines (eg gigantic catoptrical balloons) melt asteroids and blow them into immense habitable bubbles, vitreous & metallic (Dandridge M. Cole and Donald W. Cox, Islands in Space).
137. Matter-antimatter propulsion.
138. 10^2 - 10^6 ton payload in single launch from Earth to space.

139. First achievement or some customary use of engines/velocities of 150,000 ft/s (100,000 mph, 0.00017 c); going to Pluto from Earth requires only 50,000 ft/s).
140. First achievement or some customary use of engines/velocities of 300,000 ft/s (200,000 mph, 0.00034 c).
141. First achievement or some customary use of engines/velocities of 600,000 ft/s (400,000 mph, 0.0007 c).
142. First achievement or some customary use of engines/velocities of 1,500,000 ft/s (1,000,000 mph, 0.0014 c).
143. First achievement or some customary use of engines/velocities of 10,000,000 ft/s (7,000,000 mph, 0.01 c); what is the curve of engine/velocity increase from lowest Earth orbit (25,000 ft/s, 17,000 mph, 0.00006 or $6 \cdot 10^{-5}$ c) to the velocity of light (c, 1,000,000,000 ft/s, 700,000,000 mph)--a difference by a factor of 17,000--and what will it depend upon?
144. Terrestrial cargo landed on Moon for \$50-100/lb (round trip \$70/lb).
145. Gaseous core nuclear ships able to land terrestrial cargo on Moon for <\$1/lb (and to travel between planets for "a very few dollars").

REASONS FOR A LOGISTIC CURVE IN GWP GROWTH
Pat Gunkel

1. Such a curve fitting world population growth (caused by industrial negation of need for large family and many conceptions, increasingly perfect and pervasive contraception, developing attitudes about the need and number of children, altering religious attitudes, &c).
2. Attainment of equality of income and standards of living (a classless society) fueling the disintegration of competitive and aspiring drives.
3. Answering of basic needs, wants, and even "luxuries".
4. "Short-cuts" to growth and ever-simpler industrial processes, products, and lifestyle (eg simple recreational facilities, omnipresent books, hand computers and pervasive computers, the "self-sufficient" television and the extraordinary entertainment industries of the future, mass transportation again coming to replace individual vehicles, means for (home and industrial) food storage, food syntheses replacing gigantic agriculture, development of ultralonglasting products (eg electronic, the new home, modular repair, future automation of repair, supertough materials), piped materials; communication, information, and computation replacing transportation, travel, and even commutation; artificial replacing natural materials and things, nuclear vs. chemical fuel, superconductive electrical transmission, cheaper lighting, heating, and air-conditioning systems, hybrids and strains; automation, resource recycling, wearless energy sources eg fusion and solar).
5. Idea of limits to resources, energy, and environmental capacity; the limits may be dynamic or static; world lands are "coverable"; but cf. #12.
6. Idea of limits to science and technology (eg most or the best discoveries, inventions, and/or innovations may be past; the future may show diminishing returns; further progress may be progressively difficult; additional great progress may await a remote epoch; the world may now show less interest in possibilities and science; nature and science may be finite and simple; practical and social returns may now especially diminish); but cf. #12.
7. "Softening" of the economy away from heavy industry or production-for-production to production-for-the-people; triumph of the services.
8. Loss of incentives, motivations, and traditions of work; death of the work ethic; shrinkage of day, week, year, and career spent working, cum ever-growing (relatively, absolutely, and importantly) feriation, vacation, and "sabbaticals"; "idealized leisure" permeating world; eventual "anti-work" attitudes; "leisure" is comprehensive (if not pleasure, then sport, science, mental or social games, altruism, art, craft, adventure, ad infinitum; it substitutes for everything for everyone, and can grow endlessly and irresistibly); illustratively, best movies and television programs are re-showable and, once sufficiently numerous, will not need to be shown twice or added to; an understood pattern for the good life may form in the future which did not exist, was forgotten, or was impossible in the past; the future may be unmotivated because trouble-free (no or meaningless economic cycles, no wars since the world content, no concerns for personal or national survival, no tragedies, not even any rigorous labor).
9. Automation actually replacing men and saturating necessary work, and enabling or even compelling disemployment, and points graced in ## 2, 3, 4, 7, and 8; apart from its scientific greenness, automation has been resisted alike by labor, management, and government, and its revolution has yet to occur, but will probably transpire fairly suddenly and quickly; eventually every job and human endeavor will be automated.
10. Developing nations may not fully repeat the style of the past United States (fierce capitalism and entrepreneurship, conspicuous consumption, waste and inefficiency, irrational development of the national economy and blind empiricism cf. #4, business dynamism (eg competitive buyers and sellers), growth economics, Darwinian survival (active maintenance), singleminded economism, scientific-technological transformation of industry cf. #4, pushing and pulling business cycles, job-careerism, institutional objectives, geographic (internal and foreign) expansion, military competition, &c); eg they may be sociocratic, socialistic, planned, unprimed by a strong and lasting population explosion, "rural", modest, cooperative, &c.
11. Meaninglessness of "GWP" (eg incommensurability of new growth, eg the growth of science is difficult to identify with economic growth).
12. The actual pattern of the world's growth has been and will probably be undular and made up of numerous recurring inflection points.

SEVERAL PROPOSALS

Pat Gunkel

Role and Form of the US Military

Our military forces reflect in their design arbitrary origins in history, and, in the light of the present and future, and a superior intelligence, ought be reconceived and recast. The purpose is economy and a more realistic response to the challenges of a threatening world.

The three branches should be fused into one. This would lessen redundancy and coordinate personnel and materiel into a more decisive agency. It would also face the fact that present and future wars will naturally involve a novel integration of forces in intricate tactics and synergistic strategy, an integration superseding causes and justifications of separate forces in the past.

The new entity should have three functions: anticipation, retaliation, and escalation. Its supreme function should be that stabilization of the integrity of the United States and other nations which is in the American interest--roughly the maintenance of the global status quo, and the prevention and termination of international wars.

But the policy and practise of this American force should be novel, appropriate to the new realities. It should be to defeat the belligerent will of any parties initiating war by invariably and totally preventing any possible offensive gain, by exacting cost in a demonstrably lawful way. Or, if American politics confine our military function to the narrower or shallower interest of the United States, and away from a role as keeper of the global peace (a function which might be assumed by the United Nations), the same stance should be taken: the United States will suffer no injury without equal or punitive redress or reaction.

The heart of the novel policy is a reconstitution of our forces by a substitution of effective materiel for a large "army" and sacrifices of American lives and liberties. Weaponry is to replace soldier and a clear, rigid, and elaborate Ladder of Retaliations and Escalations is to replace those ambiguous and varying reactions that in the past have caused ourselves to be exploited or tried by parties plotting possible gain. It will be, in effect, as if the realm of war is absorbed into the realm of law.

Such a policy should in turn temper the attitudes of nations in general, and promote the institution of a global peaceful nomocracy, subjecting any international (and perhaps thereafter civil) war to police and court.

I believe that nuclear weaponry should be distinctly included in the new force as a relatively liberal retaliatory and escalatory measure. That is, I believe that in the long run, balanced across the injuries of years and possible discomforts of criticism, the more active use of nuclear weapons, beginning henceforth, will prove to have been prudent by defeating open warfare between belligerent nations prompted by hopes of gain. War, as a possible means of changing borders and governments, will be disempowered.

Pursuant to the new function, The Condign Force, and it should be so titled, would operate with an army reduced 2 orders of magnitude, with a strategic capability for inflicting perfectly but merely unacceptable cost on any aggressor (and here the emphasis would be on insuring infliction absolutely, with a sane, small delivery--for addressed are the causes for another's initiative), and with a maintained or enlarged direct involvement in scientific, technological, and strategic research and development replacing the former army and redundant materiel. The traditional importance of the military for the development of science and technology would be rendered explicit and primary, and these functions would be greatly enlarged, and fused with an explicit simultaneous development of science and technology for comprehensive, nonmilitary social purposes. In this way America's lead over her adversaries in these domains would be maintained, her adversaries would be compelled to redirect their military monies to the production of broadly and globally useful things, the futility of war would be maintained, society would benefit in a positive way, wasteful personnel and materiel would be reduced, the world in general would devote itself to good purposes, and ultimately the futility and irrelevance of war might be discovered.

To cite a few possibilities:

- (1) Economic growth and progress in general should eventually destroy many of the causes of war: ideologies of maldistribution, scarcity, exploitation, industrial classes, empire as opposed to laissez-faire production and trade, need, distrust of *modi vivendi*, "foreigners"; unscientific religious conflicts; needs for empires, powerful and divided states, excessive governments; feasibility or sanity of war; undisciplined human beings; humanity undirected and uninspired by higher things, vistas, and knowledge.
- (2) Artificial intelligence is imminent.
- (3) A playful, leisured, fully educated, content, "miarchic" (characterized by reduced and minimal government), cosmopolitan, materialistic, social, &c world may be imminent.

VARIOUS COMMENTS ON OUTER SPACE

Pat Gunkel

1. Education and interest in science are continuing to grow throughout the world. The fascinating fact as far as man's involvement in outer space a century or two hence is concerned is that world science will be enormously advanced over what it is today, eg if world population in 2050 is 10 billion, that will be 50 times current US population, and yet at that point average education and scientific involvement will be way beyond what it is today, and coupled with a fantastic GWP. Today the world is illiterate. The US is still in a largely preautomated stage which compels her workforce to concern itself with almost no science. This applies both for white-collar and blue-collar, or regardless of presumed innate differences in ability and interest, particularly with regard to what is required to make a real contribution to science. Men of lesser ability could still contribute to scientific industry or laboratory research instead of to other industry, men of average ability can make intellectual contributions to science, those of 135 IQ number 2,000,000, countless men of greatest IQ or ability are not in science, and total automation could enlarge (and arbitrarily) the simple bases of scientific industry (in turn freeing even those within science): the picture is of a fantastic increasability of the scientific enterprise. Coupling this domestic with the previous world fact, science already in 2050 could be, in sheerly quantitative terms, $100 \times 100 = 10,000$ times as large as it is today; for qualitative reasons, it is likely to be effectively even greater, say 1,000,000 times science in 1975. Moreover, what science is occurring today is ill-organized, very redundant, and motivated by and directed towards small and imperfect purposes (eg wastefully redundant military and commercial intensity, trivial products and product changes, stagnant lines of research, overly applied purposes, ridiculously arbitrary --pecuniary, political, defensive, medical, momentary or short term, sensational, adventitious, "career", commercial, vulgar, irrational, &c-- purposes, &c). And a peculiarity of science is that it is cumulative and self-accelerating. There are a host of reasons for thinking that science is accelerating intrinsically. These further considerations multiply the visualizable "largeness" and importance of science as of 2050 (not to say 2150,...) and suggest that science by then may be 10,000 to 100,000,000 times as "important" then as now. This neglected, absolutely extraordinary fact is decisive in painting a picture of scientific accomplishment by and in 2050 and 2150 insofar as outer space is concerned! It is a little like Herman Kahn's estimates of increasing computer capacity (eg an increase between 1967-2000 by a factor of 10^{11} - 10^{16}).
2. The cost of developing space may be low: Estimate GNP and GWP growth by 2050 and 2150, and take cumulative, instead of annual, product by those dates (one might also argue that by those dates space should have paid for itself x times over in the net, even stochastically). Argue that the cost will be mainly in terms of an initial take-off. Cost minima for such a take-off (with the huge fat cut from programs) might be astonishingly and instructively low. Costs of various spacial abilities and processes (launch, terrestrial assembly, cost per passenger, cost per freight weight, cost per lunar operation, operation vs. development, backup per launch or recovery, recovery or landing, cost per maneuver in space, &c) may be plotted to fall, rapidly and drastically, with time (for such reasons as: no research, no or easy development, assured safety, standardization, accomplished elegance, preexistent and scaled industry, automation, improved and cheaper fuels and material, regular and vaster operations, purely extraterrestrial affairs, cost-minimized operations for special purposes eg freight launches from Moon to Earth, &c).
3. A key point is that one take-off will be autonomous, self-sufficient, and closed-cycle civilization, industry, and economy that will (perhaps decades after being pursued) appear in space, and the further cost of space will be zero or progressively negative; that is, the real cost of space is transient and negative. The real purpose of going into space will be to create an independent, additional sphere of existence; an enlargement, rather than division, of human activities.
4. Private industry, even an enthusiastic sector of the US or world population, can and may now explore, inhabit, and exploit space. Cost estimates for this should be done (with the above considerations).
5. Economies of scale for industry, great industry, migration, and birth in space should be calculated; costs might fall tremendously and terrestrials making \$100,000-\$1,000,000/lifetime might be interested.
6. The whole probable and possible basis for the long and massive adventure into space is the possible and probable growth of population, total wealth, per capita wealth, vagaries of human interest, and advancement of science and technology, and sufficient levels of activity to critically enable and

economize research, exploration, exploitation, inhabitation, and industrialization of innumerable larger possibilities. To a great extent, the whole justification will lie in the assessability of what are now largely unknowns: what mineral wealth the Moon, asteroids, and planets contain, the readiness and economy with which this can be progressively discovered and recovered, the extent to which man's adventure into space may capture the human imagination and be self-inflammable, the ease with which colonies can be established and made self-sufficient or profitable, the hardihood of the initial pioneers and entrepreneurs, the rate at which the cheapest spaceships can be developed, the extent to which indigenous materials and other resources will facilitate beginnings, the economy with which Jovian hydrogen and transjovian carbon (eg in CH_4) can be transported elsewhere in space or to Earth, the economy with which materials and manufactures can be dropped onto Earth from space and the economy with which they can be dispatched from Moon, asteroids, or Jupiter's exosphere or satellites, the (eg time-indifferent) economy with which men and materials can be moved across outer space, the benefits to be gained from astronomic observation on the Moon or in space advancing astrophysics and cosmology and hence furthering physics in general and thence finally contributing to human values or technological accomplishment in such a way as to vindicate the entire cumbersome procedure, the overall probable and essential contribution of spin-offs to man's science, technology, well-being, and useful purpose, the realistic substitutability of terrestrial for extraterrestrial investment, the spiritual effects (eg the regeneration of man's and mankind's optimism, purpose, enthusiasm, happiness, character, scientific imagination, grand design, peaceful concertions, and overall progress), the future of life on Earth (eg the danger of global catastrophe, sociopolitical horrors or decay, our spiritual course, such military threats as a genocidal or world-conquering aggressor or as the creation of a doomsday machine), &c.

7. The following technological objects of space exploration are to be noted:
 - 1) Absolute minimization of materials, fuels, inessential costs, design, processes, functions, human effort, wastes, dangers, &c.
 - 2) Absolute maxima of miniaturization, efficiency, integration, multiplexing, comprehension, control, precision, utility (eg multipurposiveness), recycling, biological value, human factors' understanding, (ultimate) cheapness, self-sufficiency, systemicity, functional lifetime, dependability, toughness, strength, power, imperviousness to wear, self-reparability, modularity, organicity, synergism, complementarity to man, (in a way) manufacturability, mechanization, automation, &c.
 - 3) Communication, food, housing, clothing, transport, energy, automation, instruments, science, photography, materials, medicine, psychology, sociology, general biology, entertainment, meteorology, astronomy, mineralogy, geology, mathematics, defense, politics, engineering, books, oceanography, religious understanding, philosophy, economics, and practically everything else.
8. The greatest justification for space may be that it progresses science on a military scale and at a time when popular emotions may stupidly limit science. It diverts attention from sources of war, amuses and inspires mankind, teaches us the value of science, promotes economic progress, perpetuates heroic, adventurous, and mystical values, diverts attention from our (phobic, self-piteous, morbid, small, &c) selves, enlarges and maintains the human imagination, gives us a higher or symbolic purpose, &c.
9. Large-scale nuclear engineering, impossible on Earth, may be possible on Moon. There it may cheapen mining (mountains can be detonated, the surface can be re-ravaged, ultradeep lodes are explorable), cheapen industry, cheapen (titanic) building, and even enable exploration and mining at arbitrary depth (the internally cold, low-gravity, and small-radius Moon may support shafts tens, hundreds, or even the full thousand miles down into its interior; it could well be that a heterogeneous interior will be found to possess absolutely titanic bodies of curious, enormously valuable ores such as to complement or surpass known or relatively inaccessible terrestrial resources, and such as to support Dysonian increases in human wealth and population).
10. Returning to #6, above, the ultimate justification and basis for the development of space is the likely "Dysonian" scale of future human population, wealth, industry, science, and technology. These astronomic scales are perfectly defensible in various ways: 1) They are consistent with past growth, 2) They are consistent with man's "sizeless" or "maximizing" Faustian nature --his quest for ultimate science and technology, his incessant expansion, his inexhaustible curiosity, his love of grandeur, his exploratory instincts, his invariable exploitation of opportunities, &c, 3) They are no more amazing, after all, than the vastness and suddenness of man's accomplishment to date (his gigantic cities, teeming numbers, transformation of the face of the earth, miraculous scientific and technological achievements, economic explosiveness, &c), 4) They are perfectly feasible, 5) They are ultimately certain of realization, 6) They affirm life, being, and intelligence, 7) They bear on the significance of current things, 8) They simplify progress,

9) They appear to "explain" the unconscious basis of man's original entrance into space, 10) They are continuous with one another, 11) Surprisingly, they would seem to offer stupendous natural economies in the cost of things, 12) The truth may be that potential people have a right to exist and extant people have a duty to enable them to exist (shirking of which may be equivalent to genocide on an astronomic scale!), 13) The "texture" of human life may be enormously augmented by expanding population and civilization on this scale, 14) Therefor, the Dysonian scale of materials, energies, space, science, &c would seem to provide the basis for a population the square of present Earth's, 15) Such Dysonian increases of population, wealth, &c would seem to be an ideal means of accelerating to a maximum progress in science, technology, art, sociology, cultural evolution, philosophy, &c by effectively compressing the future into the present, &c.

11. One of the most interesting and important opportunities in connexion with space over the next 1-2 centuries would seem to lie in the possibilities for interstellar communication. It is likely, even probable, that a million--give or take 3 orders of magnitude--centers of civilization exist in our galaxy advanced beyond our own in science, technology, ways, treasures, virtues, and intelligence by ten to one hundred million years, ie virtually infinitely. There are those who see in this an absolutely unique chance for man to advance abruptly in such respects and on such a scale, and to learn his real destiny; that is, these people see the equivalent of Gods waiting to benefit ourselves if we lend them an ear. (I disagree, but for reasons too strange to treat here.) Given such multitude, capability, and richness of purpose, it would seem--on this view--certain that virtually the immediate and total solution to all our problems has been provided in the heavens in an infinitely accessible form (which we have yet to discover). Even if communication is but our reception, the astounding purpose will be served. This view imagines the galaxy as an immense conversation. A corollary of this view is that failure to detect others may signify an infinitely grave fact: either that intelligent life invariably suicides, or that man is virtually or relatively unprecedented and unique, a strange freak or first of galactic nature, with infinitely great obligation to gain control of himself and direct himself to the future development of part or all of the galaxy. Such a deduction would obviously be as dramatic as any imaginable, and, if man is a responsible being, would rightly lead to the total transformation of the human race as it responded to responsibilities higher by countless orders of magnitude than any it had ever known.

12. One of the most fantastic possibilities for the next 100-200 years is that "space" will be discovered to be not so much a vacuum as a plenum, and to be packed with an "ocean", "soil", or "world" of virtual particles, neutrinos, or other physical entities, possibly obeying additional laws, spaces, and distributions. The density, energy, texture, and information of any point in space may be found to be arbitrarily great. Our own universe may be found but a trifling overlay on this greater scene. It is conceivable that a new source of energy, matter, and experience may be tapped thus. This bizarre prospect is actually quite likely. *Some would say certain.*

13. It is possible that out of particle physics will come a new source of energy of truly astronomic power and potential, and this new energy may be the key to the navigation of the galaxy and to Dysonian projects, perhaps propelling craft at relativistic velocities almost inexhaustibly, or even enabling the swift pilotage of whole planets or solar systems about the galaxy or between galaxies. The progress and power of science, if pursued, may be such that such possibilities will be feasible in 1-2 centuries or less (even if it seems objectionably fast).

14. The velocity of propagation for gravitation is unknown. It might be transluminary or instantaneous (however paradoxically), in which case it might serve communication or "teleportation" at corresponding velocities, and the exploration and civilization of the galaxy or universe might be less preposterous and more imminent.

15. It is considered unlikely but not impossible that particles called tachyons exist (there has even been one cosmic-ray shower report claiming their existence). Such hypothetical entities are poorly understood theoretically, but the occasional suggestion has been made that tachyons might be used for communication, or even transportation, at transluminary (faster-than-light) velocities. It is notable that a defense of their existence has been made on the basis of anomalous astronomical observations, underlining the importance of astronomy (an adjunct or beneficiary of space research). (Likewise has astronomy hinted at the existence of sources of energy in the sky obeying laws unknown to our science, because of their evident efficiency or supermaterial abundance).

16. The possibility remains that life--even of high botanical, zoological, or mental order--exists elsewhere in the Solar System. The likely places are Jupiter, the transjovian planets, and the Sun. Jupiter because:

1. Earthly life presumably began in an ocean.
2. Earthly life has been supposed to have begun in a reducing atmosphere.
3. The Jovian sunlight is only .04 Earth's and Jupiter's infinite cloud must virtually limit penetration to the planet's atmospheric skin, the overwhelming endogenous energies of the planet--directed outward as sunlight here is directed inward--might substitute for the Sun, even if the energies involved are of lower frequency.
4. The tremendous turbulence and overall motion of the Jovian atmosphere suggests such activity and diversity of situations as one would think essential to and productive of original and considerable biological evolution. Voluminous and furious Jupiter, in fact, should vastly and compensatorily exceed Earth in these respects, eg the Jovian life space exceeds Earth's--disregarding temperature, which very possibly is highly uniform or mixed--by a factor of as much as $2 \cdot 10^6$.
5. Abyssal and benthic fauna and flora exist--in surprising quantity--in Earth's oceans.
6. Unquestionably, Jupiter's chemistry and 'gaseous soil' is far more complex than we understand or even imagine.
7. Jupiter's atmosphere can easily, even probably, have exciting solid constituents, eg aerosols, sludges, dust-snow, and many other imaginations. It is even conceivable that it floats populous 'icebergs' or 'rafts' on its many layers.
8. Possibly environmental electricity has played a surprisingly important role in the evolution of terrestrial life, and it is easy to imagine it playing a similar role within Jupiter. At least, titanic lightning may occur and play high-energy roles in the origin and support of life.
9. Much life preceded man. Jupiter may abound in subhuman life and ecologies. Nor is it hard to imagine 'large-brained whales' existing at various levels of the Jovian atmosphere. The biggest problem might be what limitation should be assigned Jovian evolution because the planet failed to produce technological intelligence which visited Earth and left a sign or took over before us: but it is just conceivable that intelligence directly abandons physical conquest and turns inward in novel spiritual and mental life thoughtless 'of the stars'.

Photographs have revealed a marvelous complexity of the surface of Jupiter's atmosphere. The problem with life on Jupiter, however, is that the planet seems enormously hot within and the heat circulates so well that the layer of atmosphere compatible with life seems too shallow and insubstantial. It is conceivable that the transjovian planets, though hot, afford stabler and deeper realms capable of evolving superoceanic life or life rooting on peculiar solids. My suggestion that there may be life in the Sun may seem absurd but it reflects a broader appreciation of the bases for life: an energetic milieu stuffed with an immense spectrum of heterogeneous, mutually relative phenomena, possessed of astronomic size and age, and capable of fostering evolvable self-reproducing automata of arbitrary appearance, physiology, and worldly concern; in other words, our bearings are infinitely too idiosyncratic to give us authority to predict or even recognize the existence of radically unfamiliar lifeforms and milieux!

17. It is perhaps very wise that nations be made to compete in outer space as this may draw them out of themselves and give them a wider, more universal perspective, whereas, confined to Earth, they may stagnate and harden in their corrupt ways and childish views of each other. Space, unlike Earth, is undivided and indivisible.

17. John Wheeler has suggested that current physical knowledge compels one to believe in the existence in and beyond our universe of an incomprehensibly bizarre infinity-dimensional space he calls "superspace". This entity or substratum may be 100 times as massive as the known universe and may include the latter as a small or insignificant "subpart". Superspace should in fact be timeless and dimensionless, and comprise a simultaneity of all possible worlds. These infinitely many parallel universes should be infinitely various and obey infinitely different laws and be possessed of infinitely different numbers and kinds of constituents. It may be possible to travel or communicate with or between these other universes by plunging into such

hypothetical astronomic singularities as black holes. Such perilous routes may also enable travel or communication to or between any points in cosmic space, past time, or future time by instantaneous jumps through "white holes" for our universe may be discontinuously multiconnected in this hilarious topological way. Although all of these things are sheer surmise, Wheeler is one of the leading physicists and he is dead serious. The feeling which should be gained from these and other possibilities is that science is indeed thaumaturgical, infinite in its possibility, even probably.

18. I have profound reasons for thinking that nature, and hence potential science, is not finite--as formerly or currently thought--but infinite in her complexity, promise, and challenge, an inexhaustible and ever-enlarging physical and mental adventure on which the human race has almost unnoticeably begun. This is in fact what I believe. She is filled with life, content, and avenues beyond our mortal comprehension. For this reason I see the future progress of science, technology, and society as self-accelerating.

19. It is clear that computers will be helped by, help, and strongly--even decisively--color the future of spaciology. The degree and rate of progress of computer power and intelligence is particularly significant since future space programs will be progressively mechanized, and possibly robotized. Automata may even replace human crews, technicians, and passengers altogether. The reasons: 1) safer, 2) more reliable, 3) cheaper, 4) more adaptable, 5) more evolvable, and ultimately 6) equivalent and 7) more able. The space program particularly lends itself to the indirect development of the computer and automation, and such development could be far and away the greatest spin-off of space. (I have comprehended the implications of artificial intelligence elsewhere.)

NASA BICENTENNIAL PLANNING: PREFATORY ISSUES & OUTLINE
Pat Gunkel

1. Loci: suborbital trajectories, terrestrial orbits, 3/5 Lagrangian points of Earth-Moon system, lunar orbits, Moon, interplanetary space, points on and around the inner planets, asteroids and asteroid belt, solar orbits and trajectories, points on and around the outer (transmartian) planets and their moons, transplutonian orbits and trajectories, interstellar and allostellar orbits and landings, intragalactic voyages, and extragalactic voyages.

Subloci: orbits, surface, and interior of planetary bodies, and probes into their atmospheres.

2. Activities: sheer engineering attainment of various objectives, preliminary examination of loci, mechanical and/or human landing and preliminary ground investigation, thorough scientific examination of diverse sites, astronomic instrumentation of sites for observations unrelated to sites, thorough geographic exploration of sites, determination of exploitability and profitability of sites (preliminary expectation and refinement through actual attempt), semipermanent and permanent robotic and human occupation of sites, colonization of sites (establishment of semiindependent communities with spartan life), achievement of relatively profitable and variously self-sufficient colonies (dependent on natural or artificial materials and things), occupation based on progressing economic freedom (primary, secondary, tertiary, and finally quaternary purposes; government, industry and science, and finally the individual and his pleasures), "terraforming" of sites, population explosion in space, and Dysonian reconstitution of the Solar System.

3. Purposes in space: military, political, scientific, economic, adventurous, and occupational; attaining of engineering objectives, scientific and industrial exploration, mining, manufacturing, prediction of terrestrial processes (effects of Sun on Earth, Earth-surface processes) and resources, scientific exploitation of conditions peculiar to space (meteorology, geology, observation of Sun and stars, cosmology, particle physics, material physics and chemistry, and mathematics), settlement, discovery of various energy sources, and popular interests.

POSSIBLE ISSUES

1. The need to establish the insufficiency of Earth for purposes fulfillable in space (military, mining, occupation, adventure, waste disposal, sources of energy, scientific determinations, mechanizability of space program with men kept on Earth, spiritual significance of space, manufactures, medical treatments, general development and application of science and technology, advanceability of physics; replicability and essentiality of such alleged advantages of space as extreme vacuum, absence of gravity, freedom from sundry terrestrial disturbances, isolation from civilization (eg over the ocean, Antartica, deserts, and under ground), &c) and any real, general economic advantage. Eg what mining and manufacturing is possible given the energy necessary for entering, leaving, and operating in spacial loci, without leaving Earth? What terrestrial resources are discoverable given equivalent interest, investment, waste, hedges, development, time, scale, investigation, theory, instrumental capability, &c (eg within the sea, at depth in Earth, through plate-tectonics theory, in other lands, in Antartica, in diffuse (semi-pedological) deposits, in new particle physics, in automation (eg using perceptual, cognitive, "supermechanical", &c machines), using substitution of resources, &c)?

2. "Elaborate astronomy idea". Chances are good that astronomy will reveal laws and processes in the universe supplementing, transcending, or refuting current physics. Directly or indirectly, this may point the way to new energy resources, methods of communication or transportation, &c, apart from broad philosophical implications (which may be quite radical and might have a great impact on mankind). Reception of communication from other civilizations may advance man, abruptly, almost infinitely (in science, technology, values, quality of life, standard of living, economic bases, &c). There are literally tremendous capabilities to advance astronomy, even with relatively uncostly means that are near at hand. Astronomy would pay off as did old biology in terms of medical benefits.

3. "Diminishing returns (conventional space) idea". It may be that we have skimmed the cream off first, simple, and major utilities of space with periterrestrial technology, simple demonstrations of planetary capability, demonstration of the virtual sterility, deadness, and dullness of other planets, and early knowledge about or attainments in periterrestrial science, technology, industry, defense, and derring-do. Even if there are some "secondary" capabilities, especially lunar, things beyond are far less interesting or far too demanding. These things may hold at various levels of generality.

4. "Comprehensive telemineralogical planetography idea". One of the greatest potential justifications of any investment in space is mining. Characteristically, its feasibility and warrant are undecidable in advance of large-scale systematic survey of one or more planetary bodies, possibly coupled with actual industrial extraction. A unique opportunity would seem to exist for relatively cheap, technically novel, and comprehensive mapping of mineral resources on the Moon and other planets. This could be done "all-at-once", quickly, surprisingly thoroughly, and more or less in terms of current technology; it virtually could not be done for Earth, due to her thick atmosphere, dominant ocean and ice, impenetrable biomass, "noisy" regolith, and active geochemistry and geophysics (and Earth is old hat). One or more satellites could orbit and systematically scan Moon, say using laser spectroscopy and a "laboratory" of other telemetric systems (the lasers could be of arbitrary power, tunable, and cover the electromagnetic spectrum; the recorded spectra could be analyzed by advancements in spectroscopy using computers), to map her surface mineralogy. The Moon being free of atmosphere, the resolution of the satellite could be as great as attainable from a few kilometers. The mineralogy of Moon might be resolved into 10^{16} square meters, give or take a few orders of magnitude (the lunar mapping, beginning with gross features, could be an ongoing continuum of progressive resolution; apart from the indefinite capability of data-processing, the previously mentioned idiosyncrasies of the lunar surface imply that enormous resolution might be useful). Such mapping could involve iterant stages selectively and progressively focusing on those topographic and qualitative details implied to be important (or arbitrarily important) by earlier processing. Despite her scant dust^α and surface activity over the ages, Moon is likely to be far more^{α Perhaps} of a "transparent being" than Earth and her pristine surface is apt to be a lavishly resourceful cross section, and a clear indication of the extractive economics of space. Mars, Mercury, the asteroids, moons of other planets, and Pluto all invite **reapplication** of the technology already developed for Moon. It may be that (nonlinear) nuclear and mineral stratification (or just great heterogeneity) marks the Solar System out from the Sun or in terms of planetary size (or in terms of asteroid belts or satellitic order from the jovian planets) in an extremely appetizing way from the standpoint of mining (spectroscopy indicates the asteroids are chemically highly various; asteroids have been ground into "pure surface", and possibly sans depth stratification; they permit access, exit, and working free of gravity; they could theoretically be--as the supreme economy of Solar System mining--tossed onto a terrestrial ocean or pole, and recovered). The maps produced of planetary mineralogies might actually be suggestive for terrestrial surface and deep mining. Once a "conveyor belt" transporting minerals from loci to Earth is started, distance is irrelevant because time is irrelevant, and impulse is irrelevant for the same (patient) reason; ^α in effect, the entire Solar System is compresent atop Earth. ^{α Not quite true; velocities (orbital) increase heliocentrally.}

5. "Falling costs idea". What governs the absolute, marginal, and competitive cost of energy? Its reduction by 1-3 orders of magnitude could utterly transform spacial economics. Analogously, what governs the cost-minimizability of given interspacial and intraspacial operations, and ultimately limits the economies of scale, reuse, and knowledge? Seeking a minimum, how much need it cost to launch a "can" (a pure load by a pure explosion), and what is, and why, the discrepancy with current launch costs (in effect, what is the "overhead" of launches, and its eliminability)? What is the actual curve of absolute and marginal costs per launch and per pound since the program began, and expectationally? What things are critical? What simplifications, refinements, advances, sacrifices, &c could reduce or minimize the cost, compatibly with a magnification of spacial objectives? Is space research very price-inflated?

6. "NASA reconceived idea". It is widely agreed that NASA was originated, driven, diminished, and to some extent will live its future life for covert, obscure, and somewhat illegitimate political-military reasons, reasons of glory, prestige, competition, expediency, and vendibility. It is also widely understood (though somewhat darkly and forgetfully) that the greatest utility of the space program has been its scientific, technological, and economic spin-offs. Scientific and societal potential, and the real nature of things, strongly urge upon one the alternative idea of turning government full-scale into science. Glorifying or replacing NASA in this way could have a stupendous effect upon the future of the US and the world, and it is easily seen that the transformation of the developed countries from primary to quaternary economic endeavors complements perfectly the concertion of the US on the overall, explicit, and large-scale evolution of science and technology (further, the specialization of different countries in this way makes this proposed further specialization completely economically feasible, and even ideal from the standpoint of the world). NASA has done a splendid and widely discussed job of proving the attainability of "high" scientific, technological, and economic objectives by explicit, large-scale, organized, and continuing pursuit, and the tremendous societal value thereof. There are no impervious objections to any such governmental undertaking, for the initial objections can be shown to be misconceived, exaggerated, unproven, answerable, and irrelevant. I feel that science can and does grow and accelerate exponentially, infinitely many more things can be done, and that very probably science is on the threshold of a quantic take-off.

THE VALUE OF LISTS

1. Give names to things. *Holophrasis.*
2. State and congregate the "obvious".
3. Serve first, repeat, and common discussion.
4. Stimulate (eg universal) discussion.
5. Discover and invent issues. Exploration!
6. Elicit counterarguments, counter lists, and further considerations or views.
7. Give or foster an overview. Orbit Earth!
8. Prove there is anything in one's text, head, argument, or issue.
9. Enable sublists.
10. Enable textual, argumentative, &c organization.
11. Serve as a mnemonic.
12. Exhaust possibilities. Indicate completeness. Give colors and the spectrum.
13. Enable perception of possibilities' relative importance, order, interrelations, merit, &c, the hierarchy of issues.
14. Serve self-analysis and general analysis and synthesis by lists' making and reconstruction by others. Patefy assumptions and premises.
15. Elicit criticism of one's views by others. Honesty and simplicity.
16. Serve as a "checklist" for future treatment, study, solution, &c of subjects.
17. Show and emphasize essence and converge related possibilities to a critical point. Comic book brilliance. Eliminate noise and confusion. (Trees unseen due to forest.)
18. Show conflict of assumptions and points.
19. Introduce subjects.
20. Motivate self and others.
21. Caricature issues (eg phony simplicity or statement).
22. Counteract specialization: forest unseen due to trees. (Plein air.)

THE VALUE OF SCENARIOS

1. Better use and understand history, its determinants, dynamics, ambiguity, currency, vitality, branching, meaning, and relevance.
2. Explore and understand the present context and the characteristics--eg potential, signifigant, critical, consequential, and continual branching--of the future, or of various possible situations.
3. Create empathy for possible events.
4. Expand policy, strategic, and tactical capabilities, and improve philosophy.
5. Enable retrospective evaluations of future events.
6. Foster intuition, imagination, and a capacity to handle probabilities, complexities, and heterogeneous contingencies.
7. Develop an appreciation for the causal and circumstantial interrelations of any or of particular situations, and a global perspective.
8. Lead to an understanding of one's motivations, assumptions, in/adequacies, patterns of response, and plans.
9. Trigger understanding of the other's, in fact of any, point of view, and even that sympathy necessary for contact.
10. Train a habit of mind always excelling in these things, eg marked by a ready and systematic grasp of events, their scenario structure, and their participation in a scenario texture of all of reality; foster cotention.
11. Regenerate positive policy-making, ie administration able to initiate, and not simply react to, events.
12. Lessen "carry-over" thinking from past experiences.
13. Bring surprising details to light.
14. Illustrate forcefully certain principles, issues, or questions.
15. Concretize abstract thought.
16. Help illuminate the interaction of psychic, social, economic, cultural, political, and other factors, eg certain personalities.
17. Provide contexts for discussion and enable a contextual systematics.
18. "Name" possibilities.
19. "Rationalize" conflict.
20. Provide a sense of the timing, possible moves and appropriate "answers" at branch points, the dangers and opportunities, &c of events.

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REASONS FOR THE MAKING OF LISTS

Pat Gunkel

1. Acquaints one with the lists already in one's head that one typically uses-- however unsuspectingly, and with their faults and limitations, as well as explicit form.
2. Causes habits of mind of very quick comprehensive exam of any situation and of such exam of situations as to make saliences apparent.
3. Forces one to look for the very things omitted by lists that may be by nature the most or the only important.
4. Staggers or juxtaposes variety (eg the extremes of the world) and does this on the head of a pin so that in this explicit actinic light no evasion can occur but instead the mind can dart as the eye about the whole landscape, condensed, according to the quality of the list, by the extreme and peculiar qualities suggested by the list.
5. Is a way of summarizing one's past thought.
6. Puts before one all the natural data of the world, and axioms, so that it conduces to pure thought in all its immense personal variety: the mind looks for the natural interconnections of things instead of those presupposed.
7. Is a mnemonic, where by minimal references the mind is enabled to fill in all it knows (eg in momentary adaptations to situations) or can see by the implicit resources.
8. Slashes across the self-amused styles and subtleties of distinction found in books and minds to be passing for substance or thought: it is a critic of the world.
9. Is a summary of progress and an onward pointer.
10. Is a poem: it has the power of intensity, eg lines of world geometry are seen converging to a point.

PRINCIPLES OF LISTS

1. The world is not a list: its structure is more complex and analogue.
2. Lists are always incomplete and typically omit items of equal and even the greatest importance.
3. The world is not divided into islands like the points of a list.
4. A list names things but the world does not consist of names.
5. Items on a list want essential weighting, which is often *extreme* and even negative, and the weighting must be multidimensional and even more complex, or the appearance may be more misleading than accurate.
6. Lists perpetuate and create fallacious traditions.
7. Lists befog the mind whose rightness is often pragmatically and intuitively simple.
8. Lists fan false controversies.
9. Lists are easy to do cheaply and are often excuses for good hard work.
10. Similarly, lists stun facts and theories.
11. Lists constitute specious summaries.
12. (Lists are hard to understand, name, appreciate, and apply. They are unesthetic and bureaucratic.)
13. Not only are lists dimensionless or unidimensional, they are unlevel.
14. Often the point of writing and thinking is not substantive or abstract.

NEGLECTED, "INVERSE" DOOMSDAY MACHINES*
Pat Gunkel

It is usually complained that Doomsday Machines represent an analytical reductio ad absurdum and a purely evil or gloomy notion, or a useless one. I think this is going too far. Possibilities have been neglected, even by the fabulous mind of Herman Kahn.

An irenic and benign doomsday machine could be built. A good guy, such as US, could build the machine in secret and present the belligerent and disorganized world, or her greatest enemy, with an ultimatum. "Disarm, be nice, or reconstitute yourselves or I'll blow the world, you, or progressive parts of you sky-high!"

There are lots of reasons for executing this option. The future may look bad. It may look as if a malign aggressor must eventually win by exploiting an inevitable, temporary, and sufficient advantage. It may look (to either side) like a necessary preemption. We (the good or self-admiring side) may have moral obligations to reshape the world (especially since, now & later, it might be the sole opportunity for doing so; time moves fatally and swiftly). It may be convenient to do so. Some misguided, or inferior, third party may have the same idea.

It might be possible to effect some of the above higher purposes by "aiming" a (finite) doomsday machine at ourselves. If unusable in peacetime, it might function well in war. "Quit, surrender, or leave us alone or we'll detonate ourselves." Thus an aggressor could not capture the nation, and various powerful moral pressures would be brought to bear upon the would-be aggressor; the nation might depopulate itself or render itself impopulable and without wealth, and dangerously radioactive from the standpoint of the world. A defensive nation could extend its suicidal "umbrella" to all other nations, threatening to so destroy them in order to defeat any would-be aggression.

The finite or infinite doomsday machine could be entrusted to the United Nations. "To be used to prevent any and every would-be aggressor, and to be protected against by prior determination of all benign peoples not to submit to any malign uses of any doomsday machine, preferring death."

In this way it might be very appropriate to build a doomsday machine (which is already possible), say to force ourselves to disarm absolutely. If the world ultimately becomes encumbered by excessive government over all, this might be the only way to get rid of it.

Strategists have evidently been guilty of a loss of nerve.

* Call these Hallelujah Machines

SOME SPACE-TECHNOLOGICAL IDEAS

Pat Gunkel

Is there a future for weather modification from outer space? Could weather modification, instead of being done aeronautically, be more effectively done suborbitally (extensive vs. intensive), eg by an enormous explosive scattering of a rocket pay load?

Ultracheap titanic space mirrors for focal weather control are possible. Exempli gratia, heating-raising-precipitating/absorbing/stratospherically dispersing clouds, for nocturnal or diurnal snow removal, for hyper-focal defogging of airports, for "burning off" thunderstorms and hurricanes (or steering the latter about), for evaporating water from seas and great lakes to contribute to land precipitation (especially over the Afro-Asian desert and other coastal deserts), for redirecting ocean currents, for increasing vertical turnover of great waters, for creating great "above pyre" updrafts to turnover stagnant, cold, or hot atmosphere by rejecting masses of air into the higher atmosphere, for hibernal (perennial) agriculture in mid-latitudes, for warming frigid mountain ranges, circumpolar regions (Canada, Greenland, USSR...) and small pieces of Antarctica, ad infinitum.

Such catoptrical (or other optical) technology could likewise serve sundry spectacular industrial purposes such as astronomical distillation of seawater, great "super-energy" crucible furnaces in deserts or other wildernesses (which could gasify and dissociate water into hydrogen and oxygen, rock and soil into oxygen and other elemental or simpler-molecular species, mass-perform other reactions, serve ion-mediated energy conversion, &c), burning gigantic mining craters or shafts into Earth, digging ("laser") canals, cooling cities by propinquant updrafts, &c.

Theoretically Earth's climate could be latitudinally equalized (and deseasonalized and stabilized) by gradiently and cheaply both shading lower and mirror-brightening higher latitudes. Would world vegetation grow better if sunlight was de-disced and distributed uniformly over the entire sky (which assumes an advantage over interfoliate shading that must be verified)? Could intense focusing of astronomical mirrors or lenses (the latter consisting eg in tenuous balloon-englobed steam or Jovian hydrogen; may the solar wind or "heliosphere" be progressively concentrated near the Sun so as to be useful at eg 1-10 million miles?) on the ocean enlarge its columnar life by creating a broad submarine photosynthetic zone?

Such titanic optics might be used with special niceness to shape and run Moon, free as it is of atmosphere, population, and alternative sources of energy.

Norman Friedman makes a fine point when he implies that preliminary "Lewis and Clark" expeditions, eg consisting of 20 men and 2 years each, should presently be launched on Moon, Mars, asteroids, and other moons in order to survey conditions and prospect resources, determining the real feasibility of Solar Systemic mining and providing that commentary requisite for creative visualization by scientists and public.

What growth can be foreseen for Earth-orbital satellites and stations, eg serving communications? Are there any things because of which their size, number, capacity, sophistication, and even type should be greatly extended beyond something like 1975 standards? Some possibilities are global videophony, teleholovision, and computers. Eg might all global computers progressively tend to be tied together, and operated in concert and parallel? Might median world per capita income (with world population 10-40 billion) simulate or exceed 1975 American standards, and thus load a world-circumfusing telephonic, videophonic, holovisual, and/or computer (informational, computational, and regulatory) network or plexus?

The premier and vital question about these informational possibilities is the elasticity and minimizability of their transmission cost per bit, now and in hypothetical futures, per distance, and specifically in terms of possible economies of scale reflecting gross, per capita, and "intensive" (eg for-individual-device) use, and the developmental-dependence of such costs. Concomitantly, how enormously will median per capita income, and the possible fraction justifiably (eg through altered habit and need) directed to information-transmission, grow, and are there non/marginal critical thresholds amounting to quantum jumps--whole new "worlds"--in use?

I am fascinated by Norman Friedman's proposal that aerospace might serve to "bind the world together" and "abolish distance", eg via cheap hypersonic transports (HST's), direct satellitic TV, and ultracheap long-distance communication by satellite.

In terms of quintessential cost, what aerial distance of HST or SST flight identifies with a spacial ("one-shot") trajectory so that a "maximal cost (spherical) segment" would exist? Is the HST cheaper, really, than orbiting?

With supreme communications and transportations miscegenating the globe, the claim has been made that a more homogeneous, prosperous, and well-informed world would be far less apt to war. This is acceptable since the resulting manifold of human interactions would be too complex (150 "neighbors" = 0 neighbors). More importantly, there is something semiconsciously stupendous, quantumic, transfigurational, and religiously exciting about such a "Noospheric" unition, combination, co-involvement, coinstantaneous, 10^{19} -dimensionally interfaced, "free and open", panoptic, self-conscious, self-conversational, stadial, &c world. Everyone could be everyone else's neighbor, eg an activity could evolve and become dominant of televideophonically (and hence safely, comfortably, and interestingly) "globe-trotting" by dropping in on random, hunch-selected, autobiographed and directory-listed, colloquial, "grapevine"-suggested, &c catenulate, stateless ("Cosmitic") neighbors or addresses. (It is hard to understand how the United States missed the opportunity for overturning national "curtains" by developing global satellitic broadcasts of televisual and radio programs in a perfect reaffirmation of freedom, given the asymmetry of ideological concerns.)

Space-inflate (eg 100-mile diameter, $\$10^9$ - 10^{10} ?) balloons (eg with a hemisphere silvered) to catoptrically converge on an asteroid and ablatively propel it to Earth, &c using the Sun, or to refine. (In fact, a 10^5 -mile diameter balloon could be used for super, Dysonian energy &c!)

Balloon-englobe asteroids for terrestrial atmosphere.

Huge, difform, and endoskeletal "vacuum-boats" could be floated on Earth's tectorial atmosphere, eg for weather control, eg by semi-shading the Sahara to cool or moisten it.

Too, sufficiently big "bubbles" in the atmosphere could be lenses focusing sunlight in supercheap, huge desert furnaces.

(En passant, it should be remembered that gigantic or astronomical inflated skin, thin shell, or geodesic domes are erectable in middle and upper latitudes that would, for nothing, operate by contraseasonal equilibrium and "greenhouse effects" to balance summer against winter, melt permafrost to recover soil, and support vast agriculture and settlement; indeed, hemispheric mirrors could compensate the lesser sunlight of high latitudes. Such technology could be a spacial spin-off.)

Titanic silvered-hemisphere bubbles (dirigibles, fixed) should be creatable in Earth's troposphere (and stratosphere) to serve as concave mirrors for terrestrial recovery of solar energy (like reflective clouds or mirages). Intra-bubble, shaped-balloon, concave-convex, and bubble-network structures are imaginable, even initially. Bubble networks could retrieve 10^4 square miles of sunlight in Arizona, the Sahara, &c, equalling mankind's total current energy budget.

En passant, astronomical dirigibles could "blow" immense freights around the eolian globe.

PREMISES FOR CENSORSHIP
Pat Gunkel

A cause of confusion and an excuse for pornography is the concept of "redeeming value". Aware of this situation, producers can incorporate in their productions things identifiable, by rigid or presumed criteria, as of redeeming value, and avoid censorship. It is questionable whether the absolute presence or absence of isolated things supposedly of redeeming value actually have this effect, especially if incorporated inorganically, unnaturally, and abstractly. Such incorporation may even be worse, eg by throwing mud on good things and enlarging a cynical attitude. The important thing is not the intrusion, per se, but the overall effect and *raison d'être* for the work. Here it is objected that too much subtlety is involved for legal or any censorship, and even that excessive censorship might occur, and leave very little else (especially today). The objection may apply as well to the abstract presence of questionable matter when this is faulted without regard for the whole or larger considerations. But it is only through regard for the whole and rigid censorship, indifferent to any question of favoritism or imperfection or relativism, that proper and effective censorship is possible. Censors must be intolerant. Whole trends of society, or at least of producer and consumer taste, must be defied, if necessary, to minimize degrading productions, or to create and maintain a good society. It cannot matter if the censorship is so heavy and rigid that production and exhibition is reduced, in an instance when this must be so owing to excessive pornography. Our society may have gone to an extreme in laxity toward, production and consumption of pornography, but the failure must be righted and the situation reversed by what might seem an excess in the other direction. Why consider this an excess? It might be better to do without any production whatever rather than tolerate suppressible obscenity. It is clear that the concept of redeeming features has been pushed too far and exploited. One reason for suppressing completely any pornographic content is that this enables the actual and potential originators of such matter, who are the real ones at fault, to be suppressed and taught a lesson, even if they are irredeemable as persons. Why suppress such persons? Because eg they displace other producers of finer or at least more acceptable things. The objection often made to censorship is that people or adults are, *ipso facto*, responsible or mature. Yet it is commonsense that many chronological adults are no more mature than a bad child, and that a good state maintains some healthy regulation of its members. It is claimed that producers and consumers of pornography are free agents forming a virtually closed system. Yet this has no absolute significance, and the fact is that ingredient pornography inevitably taints the common spatiotemporal environment, often in subtle, but no less substantial, ways. A healthy society is in fact one where, generally, the members concern themselves with one another and with the whole, with no artificial lines drawn between activities. In a major way, current problems of society can be traced to a recent or continuing repudiation of important controls operating through mass conscience, an atmosphere of common critical, albeit sensible and flexible, attitudes. No more vital regulation of society can be imagined than such self-regulation through universal standards. An example of one cause for our recent repudiation of such controls, in the case of pornography, has been the subdivision of our spatial environment so that segregative gradients have arisen with local variations in, and failures of, appropriate standards.

Pornography is indeed part of a continuum. But today this fact has resulted in a view that pornographic evaluations are ultimately ambiguous, and a lax and even anarchic stance, whereas the appropriate reaction would have been a bias towards intolerant censorship, and a weeding out of everything of a degrading, and even just inferior or neutral, kind. Indeed the standards of censorship induce trends, but in this case the trend could be toward a progressive upliftment of production and society, for the standards are causal and the censorship should serve_A a kind of positive feedback. The view is expressed that

people are intrinsically vulgar and incorrigible: all, most, or some. It is an arbitrary and dubious view. In fact the very opportunity created by modern technology and social structure has been to at last uplift the average man. It is obvious that to some degree the supposed tastes of society today have resulted from entertainment industries catering to man's lower capacities. Moreover, it is a good criticism of modern society that the new urban technological man is somehow cruder than the average man has been, or been occasionally, in rural or previous societies. The perceptive traveler is well aware of the large variations in the qualities of peoples, and of the cyclic causes or historic origins of these supreme differences; he will have no trouble appreciating the possible and actual effects of the new technical milieu and its self-regulable standards. The real criterion which should actuate a censor should be whether the material he oversees is such as to reinforce and improve the better qualities of the society under his guardianship, and a philosophy of instrumental improvement by some censorial genius. Problems have arisen from the fact of compromise, and stupidity on the part of the interregulating authorities. In fact, a lapse of standards, eg a deemphasis of merit, is apparent throughout American society today.

It is argued that pornography is informative, yet there are better ways of imparting the information in any case, and the companions of the information preclude this strange case for pornography. The lessons, of sex, are learned inevitably, and often with tremendous delight that could only be diminished through explicit, precise, and "objective" treatment, and overemphasis. If school has a role, the better treatment might be brief incorporation in the usual social studies class, or the welcome of counselors to curious individuals. Sex, like natural spectacles, is really only understood when experienced, and, like natural spectacles, is only diminishable by premature and casual regard. Weighing against the view that classroom exposition is psychotherapeutic for some is the equal probability that such regard might generate pathological preoccupation and misunderstanding, even if the former benefit is deep.

A special issue arises for television. Whatever the average parents, hours, and supervision, it, unlike theaters and even books, is essentially a public medium of unsupervisable kind. The very segregation of hours and provision of ratings can have a counterproductive effect through generating interest and ideas in children. And again, the distinction between a child and adult is really an artificial one, especially in a society that refuses to mature. All pornography, of any rating, should not be televised.

There is no want of excellent and uplifting literature, art, programs, &c --eg classical literature--substitutable for productions that should be suppressed, so the fear of impoverishing ourselves by removing the latter, and the new, is in error.

A little neurology &/or wisdom is enough for one to realize that sexual activity impacts men's psychology, and is, moreover, self-reinforcing in the sense of creating an artificial need. The folk notion that sex is pollution seems possessed of truth in that it dissipates nonsexual energies, diminishes self-discipline and purpose, and substitutes for higher sensibility, whatever its transient thrill, effects, and uses. As such, it is akin to gluttony and even vice! On the other hand, abstinence need not occasion as a direct consequence neurosis or a "lower standard of living". In short, man really has better things to do than indulge in sex. Sex can precipitate aggression, irritability, irresponsibility, poor work habits, vulgar personality, and an atomization of society--no matter how preposterous such statements seem! Like inebriation, promiscuity (or needless sex) can be compared to the effects of a prefrontal lobotomy, differing only as a matter of degree, but having a serious effect on society.

Sexual productions can be compared to violence on television: there is no reason for them. Romance and pornography are two different things: the former is ennobling and the latter denobling; they fly from each other. Claims that televisual violence is without effect on viewers' behavior are simpleminded; comparable to the dismissal of any effect of environment on character. It is

transparent that environmental effects are, above all, longterm, subtle, cumulative, and, after all, decisive. The appetite for violence finds style, continuity, and excuse in televisual violence.

The pathetic thing is that social improvements historically have been the product of the initiative and insight of an enlightened, active few, whereas today such persons are self-silencing or paralyzed by fools in government. Analogously, tolerance and freedom have been most successful where there has been some current or occasional intolerance exercising a selective function, a fact which is forgotten by men today in our permissive milieu.

Current liberalization is partly attributable to the dereligification of society accidentally leading to a flourishing of pornography while law and custom are indeterminate, whereas powerful formulable counterarguments to pornography exist in posse. Nor do nonreligious moral authorities even exist.

REASONS AGAINST PORNOGRAPHY

1. Substitutes for what is really fine, great, acceptable, affirmative, inspiring, improving, &c.
2. Its subject (the lewd) is best disregarded or (sex) relegated to the realm of romance.
3. Things become 'acceptable' insidiously that originally would have been rejected; there is no lowest point.
4. It is akin to all things foul and coarse and mean.
5. Abstract beauty, the light and the gay, gentle mystery, &c are more to be valued than concrete indulgence, cynical complexity, extremism, crudity, and mutual degradation.
6. The strong counterreasons are not only religious ones.
7. The part affects the whole. Pornography is not isolable in spacetime, society, or meaning.
8. It is indulgence. Life is discipline. Which is a simple lesson.

WHY PORNOGRAPHY HAS BEEN TOLERATED

1. Assumption that intolerance encourages and worsens the business and the interest.
2. Indifference and self-indulgence.
3. Assumption that it is equivalent to ordinary sex and romance, especially for a sector.
4. Assumption that, now or historically, legal and moral suppression is ineffectual.
5. Desire to test a liberal, even embracive, policy.
6. Biased reportage of experimental countries (eg the liberal or pro-pornographic media).
7. Blurred line between virtue and vice, eg as telecast. Declining standards, generally, of behavior and taste.
8. Quasi-scientific philosophy that "facts are facts" and "facts don't matter".
9. Institutional problems: who are the censors, excess crime, where is the line, new techniques, official corruption, prevailing attitudes, nondissociation from religion, relativism.