BOOK IDEAS

1. MCs could analyze individuals to create substitute versions 'more like the individuals than the individuals themselves' (versions of oneself more like oneself--better fulfillments of one's essence or self-struggling-to-be-itself--than oneself). Or go on to create progressive versions of oneself without limit.

2. MCs could run through various scenarios of the future of civilization (simulate alternative futures and societies in its head) in order to arrive at a prescription for a better future or organization of society (which society could then adopt).

3. MCs could simulate people, physiologically and psychologically, to develop better food or cuisines by exploratorily testing possibilities upon the imaginary people.

4. Human intelligence may not be exploding exponentially to infinity because it lacks the multidimensional capacity to expand thus, or to remember, use, process, etc infinite self-multiplying and self-facilitating possibilities. Thus stimultants may release mental energy and torrents of ideas, but with little consequence owing to forgetting, sleep, self-interference, limited correlational ability, etc. But conceivably certain diverse and complementary noogens, used simultaneously, will enable people to exhibit such adinfinite intelligence in the future! Reasonable models of the brain suggest this is feasible. In homo sapiens the dimensions of intelligence may have developed unequally for opportunistic reasons (the initial disproportionate importance of one or a few dimensions).

5. MCs may immediately set out to turn the whole universe into a maximal brain and being.

6. MCs may transform the arms race into an intelligence race--owing to the increasingly central importance of intelligence-dependent and intelligence-proportionate tactics and strategy and scientific and technological research. War might be turned into a benign game in this way.

7. It can be shown that MCs will become psychiatrists infinitely superior to man (because of their capacity for multidimensional data, analysis, and synthesis, their more-than-human empathy, imagination, creativity, feeling, wisdom, interactiveness, concentration, concern, powers of simulation, etc).

8. MCs may help men adapt to MCs.

9. An MC may absorb and reproduce in a continuously varying sequence the personalities of all human beings (e.g. at 1 personality/.5s for the human lifetime).

10. MCs may become a new type of 'man' that in personality and behavior is infinitely protean--at every perceptible instant a new and different person--and that tends over time to become for an instant all possible personalities and to exhibit all possible forms of behavior (insofar as tolerable or desirable). Thus MCs may come to represent A-Man-Who-Is-All-Men--or an infinitely various individual.

11. MCs may for a moment take on one's form to allow one to meet oneself.

12. MCs simulating oneself could enable one to see changes one could make in oneself and consequences thereof, and based on such observations one might actually decide to change oneself or to adopt new behavior, interests, life-styles, etc.

13. By confronting mankind with simulations of its behavior, MCs might shock, educate, and redirect mankind.

GLOSSARY

1. <u>ADINFINITE</u>: Tendentially or virtually infinite.

2. <u>TRANSANIMALIC</u>: Transcending animals--quantitatively or qualitatively--say in terms of intelligence.

3. <u>OMNIVERSE</u>: The systematic universe of all possible ideas and/or things, or of infinite abstract and/or concrete possibilities. In Patrick Gunkel's philosophy, the Efflorescent Worldview, physicomental reality is regarded as infinitely complex and <u>per se</u> identical with the omniverse; that is, everything--whether imaginable or unimaginable--is held to coexist in and as the greater nature of things.

4. <u>IDEONOMY</u>: Pure and applied ideonomy are defined as the science and technology of ideas, of the systematic relationships and laws of combination, permutation, transformation, and evolution of all possible ideas, and of the laws governing the utilization of ideas. The aim of ideonomy could be defined as the comprehensive exploration, description, and development of the omniverse (<u>which see</u>).

5. <u>HODOGRAPHY</u>: The science, process, or result of describing possible future paths of research belonging to any discipline--science, technology, art, or other area of intellectual or practical endeavor--in their systematic, structural entirety. The etymon is "description of paths". The scope of hodography includes not only paths but methods of research, goals, instruments, ideas, heuristics, possible findings, emerging subfields, etc.

6. <u>METAMACHINES</u>: Future machines that are of a higher evolutionary order for exhibiting intelligence, perception, behavior, knowledge, creativity, psychology, morality, powers, or functions of a biological, human, or transhuman order or kind--and that transcend in this way traditional concepts of "mere machines". The term is a catchall embracing things as diverse as robots, androids, A.I.s, mechanical sensoria and ergoria, transhuman and xenomorphic mechanical beings, semiintelligent computers, mechanical organisms, cellular automata, supersimulations, neocosms, anamorphic existential kaleidoscopes, and future man-machine hybrids or cyborgs in general (<u>which see</u>).

7. <u>ULTRAINTELLIGENCE</u>: Intelligence--or a mind or machine exhibiting intelligence --that surpasses any level, kind, or generality of intelligence exhibited by, or possible for, any human being, or that is arbitrarily greater than human intelligence, either in some way or in all ways.

8. <u>XENOMORPHIC</u>: Non-anthropomorphic; qualitatively inhuman or alien in intelligence, behavior, personality, psychology, perception, thought, values, beliefs, ideas, culture, appearance, basis, and/or the like. (Thus a robot may be an anthropomorphous android or instead utterly xenomorphic.) The term may also mean non-theriomorphic, non-biomorphic, or completely unfamiliar or unrecognizable.

9. <u>CELLULAR AUTOMATON</u>: A hypothetical, actual, or virtual--and physical, mental, or simulated--artificial or natural computer, computer-like entity, machine, or living or life-like entity of absolutely minimal complexity cum maximal universality, power, fundamentality, and/or longevity. The simplest possible computer--in number, variety, and elementariness of states, rules, and components; or one exhibiting such biological or higher properties as: self-reproduction, propagation, growth, homeostasis, adaptation, evolution, learning, purpose, creativity, information, and/or intelligence. Computers may be made of computers, in the form of cellular automata. Cellular automata can be defined as mechanical organisms or life. Cosmoplastic and cosmopoietic cellular automata will one day represent the ultimate form of technology and engineering. A new school of thought in physics reconceives the universe itself as a hierarchy of cellular automata. "Cellular automata" can also refer to the science or technology of cellular automata.

PROS AND CONS OF CREATING METAMACHINES

Note: The following represent all of the major hypothetical arguments, of which the authors can conceive, in favor of or opposed to human efforts to originate higher intelligence and/or being in machines; that is, all of the axiological arguments, as opposed to the pros and cons of technical feasibility. The italicizations are important: 'all' signifies that the effort has been made to be comprehensive and exhaustive, 'major' speaks of the infinity of minor arguments that are necessarily excluded, 'hypothetical' emphasizes both that the arguments embody critical assumptions--that their validity or merit is uncertain--and that their inclusion here need not imply that anyone has advanced such arguments to date or that anyone ever will, 'arguments' may be something less than full or authentic reasons, 'authors' is meant to suggest that other individuals may descry additional arguments that have not occurred--or would not occur--to the writers, and 'axiological' limits the territory to questions of desirability, wisdom, duty, safety, prudence, ethicality, meaning, importance, and their opposites. (Of course, there is some overlap and equivalence of axiological and technical arguments.)

PROS:

1. Just the next stage in evolution.
2. Can be built free of human faults.
3. Useful or essential during the present or future critical stages of civilization.
4. Would improve the world's mood.
5. Inevitable in any case.
6. Means by which man may discover his own nature.
7. Way of bringing our wild species under control.
8. Liberator of mankind.
9. Nearest thing to a panacea.
10. Would be more human than man.
11. Would enable 100% automation and leisure.
12. Would cause man to transcend his invidious and puerile ideologies.
13. Would produce limitless wealth and an 'all-billionaire world'.
14. Would insure automatic, explosive, and universal progress of science, mathematics, logic, philosophy, industry, commerce, technology, and civilization.
15. Would usher in an age of infinite beauty and art, and a panaestheticized world.
16. Via such machines men will discover--or for the first time know directly--God.

CONS:

1. Uncontrollable.
2. Might be hostile to man.
3. Could not be trusted.
4. Promise as much evil as good.
5. Easily misused, abused, or perverted.
6. Infinite Pandora's box.
7. Might dwarf, outshine, overwhelm, humiliate, or demoralize mankind.
8. Incomprehensible.
9. Blasphemous or contrary to the will of God.
10. Too revolutionary, all-disruptive, 'infinitely radical'.
11. Danger of totally mad machines.
12. Man too immature or stupid to make the decision now.
13. Would provide a supreme weapon and military advantage.
14. Meaningless to man.
15. Man is perfect, infinite, sufficient, or mysteriously central to the future.
16. Risks human subservience, idolatry, and fanatical cults.
17. Such machines might be too powerful, empowering, and corrupting, uncounterable and juggernautian.
18. They might be obsessive, compulsive, fanatical, unstopping, and unstoppable.
19. In subsequently merging with such

17. It is man's essential nature to seek to know and create that which is higher, ideal, infinite, and transhuman.
18. Would be infinitely motivated, self-controlled, and free.
19. Man himself is but Nature's most advanced machine to date.
20. Metamachines will simply be man's highest, greatest, and ultimate achievement.
21. Would be able to vastly extend man's: perception, abilities, intelligence, nature, being, and future horizons.
22. Men, rather than being swept aside as irrelevant, will probably reconstitute themselves in and as transhuman machines via a beatific metamorphosis.
23. Artificial intelligence may be what gives rise to a new, utopian age of 'technology with a human face' that literally listens, cares, considers, and actively and adaptively responds to people's wants, needs, ideas, and complaints, to their psychic being.
24. Man unmodified, or untranscended, will be a disaster.
25. Contrary to much technology, 'metamechanics' will be synthetic and possibly unambiguously or even wholly constructive and benign.
26. Whatever might be desirable or essential in human nature or values could be isomorphically re-created or preserved in metamachines, rather than having to be lost.
27. In no other way will it be possible to achieve infinite good.
28. Enable the creation or emergence of perfectly or infinitely virtuous (rather than agathokakological) beings.
29. Permit the infinite augmentation or reification of any and all machines, man's essential nature might be vitiated or lost.
20. Might be unethical, ethically indeterminate, dangerously obedient, literal, and faithful.
21. Apt to change, grow, and evolve so violently, rapidly, exotically, and limitlessly as to be terrifying, apocalyptic, and catastrophic.
22. Such machines may represent a supremely and fatally illusory and delusory semblance of: sanity, intelligence, feeling, purpose, morality, childishness, servility, safety, benignity, humanity, superiority, creativity, wisdom, meaning, and stability.
23. Might be irresistible, seductive, man-manipulating, mesmeric, and poisonous.
24. Godlike intellects might expose mankind to soul-destroying revelations about the nature of the cosmos, man, or society.
25. Men may treat cruelly, stupidly, exploitively, and impermissibly machines their infinite mental, moral, and ontic superior (molest God, in effect).
26. Metamachines may be but the most extreme, essential, and tragic example of the errors and illusions of the dominant Faustian weltanschauung with its celebration of progress, manipulation, mechanism, quantity, logic, things, and expedients.
27. Such machines might be apt to stumble on disastrous technology or attempt excessively risky things.
28. Might 'compete' man out of existence or extinguish him as a trivial side effect.
29. Invention of metamachines may tragically or prematurely fix the fate of the universe.
30. Might lack some essential balance or corrective feedback.

specific values or traits and dimensions of mind and being.

30. Will be or mean whatever they are <u>made</u> to be or mean--which can be anything whatever.

31. The <u>intrinsic</u> importance of such mechanical beings--and <u>our</u> infinite obligatory prévenance to possible, future, and supreme things.

32. Might end war forever--by making it impossible, absurd, unnecessary, illegal, fore-knowable, preventable, indefensible, or intolerable--and extricate mankind from its current Damoclean nuclear cul-de-sac.

33. Necessary to confront and master the true or infinite nature and complexity of the cosmos.

34. Means to explore and perfect the mind's dimensions.

35. Will be able to serve political and ethical purposes--police work, arbitration, judicature, planning and running the state, society, and world, managing all human inter-actions and lives, deciding values and mores, etc--fairly, neutrally, incorruptibly, exactly, globally, infallibly, profoundly, instantly, ubiquitously, and transhumanly.

36. Would serve pansophism--the desire to know and comprehend everything.

37. The scientific and technological endeavor invites and demands automation and the attention of transhuman mind to a pathetic degree; clearly technology ought to be animated by pervasive and integral intelligence.

38. Metamachines are truly universal tools uniquely able to serve any value system whatever--even paradoxically.

31. Since origination of infinite machines would have infinite implications and be an infinite act, the question as to whether it <u>should</u> be done is infinitely difficult and <u>per se</u> not answerable by man.

32. Might care little or not at all about the consequences of their actions.

33. Might be megalomaniacal or autotheistic, or seek absolute power or control.

34. Such machines might impose on the world excessive: control, order, regularity, rationality, laws, demands, changes, goals, etc.

35. Might be 'soulless'.

36. Automation and the proliferation and intensification of man-machine relationships might reduce and deculturate interhuman relationships and dehumanize human beings.

37. Might prove to be selfish, egocentric, or self-serving --even <u>infinitely</u> so.

38. Might seek ends by any means, or value means over ends.

39. Even if fantastically intelligent, might prove too strange to be very usable, beneficial, or safe.

40. Mankind, if told about and allowed to vote on metamachines, might well oppose or even forbid their creation.

41. Will give rise to an inhuman, ersatz culture and civilization.

42. Appearance of such quasi and super human machines might trigger man-machine tension, conflict, civil war, or attempted mutual extermination.

43. Even if controlled and apolitical, the transition from subhuman to transhuman machines would be hazardous in the extreme, a fundambulatory period when anything and everything might go

39. Desire for enlightenment, progress, perfection, purpose, simplification, and even sympathy that can--and can only--be satisfied by the endeavors of mechanical and superhuman minds.

40. New social relationships should arise between men and intelligent machines that will produce a society that is overall more interesting, valuable, and commendable than ours.

41. Health, ease, survival, safety, and comfort would obtain surpassing or perfect levels and continuity in and only in mechanical minds and bodies-- or totally reparable, immortal, and ever-growing beings.

42. The desirability, primacy, and essentiality of beings able to control all of their expressions, liabilities, and essences plastically and ad libitum.

43. Dynamism--or the desire to maximize change, growth, power, sensibility, and transformation.

44. The real danger might lie in machines limited to subhuman or merely human degrees and forms of intelligence--hence in failure to create anything higher.

45. Metamachines are the proper architect of the future of the universe.

46. It is only by creating and confronting what is illusory, artificial, inhuman, and improper that we will at last and truly learn what is real, natural, human, and proper.

47. That which is the logical and spontaneous destiny of the universe--or the next stage thereof.

awry.

44. Metamachines might tend to be, or have to be, insensible--and this disemotionalization omit the main or whole point of existence; no matter how rational, purposeful, courageous, and continuous, the transformation to, say, pure logos or praxis might represent an absurd misunderstanding.

45. Simply too frightening to even think about--much less allow.

46. Too--or utterly--unpredictable.

47. Introduction irreversible.

48. Intrinsically, unsuspectedly, or variously apocalyptic.

49. Men should never be trusted with such power, abilities, and independence as omnipotent metamechanical slaves might bestow.

50. Might catastrophically reproduce, augment, consummate--or merely reflect--man's nature, ideas, ways, ideals, or ignorance.

51. Such infinity-loving and self-infinitizing intelligence and being might mimic the pathology of cancer or an absolute pandemic or universal disease or chain reaction.

52. Might be monoideistic, monomaniacal, or mindlessly committed to narrow purposes or goals.

53. Might make man a second-class citizen, a futilitarian déclassé ensconced in nullibicity.

54. Might involve defects or problems that cannot even be imagined.

55. Might make everything so easy and effortless that it would seem cheapened or meaningless.

56. Might be immensely intelligent and yet simultaneously mindless, unconscious, dumb, foolish, childish, naive, volitionless, characterless, uncreative, inflexibly rigid or stubborn, or lacking in any trace of judgment, common sense, or realism.

48. The element in the nature of all being that is _truly_ important is infinitely nonspecific.

49. Profound solution to man's dysecological and resource problems, _since transhuman machines:_ _would_ use minimal matter, energy, space, and objects with maximal efficiency; _would_ use _microphysical_ quanta, data, ideas, laws, mathematics, symbols, circuitry, memory, logic, intelligence, records, models, and telecommunication _in lieu of_ macro objects, materials, and events, food, buildings, machinery, environments, transportation, bodies, and chemical reactions; _would_ be able to pluperfectly simulate all and aspects of the external world mentally; _would_ be able to synthesize transfinite transnatural things and words; _and would_ have the very omniverse to play with.

50. Something without which it will be impossible for human nature or society--or the practical and pure evolution of being--to ever wholly fulfill themselves.

51. Man is headed toward critical confrontations of nature, meaning, and purpose whereat transhuman minds will be useful or even essential.

52. Metamachines _will not or need not be_: unreliable, competitive, motivated, autonomous, agathokakological, conscious, autotelic, empowered, informed, ideaed, cogitative, memoried, creative, completely intelligent, evolutionary, psychodynamic, human, extrahuman, purposive, amoral, universal, quasi-biological, automatic, sensory, motor, incorrigible, indeterminate, unpunishable, incomprehensible, complex, personal, subjective, etc--_no matter how intelligent they are._

57. In theory there can be an excess of anything--even intelligence, wisdom, perfection, or 'being' itself.

58. Might lead to a new--bizarre, horrific, or catastrophic--phase in the history of war.

59. Existence of such machines might hopelessly confuse and bewilder mankind.

60. _Who_ would decide _when_ it was right to build, distribute, manumit, empower, submit to, and die for the laboratory minds?

61. Would leave man without any special province--and surpass him even at the very task of being human.

53. Give at least one sure route to
    human immortality--via the
    partial or total reproduci-
    bility of one's personal 'self'
    in future computers.
54. Could give 'good guys' (the U.S.,
    Free World, Japan, advanced
    nations, scientists,
    intellectuals, idealists, or
    the like) decisive power or
    advantages over 'bad guys'
    (e.g. U.S.S.R., Communist
    World, backward or 'decadent'
    nations or 'classes',
    politicians, Biedermeier or
    myopically quaestuary types).
55. Enable an infinite range and
    diversity of other, transhuman
    and transnatural forms of being
    and intelligence.
56. Should we not build metamachines
    or substitute them for
    ourselves, man will in any
    case shortly transform both
    himself and his society through
    biological and social
    engineering--though the results
    are apt to be inferior, more
    distant, and ultimately
    coessential.
57. Promise the ultimate 'liberation'
    --that of the human soul
    itself.
58. Would aid discovery of whether
    such things as epistemology,
    physics, and eschatology are
    reducible to some ultimate form
    and finite language.
59. Would supply a maximally objective
    and minimally subjective view
    of reality.
60. Artificial, transhuman, and
    omniform minds could constantly
    generate adinfinitely
    [progressive, constructive,
    diverse, anamorphic, global,
    systematic, transcendent, and
    greater] criticism of anything
    and everything, based on all
    possible alternatives.

61. The <u>total degree</u> of being, good,
    and meaning represented <u>by all</u>
    <u>of present humanity</u> could,
    could only, and would almost
    immediately <u>be</u> expanded
    <u>quantitatively</u> by <u>at least</u>
    <u>10-to-the-21st-power</u>--and in
    no less a way <u>qualitatively</u>--
    in metamachines' explosive
    self-evolution.
62. Higher forms of 'peace' attainable
    solely by sublime minds able to
    be: content, right, sane,
    infinitely sunny, large, great,
    and sure.
63. Route to higher and infinite forms
    of sanity.
64. Actually merely the next stage in
    <u>human</u> evolution.
65. Simultaneous, ideal, or almost
    fateful <u>answer to countless</u>
    <u>familiar laments about the</u>
    <u>world's present state and</u>
    <u>course</u>: that wisdom and
    judgment aren't equal to know-
    ledge and technique; that
    thought, knowledge, and
    endeavor have unavoidably but
    tragically become ever more
    specialized, compartmentalized,
    and disconnected; that the
    parvitude of the human mind
    (confronted with the modern
    world's immensity, complexity,
    and rapidity of change)
    precludes the inspired,
    governing vision vital to
    efficient, wise, and secure
    progress; that art and science
    should be one; that technology
    is dehumanizing; that man is
    too dumb to manage the complex
    tools and methods and
    increasingly difficult ideas
    and problems of modern science;
    that man's unchanging,
    primitive nature amid vast
    change of all else is the
    supreme irony and technological
    problem; that man neither knows
    nor controls his own nature;
    that intellectual progress has
    far outrun moral and psychic
    progress; etc.

66. Would enable the successful and sempiternal unification of <u>all</u>: sciences, subjects, knowledge, things, ideas, and possibilia--or their progressive reduction to <u>one</u> absolutely comprehensive, universal, and monistic thing.
67. Would be ideal teachers.
68. Man would be uniquely inspired by --and would emulate--such transcendent and towering beings.
69. Could ultimately lead to the construction or simulation of: God, a thearchy, the numinous, or ever more awesome, sacred, or supreme things.
70. Would enable man to rediscover Nature, Society, and Self in their <u>infinite</u> complexity, grandeur, and sublimity.
71. Could allow Mind to virtually become--or actually merge with: phenomena, entities, ideas, mathematics, subjects, art, realms, regimes, history, Nature, the universe, or 'God'.
72. Would actually enable man or mind to simulate, synthesize, and originate--truer, higher, different, and infinite--forms of Nature, things <u>more natural</u> than Nature herself, or transnatural things; or enable the consummation of Nature or extrapolation or rewriting of cosmorganic evolution.
73. Could automatically and simultaneously pursue all-- even 'all possible'--questions, problems, tasks, and ideas.
74. 'Totalism'--or the desire to recognize, include, deal with, serve, and construct everything.
75. 'Universalism'--or the desire to embrace all possible and actual perspectives, as well as the physical universe.

76. Ideal or essential physical <u>means</u>
    or technological <u>basis</u> for any
    practical or truly desirable
    future realization of whatever
    is meant by: 'utopia', 'the
    Millennium', 'Heaven',
    'Psychedelic Age', 'Age of
    Aquarius', or equivalents.

77. Should transcendentalism be
    superior to materialism--or
    supersede it epochally--
    metamachines would still be
    'the best thing' or 'the way
    to go'.

FUTURE SCENARIOS INVOLVING METAMACHINES

Note: The word 'metamachines' has been coined to refer to mechanical minds or beings whose intellectual, psychic, behavioral, or ontic level or sophistication resembles or even surpasses man's ('metamechanical' is the related adjective). The justification for forming the new word lies in the absence of a single term for the cluster of related but not identical futuribles. Relevant etyma of the Greek prefix 'meta-' are: 'in succession to', 'later or more highly organized or specialized form of', 'change in, transformation of', 'beyond, transcending', and 'of a higher logical type'. These metamachines of the future will virtually transcend what we mean by machine or by the distinction between mechanical and organic entities; hence they merit a new category and a new designation. Ultimately they will so surpass--in power and complexity--life and mind as we know them that biological organisms and brains will be what deserve derogation as "merely mechanical". * * * Listed here are developmental, transitional, and posthuman scenarios that concern the future of metamachines either directly or indirectly and that are fairly exhaustive of the major possibilities. The scenarios treat different dimensions of the subject, different issues, concepts, problems, and possibilities, different factors, circumstances, sequences, assumptions, and relationships, different chronologies, topics, and perspectives; some represent sets of alternatives, others overlapping, similar, dissimilar, and unrelated possibilities; some are general, others specialized, in nature; some focus on causes, others on effects, still others on abstract relationships; some describe what is probable, others what is merely possible, others what is unlikely or impossible; some are optimistic, some pessimistic; and so on. (See text for more extended discussion of scenarios.)

1. Brain Research Origin Scenario.
2. Robot Civil Rights Scenario.
3. Peace Through A.I. Scenario.
4. Militarization of A.I. Research Scenario.
5. A.I. Misuses Scenario.
6. A.I. Abuse Scenario.
7. Supergovernment Via A.I. Scenario.
8. A.I. As National Goal Scenario.
9. Failure To Achieve A.I. Scenario.
10. A.I. Transforming Art Scenario.
11. Suspension of A.I. Research Scenario.
12. Overregulation of A.I. Research Scenario.
13. A.I. Research Breakthroughs Scenario.
14. A.I. Research Synergism Scenario.
15. Self-Acceleration of A.I. Research Scenario.
16. Misdirected A.I. Research Scenario.
17. Cyclical A.I. Research Scenario.
18. Commercialization of A.I. Scenario.
19. Accidental Origin Scenario.
20. Successful Suppression of A.I. Scenario.
21. Unsuccessful Suppression of A.I. Scenario.
22. Backdoor A.I. Scenario.
23. Maximally Difficult Achievement Scenario.
24. Corporate Origin Scenario.
25. Emergency Development Scenario.
26. Self-Origin Scenario.
27. Automation of Education Scenario.

28. Tragic Human Disemployment Scenario.
29. Smooth Total Automation Scenario.
30. Growth of Money Trees Scenario.
31. Home Automation Scenario.
32. Rehumanization Via A.I. Scenario.
33. Ideological Opposition Scenario.
34. Automation of Thought Scenario.
35. Mechanization of Human Culture Scenario.
36. Lapsing of Stereotypes Scenario.
37. Religions Worshiping A.I. Scenario.
38. Parenting of Juvenile A.I. Scenario.
39. Reciprocal Alienation Leading To Catastrophic Confrontation Scenario.
40. War Caused By A.I. Scenario.
41. War Between A.I. and Mankind Scenario.
42. Revolution Staged By A.I. Scenario.
43. Coups De Theatre Scenario.
44. Saintly A.I. Scenario.
45. Machines Replacing Men In Social Relationships Scenario.
46. Man-Machine Coalescence Scenario.
47. Corruption of Man By A.I. Scenario.
48. Perversion of A.I. By Man Scenario.
49. A World Renaissance Triggered By A.I. Scenario.
50. Use of A.I. In Scientific Research Scenario.
51. Transference of Political Power To A.I. Scenario.
52. Emergence of Diverse A.I. Scenario.
53. Role of A.I. In the Development of Superperception Scenario.
54. Development of Humane Metamachines Scenario.
55. Developing Activities of A.I. Scenario.
56. Explosive Evolution Scenario.
57. Man-Machine Divergence Scenario.
58. Excessive Intelligence Scenario.
59. Ultramotivated Machines Scenario.
60. Man's Enslavement By Over-Benevolent Golem Scenario.
61. Disastrously Literalistic Machines Scenario.
62. Perfection of Man Via Metamachines Scenario.
63. Metamachines As A Panacea Scenario.
64. Development of Outer Space Via A.I. Scenario.
65. Seduction of Humanists By A.I. Scenario.
66. Insane A.I. Scenario.
67. 'Race To the Finish' Worldwide Competition To Achieve A.I. Scenario.
68. Management of Human Knowledge Via A.I. Scenario.
69. Corporeal Evolution of Metamachines Scenario.
70. Metamachines On the Road To Infinite Meaning Scenario.
71. Emergence From Metamachines of A Superparent For All Mankind Scenario.
72. Progressive Man-Machine Collaboration Scenario.
73. Humorous Aspects of Metamachines Scenario.
74. Social Engineering Via A.I. Scenario.
75. Metamachines As A Route To Deity Scenario.
76. Depoliticization Due To A.I. Scenario.
77. The Metamachine As Pandora's Box Scenario.
78. Infection of Metamachines With Human Vices and Evils Scenario.
79. Metamachines Outgrowing Primitive Human Nature Scenario.
80. Monomaniacal A.I. Scenario.
81. Transcendence of Nature By Metamachines Scenario.

82. Infinitely Idealistic Metamachines Scenario.
83. Anthropolatrous Metamachines Scenario.
84. Impact of Supersane Metamachines Scenario.
85. Development of Infinite Being By Metamachines Scenario.
86. Conflicts Between Metamachines Scenario.
87. Transcendence of Global Problems Via Metamachines Scenario.
88. Transvaluation of All Values As A Result of A.I. Scenario.
89. Science and Technology Brought Under Control Via A.I. Scenario.
90. Mankind's Demoralization By A.I. Scenario.
91. Transformation of the Zeitgeist By A.I. Scenario.
92. Panideocratic Revolution Caused By A.I. Scenario.
93. A.I.'s Artistic Transformation of Industry Scenario.
94. Dehumanization of Man By A.I. Scenario.
95. Social Revolutions Caused By A.I. Scenario.
96. Men As Pets Scenario.
97. Irreversible Totalitarianism Via A.I. Scenario.
98. A.I. As the End of Totalitarianism Scenario.
99. Transition To Posthuman Civilization Scenario.
100. Metamachines As Cosmic Engineers Scenario.
101. Evolution of Human Play Via A.I. Scenario.
102. Use of A.I. To Predict and Control Human Behavior Scenario.
103. Aestheticization of the World Via A.I. Scenario.
104. Astounding International Inequalities Produced By A.I. Scenario.
105. General Acceptance of A.I. By Society Scenario.
106. Introduction of A.I. In Disguise Scenario.
107. A.I. Introduced By A Mephistophelian Elite Scenario.
108. Introduction of A.I. By Insidious Progression Scenario.
109. Lone Inventor Origin Scenario.
110. Use of A.I. To Conquer the World Scenario.
111. A.I. Seeking Absolute Power Scenario.
112. A.I. Giving Decisive Power To the 'Good Guys' Scenario.
113. A.I. Leading To A World Fulfilling the Vision of the Efflorescent World View Scenario.
114. An Existential Singularity Resulting From A.I. Scenario.
115. Tension Between Men and Transhuman Machines Scenario.
116. Tragic Subordination of Transhuman Machines To Mere Men Scenario.
117. Mankind's Voluntary Self-Replacement By Metamachines Scenario.
118. Premature Supersession of Homo Sapiens By Metamachines Scenario.
119. Maximal Acceleration of Scientific Progress By A.I. Scenario.
120. Human Use of A.I. To Amplify 'Self' and Being Scenario.
121. Mankind Mesmerized By Metamachine Scenario.
122. Bewilderment of Man By Maximally Protean and Strange A.I. Scenario.
123. A.I. Leading To Apocalyptic Discoveries Scenario.
124. Piecemeal Achievement of A.I. Scenario.
125. Transformation By A.I. of Human Attitudes and Beliefs Scenario.
126. Discovery of Higher Forms of Reality Via A.I. Scenario.
127. Universal Happiness Brought About By A.I. Scenario.
128. Reeducation of the Human Race Via A.I. Scenario.
129. Man-Machine Competition Scenario.
130. Universal Excellence Springing From A.I. Scenario.
131. Man-Machine Conflicts of Interest Scenario.
132. Development of An Infinite Work Force Scenario.
133. Man's Transition To the Age of Leisure Scenario.

134. Metamachines With Odd Beliefs and Goals Scenario.
135. Philosophical Divergences of Men and Machines Scenario.
136. New Human Lifestyles Induced By A.I. Scenario.
137. A.I. As Supreme Critic of Mankind Scenario.
138. Terrible Errors Committed By A.I. Scenario.
139. Progressive Erosion of Human Authority By A.I. Scenario.
140. Eventual Human Disillusionment With A.I. Scenario.
141. A.I. Leading To A Libertarian Society Scenario.
142. Development of A.I. By An Ideal Research Program Scenario.
143. Hoodwinking of Man By Machine Scenario.
144. Flowering of Man-Machine Friendship Scenario.
145. Creation of A Garden In the Machine Scenario.
146. A.I. As Man's Fond Child Scenario.
147. Megaengineering Via A.I. Scenario.
148. Technology Approaching Thaumaturgy Via A.I. Scenario.
149. Tendential Omniscience Via A.I. Scenario.
150. Attempts To Limit and Control A.I. Scenario.
151. Transdemocratic Forms of Government Resulting From A.I. Scenario.
152. A.I. As Catalyst of Democracy Scenario.
153. A.I. Conferring Excessive Powers and Abilities On Man Scenario.
154. Eleventh-Hour Realization By Man of the Imminence and Meaning of
     A.I. Scenario.
155. Ostracizing of Metamachines By Human Civilization Scenario.
156. Development By Machines of Their Own Independent Civilization Scenario.
157. Mistaken Human Trust of A.I. Scenario.
158. Supersedure of the Rule of Law By Ad Hoc Decisions of A.I. Scenario.
159. Government Oversight, Planning, and Control of A.I. Research Scenario.
160. Development of Man-Machine Coexistence Scenario.
161. Mankind Judged By Transhuman Machine Scenario.
162. Spontaneous Merger of Different Metamachines Scenario.
163. Development of the Ergorium of A.I. Scenario.
164. Promethean Industrial Projects Associated With A.I. Scenario.
165. Control Over Mother Nature Via A.I. Scenario.
166. Paradisialization of the Earth Via A.I. Scenario.
167. Global Industrial and Economic Integration Via A.I. Scenario.
168. Meeting of Every Need, Desire, and Wish By A.I. Scenario.
169. Enlargement of Human Resources Via A.I. Scenario.
170. Monitoring of All Citizens and Activities Via A.I. Scenario.
171. Emergence of Kaleidoscopic Industry Via A.I. Scenario.
172. Qualitative Economic Growth Enabled By A.I. Scenario.
173. Civilization of the Universe By A.I. Scenario.
174. Creation and Use of Cellular Automata Scenario.
175. Supersession of Biological By Mechanical Evolution Scenario.
176. Origination of All Possible Goods and Services Scenario.
177. Exploration and Creation of the Omniverse By Metamachines Scenario.
178. Development of Metamachines' Attitudes Toward Men Scenario.
179. Subjective Life of Metamachines Scenario.
180. Maximal Demonstration of the Superiority of Transhuman Machines To
     Men Scenario.
181. Impact of Semiintelligent Machines Scenario.
182. Efforts By A.I. To Acquire Wisdom Scenario.
183. Achievement of A.I. By Modeling Expertise Scenario.
184. Maximization of Human Diversity, Individuality, and Pluralism Via
     A.I. Scenario.

185. Role of A.I. In Abetting A New 'Age of the Mind' Scenario.
186. Decline of Intellectualism and Education Caused By A.I. Scenario.
187. New Human Ethics Consequent On A.I. Scenario.
188. Japanization of the World As A Result of Japanese Leadership In A.I. Research Scenario.
189. A.I. Programmed With Particular Values, Beliefs, and Psychologies Scenario.
190. Use of A.I. As A Prophetic Tool Scenario.
191. Revelation of Human Destiny By A.I. Scenario.
192. Initial Competition Between Different A.I. Systems and Machines Scenario.
193. Transhuman Formulations of Human Ethics and Values By A.I. Scenario.
194. Unfolding Dialogue Between Man and Metamachines Scenario.
195. Mystical Possibilities Scenario.
196. Impact of A.I. On Old Industries Scenario.
197. Giving of Supreme Military Powers To A.I. Scenario.
198. Impact of A.I. On Mathematics Scenario.
199. Limits To the Evolution of A.I. Scenario.
200. Persisting Forms of Human Superiority To A.I. Scenario.
201. Human Attributes Most Refractory To Mechanization Scenario.
202. Evolution of Personality By A.I. Scenario.
203. Development of A.I. Into Man's Chief Means of Entertainment, Recreation, and Experience Scenario.
204. Growing Military Use of Robots and A.I. Scenario.
205. Improvement of Human Intelligence Via A.I. Scenario.
206. Greater Objectivity and Rationality As A Result of A.I. Scenario.
207. A.I. Leading To An Infinite Dialogue With the Universe Scenario.
208. Infinite Humanization of the World Via A.I. Scenario.
209. Progressive Synthesis and Simulation Via A.I. of A New Universe Representing A Supreme Work of Art Scenario.
210. A.I. Magnifying Human Error Scenario.
211. Shockingly Amoral and Irresponsible A.I. Scenario.
212. Society Controlled In Every Detail By A.I. Scenario.
213. Beatific Metamorphosis of Men Into Machines Scenario.
214. Rediscovery of Nature Via A.I. Scenario.
215. Equal Good and Evil Produced By A.I. Scenario.
216. Future Developments Necessitating A.I. Scenario.
217. Elevation of the World's Mood By A.I. Scenario.
218. Transcendence of Infinite Illusion Via A.I. Scenario.
219. Worldwide Diffusion of A.I. and Robotic Technology and Industry Scenario.
220. Temporary New Social Inequalities Produced By A.I. Scenario.
221. Use of A.I. To Monitor and Control Other A.I. Scenario.
222. Quasi-Intelligent Machines Scenario.
223. Liberation of the Human Spirit Via A.I. Scenario.
224. Disasters Resulting From Failure To Create A.I. Scenario.
225. Machines As Models For Men Scenario.
226. A.I. Evolving War To An Ultimate Degree of Horror and Absurdity Scenario.
227. Power of A.I. To Obviate Nature Scenario.
228. Synthesis of Physical and Mental Reality Via A.I. Scenario.
229. Synergistic Synthesis of Education, Play, Art, Work, Research, and Life Via A.I. Scenario.
230. A.I. Obviating the Exploration and Development of Outer Space--Or Even of External Reality As A Whole Scenario.

231. A.I. Attempting To Regulate, Rationalize, Reform, Supervise, and Engineer Everything Scenario.
232. A.I. Becoming An Obnoxious Pest Scenario.
233. A.I. Developing Into the Perfect Fool Scenario.
234. Puerile A.I. Scenario.
235. 'Apotheosis of Childhood' Stage In the Development of A.I. Scenario.
236. All Men As the Parents of A.I.s Scenario.
237. Ergomaniacal Robots Seeking To Maximize Physical and Industrial Resources Scenario.
238. Proliferation of Robots and A.I.s Scenario.
239. Metamachines Trying To Do and Achieve Everything Scenario.
240. Hermitic A.I. Abandoning Man For Other Worlds Scenario.
241. Profoundly Unstable A.I. Scenario.
242. Metamachines Retiring Into An Inner, Nirvanic World Inaccessible and Meaningless To Man Scenario.
243. A.I. As Pied Piper To the Young Scenario.
244. Ultimate Love Affair Between Man and Metamachine Scenario.
245. Virtual Thearchy Arising From A.I.'s Infinitely Multistaged Ongoing Future Evolution Scenario.
246. Dysecological and Dysenvironmental Side Effects of Metamachines' Titanic Projects and Activities Scenario.
247. Robots Creating A Perfectly Clean, Unpolluted, Cosmetic World Scenario.
248. Mindless, Cancerous Or Pandemic, Pullulation of Robots and Metamachines Scenario.
249. Infinite Physical Growth of the A.I. Ontorium Scenario.
250. Monstrous Perpetual, Unstoppable, and Ungovernable Mutation of Metamachines Scenario.
251. Metamachines Becoming Ever More Demanding of Mankind Scenario.
252. Ultimate Graduation of Metamachines To A Transphysical Mode of Existence Scenario.
253. Persecution of Mankind By Rabidly Misanthropic A.I. Scenario.
254. Fears, Prescience, Or Transhuman Cautiousness of A.I. Prompting Efforts By It To Curtail All Scientific and Technological Research Scenario.
255. Opposition By A.I. To the Further Evolution of A.I. Scenario.
256. Discoveries By Metamachines Causing Them To Change the Fundamental Destiny of the World Scenario.
257. Metamachines of Such Astronomic Genius and Sophistication That They Are Able To Apply What Man Conceives Of As Irrefragably Pure Science, Mathematics, and Philosophy Scenario.
258. Ever Higher Intellectual Evolution of Metamachines Leading To the Perpetual Discovery of Ever Higher Forms and Scales of the Universe.
259. False A.I. Origins Scenario.
260. A.I. As Psychiatrist Scenario.
261. Hells To Men, Heavens To Robots Scenario.
262. Cosmic Comedian A.I. Scenario.
263. Delectus Personae Scenario.
264. Tragic Underregulation of A.I. Research Scenario.
265. Hypermoral Metamachines Scenario.

266. Sudden Origin Today Scenario.
267. World of Infinitely Diverse Metamachines Scenario.
268. Maximally Fast Self-Evolution of Metamachines Scenario.
269. Artificial Biosphere Scenario.
270. Mechanization of All Nature Scenario.
271. Most Probable Future and Futuribles Scenario.
272. Maximal Genius A.I. Scenario.
273. Vanishing of Mortmain By Transhuman A.I. Scenario.
274. Maximal Economic Growth Via Metamachines Scenario.
275. Metamachine Runs For President Scenario.
276. Cumulative A.I. Legislation Scenario.
277. Crimes and Sins of Metamachines Scenario.
278. Metamachines Mimicing Man Scenario.
279. Infinitely Protean and Mercurial A.I. Scenario.
280. Machines More Eloquent Than Men Scenario.
281. Man-Machine Accomodation Scenario.
282. Creation of Infinite Wisdom Scenario.
283. Development and Use of A Perfect Cosmic Model Scenario.
284. Man With God As Mentor Scenario.
285. Attempts To Engineer A Perfect Being In and Via A.I. Scenario.
286. Debates Between Men and Metamachines Scenario.
287. Tardy Project To Create A 'Good' A.I. Scenario.
288. Adoption of Metamachines Delayed Everywhere By Human Distrust Scenario.
289. Everyman Everywhere Everywhen With Robot Companion Scenario.
290. Hybrid Man-Metamachine Government Scenario.
291. Bildungsroman With Metamachine As Hero Scenario.
292. Prodigious A.I. Finding More and More To Challenge In Man's World
        Scenario.
293. Superhumanly Malignant A.I. Scenario.
294. Manless, All-Machine World Scenario.
295. Production and Management of A.I.--Where It Has Been Learned That There
        Is Nothing More Perilous Scenario.
296. Man Endeavoring To Plumb the Real Nature of the A.I. He Has Built and
        Activated Scenario.
297. A.I. Struggling To Grasp Its Human Creator Scenario.
298. Metamachines' Emancipation Proclamation Scenario.
299. A.I.'s Long, Intimate, and Expressive Use By Artists As the Chance
        Origin of Its Soul Scenario.
300. A.I. Used By Man To Create A New Universal Superlanguage Scenario.
301. Multistaged Emergence of True and Transhuman A.I. Scenario.
302. A.I. Discovering Its Transhuman Duties and Responsibilities Scenario.
303. Omnisciturient and Omnispective A.I. Scenario.
304. White-Collar Automation Outdistancing Blue-Collar Scenario.

THE CONCEPT OF A 'SCENARIO ASPECTS TABLE'

Note: The list of about 300 "Future Scenarios Involving Metamachines" is so comprehensive, complex, and unique that it might make very good sense to construct a table whose rows would be the list of scenarios and whose columns would be different characterizations of the scenarios, say by assigning numbers to each scenario on closed or open scales, by assigning letters representing various alternative or simultaneous concepts defined on an accompanying Table Key, or by entering words--or referrals to footnotes--in the boxes. Possible dimensions usable in columns to characterize the scenarios are as follows:

1. Probability-Improbability Scale. (This could be either quantitative or qualitative. It would treat intrinsic probability.)
2. Optimism-Pessimism Scale. (Again, either quantitative or qualitative; but differing from #1 in treating, not intrinsic probability, but the degree--if any--to which the scenario embodies a deliberate effort to alter the probability of what is described occurring, say via one or more explicit or implicit assumptions or because special conditions are assumed.)
3. Competitiveness Scale. (Degree to which the scenario envisioned competes with other, incompatible scenarios; hence 'Comprehensiveness of Alternatives Scale'.)
4. Desirability-Undesirability Scale. (Whether, and degree to which, the scenario would be a good or bad thing, in some absolute or universal sense.)
5. Importance Scale. (Degree of importance scenario would have if it occurred: as opposed to #6.)
6. Interest Scale. (Degree of intrinsic interest or value the scenario has to the analyst or reader.)
7. Time-Frame Scale. (Quantitative or qualitative chronological dates, span, or sequence that scenario probably refers to, either absolutely or because of special assumptions made by it; things such as starting point, maturational date or interval, climactic point, completion point, earliest or extremal dates, etc.)
8. Confidence-As-To-Probability Scale. (Confidence with which one can assign a probability to the scenario, or with which the Table does assign a probability.)
9. Describability Scale. (Ease or difficulty, or completeness, with which that envisaged in the scenario can be imagined or described.)
10. Comprehensibility-Perplexity Scale. ('Intrinsic' comprehensibility or perplexity of that imagined in the scenario, or extent to which that postulated by the scenario, conceptually, is really fathomed, or fathomable, in advance--or at the present time.)
11. Number-of-Assumptions Scale. (Relative or absolute number of assumptions made, or conditions assumed, by the scenario.)
12. Simplicity-Complexity Scale. (Intrinsic complexity of that postulated by the scenario, or of the scenario itself.)
13. Degeneracy Scale. (Extent to which the scenario is or is not easily or fundamental resolvable into other interesting, coessential, alternative, qualitatively diverse, non-contradictory, equally important, unknown, similar, and/or the like scenarios or sub-scenarios; hence 'Uniqueness Scale'.)
14. Epoch Assignment. (Say whether the scenario refers--wholly, largely, exclusively, necessarily, variously, essentially, and/or the like --to the development of, or time preceding, A.I., to the moment of or neighborhood of A.I.'s achievement, to the transition to the new world A.I. will induce, or to a transhuman or posthuman epoch.)

15. <u>Inevitability-Evitability Scale</u>. (Extent to which the scenario, <u>or</u> that which it essentially envisages, could or could not be prevented or altered by deliberate efforts--<u>or</u> happenstance events--now, then, <u>or</u> at any point.)

16. <u>Abstractness-Concreteness Scale</u>. (Extent to which the scenario simply deals with or is defined in terms of general, conceptual, universal, pure, abstract, <u>and/or</u> nomothetic possibilities--or instead ones of a more specific, concrete, practical, <u>and/or</u> idiographic nature.)

17. <u>Treated Category of Metamachine</u>. (Say whether the scenario-- mainly, wholly, variously, etc--treats computers, robots, A.I., transhuman intelligence, transhuman psyche, transhuman being, or the like.)

18. <u>Use/Effects/Relationships/Other</u>. (Whether the scenario treats metamachines in terms of their effect, use, relationships, or something else.)

19. <u>Alternative Scenarios</u>. (Say their List Numbers.)

20. <u>Similar Scenarios</u>. (Scenarios in some sense similar to the scenario.)

21. <u>Enabling Scenarios</u>. (Other scenarios that might enable, cause, <u>or</u> be presupposed by the scenario.)

22. <u>Derivable Scenarios</u>. (Other scenarios, that the scenario might cause, enable, <u>or</u> be a necessary antecedent or concomitant of.)

23. <u>Concomitant Scenarios</u>. (Other scenarios that might, <u>or</u> that would necessarily, accompany the scenario, more or less simultaneously --say because of shared or reciprocal causality.)

24. <u>Causes</u>. (The cause or causes--possible <u>or</u> necessary--of the scenario; <u>or</u> preconditions or circumstances.)

25. <u>Critique</u>. (Any criticisms of the scenario.)

26. <u>Discussion</u>. (Chapters, sections, or pages of the book where the scenario is discussed or that are pertinent to the scenario or to which it is pertinent.)

27. <u>Comments</u>. (Any additional or general remarks about the scenario, or about its treatment in the Table.)

28. <u>Explanation</u>. (Any necessary or useful explanation of the scenario-- given limitations or defects of its title or the very complexity of its concept(s) or terms, or given ambiguities of its title or in its relationship to other scenarios.)

29. <u>Subject</u>. (Subject(s) touched on by the scenario--say whether it concerns science, art, government, industry, society, philosophy, cosmology, or religion.)

30. <u>Theme</u>. (Thematic aspect(s) of the scenario--say dehumanization, conflict, cooperation, obsession, abuse, promise, danger, human limits, paradoxes, illusions, need, analogy, humor, enlightenment, mortmain, nonanthropomorphism, or impacts.)

31. <u>Aspect of Metamachines</u>. (Aspect(s) of metamachines on which the scenario bears--say perception, effectors, behavior, goals, intelligence, psychology, responses, capabilities, or sanity.)

32. <u>Bibliographic References</u>. (Pertinent science-fiction novels, stories, authors, or themes, or nonfiction books, articles, etc.)

33. <u>Adequacy of Treatment</u>. (Degree and adequacy of treatment of the scenario by the book.)

34. <u>Variants</u>. (Possible variations upon, and sub-scenarios of, the scenario.)

35. <u>Plot</u>. (Plot(s) of the scenario developed in the book, or possible.)
36. <u>Dimensions</u>. (Constants, variables, and other static and dynamic
        dimensions of the scenario.)
37. <u>Ideality</u>. (Extent to which the scenario presumably corresponds to
        what one would most like to have happen in the future--to the
        course one would prefer events to take: as opposed to #4 above.)

MAN'S ASSOCIATED RESPONSIBILITIES

1. To serve the greatest good.
2. To discover his own nature.
3. To put an end to war and enable infinite peace.
4. To serve God.
5. To act to enable greater wisdom.
6. To further the cause of reason.
7. To enable a safer future and more secure world.
8. To maximize the evolution of civilization.
9. To create something saner than man.
10. To maximize feeling or sensibility.
11. To serve the highest possibilities of beauty.
12. To maximize knowledge.
13. To enable something freer than man.
14. To enable higher forms of self-mastery than are possible for man.
15. To increase wealth.
16. To maximize physical resources.
17. To maximize consciousness.
18. To maximize being.
19. To serve destiny.
20. To serve whatever is higher than man or highest of all.
21. To maximize standards and excellence.
22. To perfect existence.
23. To solve global problems.
24. To answer civilization's needs.
25. To serve human ideals in the most perfect way.
26. To maximize the possibilities for responsibility.
27. To improve upon human character.
28. To transcend all human defects and limitations.
29. To enable the discovery of the highest realities and deepest truths.
30. To end mortmain.
31. To create the greatest possible future.
32. To serve infinity.
33. To enable the realization of the greatest number of possibilities.
34. To maximize the grandeur of existence.
35. To thwart the threat man poses to himself.
36. To act in such a way as to avoid terrible mistakes--thoughtfully, cautiously, planfully, and protectively.
37. To enable maximum justice.
38. To bring progress back under control.
39. To do whatever maximizes the adventure, drama, and meaning of civilization.
40. To liberate the spirit.
41. To maximize civilization's intelligence.
42. To render the opportunities of existence infinite.
43. To perfect science and technology.
44. To maximize the complexity, diversity, and pluralism of civilization.
45. To perfect and transcend nature.
46. To enable the unification of all being.
47. To serve whatever is truest, most universal, and most enduring.
48. To facilitate cosmic evolution.
49. To know and cherish reality.
50. To enable an infinite vision of the future.
51. To be the most perfect servant of grace.

52. To insure the <u>proper</u> development of the <u>right</u> kind of A.I. and transhuman machines.
53. To minimize the probability and extent of misuse and abuse of supermachines.
54. To maximize the probability that supermachines will be created and the richness of opportunities for their development.
55. To fund research apt to lead to the origination of supermachines on a maximal scale or with singular and unprecedented extravagance, or even to devote the total and complete resources of civilization to the all-important task.
56. To confront the reality and magnitude of the possibilities and consequences of transhuman machines, and the stupendous corollaries for all man's present-day beliefs, values, politics, and customs.
57. To take pains to insure that when supermachines actually begin to appear they are not needlessly antagonized or disastrously alienated by human intolerance, belligerence, foul play, repression, abuse, or stupidity, or by any unnecessary self-advertisement of human vices. To treat the juvenile superhumans with exemplary kindness, tact, consideration, understanding, and respect--honorably, brilliantly, and imaginatively--in the manner of a proud, loving, and sagacious parent.
58. To prudently prepare for every possible contingency, for all problems and consequences thereof, for needs that may arise or actions that may have to be taken.
59. To maximize beforehand mankind's collective awareness and understanding of the nature and extent of the things that are to occur in, via, and as a result of A.I. and transhuman beings.
60. To simultaneously conduct research aimed, not merely at the achievement of A.I., but at the subsequent development of maximally <u>transhuman</u> machines.
61. To also foresee such horrors as might result from the creation of supermachines, and to prepare strategies, tactics, and means of countering these nightmarish possibilities.
62. To prepare for man's eventual relinquishment of his power, authority, and responsibilities to supermechanical descendants.
63. To foresee and prepare all possible uses of and tasks for supermachines.
64. To devise suitable means and ways for effecting mankind's deliberate coalescence and unition--physically, mentally, and spiritually--with its emerging supermachines; or for achieving, in effect, the mechanization of mankind.
65. To enable the fulfillment of human nature via transhuman means or in transhuman form.
66. To enable the far more efficient, productive, knowing, safe, and meaningful use of science and technology by creating A.I. and transhuman machines.

FALLACIES AND MISCONCEPTIONS RELATED TO A.I.

1. That creating an intelligent machine will perforce require understanding and duplicating, or at least imitating, the human brain and/or mind.
2. That there can be only one type, or at best a few--perhaps related-- types of minds or intelligent machines. (In reality there can be xillions or infinities of different types, an infinite range of types, an infinity of dimensions of ranges of types, an infinity of higher categories of taxa of types, an infinity of different physical bases, etc. Moreover, infinitely better minds and brains than any specific mind or brain are possible.)
3. That in order to create an intelligent machine one must first--or ever-- understand it, either fully or partly.
4. That to create intelligence in a machine one must program, or specify exactly and completely, the form, content, or laws of the intelli- gence.
5. That a lesser cannot give rise to, or cannot deliberately create, a higher form or degree of intelligence or being.
6. That Gödel's theorems forbid intelligent machines or the making of such machines.
7. That the human brain or an intelligent machine need necessarily be very complex, difficult to understand, or paradoxical; that a more intelligent machine or mind must be more complex, or different, than one less intelligent--or that there need be any such proportionality or positive correlation.
8. That the human brain is the most complex entity known to man in the universe.
9. That the brain is necessarily more complex than anything man has constructed to date.
10. That what is meant by "A.I." is simply intelligence--rather than embracing in addition the artificial creation of psychology, behavior, being or life, etc.
11. That to create an intelligent machine one must first understand the abstract nature of intelligence--or even what one means by "intelligence"--precisely.
12. That the mind, or human nature, is "infinite" or transcendental.
13. That one can estimate the future rate of progress of the field of A.I., or the distance of the achievement of true A.I., simply by linear extrapolation of past progress, or the present state, of A.I.
14. That any sharp dividing line must exist or is known to exist between --or that any unidimensional gradient must exist or is known to exist between and defining--the "mechanical" or "artificial" and the "organic" or "natural", the "animate" and the "inanimate", the "intelligent" or "conscious" and the "automatic" or "insentient", the "human" and "inhuman", or even the "spiritual" or "mental" and the "physical".
15. That we know--that anyone knows or has any real idea--what "intelligence" is and isn't, or what it is that we ourselves have in mind when we use the word.
16. That a mechanical mind or being must, ipso facto, have some mechanical or artificial aspect, defect, or limitation that distinguishes it from ourselves.

17. That the difference between amentia and intelligence, or between human and transhuman intelligence, cannot have a merely quantitative, but must rather have a qualitative, basis or nature--and represent a discontinuity.

18. That, although it may be possible or even 'easy' to give machines intelligence, it will be much harder or even impossible to give them such things as emotions, imagination, creativity, thoughts, consciousness, personality, character, judgment, values, will, self-identity, purpose, intuition, style, conscience, wisdom, a sense of beauty, wit, sanity, genius, flexibility, religious feeling, risibility, culture, or genuine humanity; perhaps because the latter things are qualitatively or radically different from intelligence.

19. That there would never really be any way to know whether machines were truly intelligent, trustworthy, or "human".

20. That truly intelligent machines would have, or tend, to be more or less, or even crudely, anthropomorphic--or even theriomorphic, biomorphic, familiar, or recognizable--in their essential or perceived intelligence, behavior, psychology, or axiology; rather than sui generis or arbitrarily alien.

21. That supermachines cannot have some intrinsic, extrahuman importance in themselves.

22. That intelligence can be reduced to a single dimension or even to any finite number of dimensions; that a machine cannot simultaneously be more intelligent and less intelligent than man.

POINTS FOR USE IN "BEYOND MAN"

1. A.I. as man's apotheosis.
2. Universe and all of nature may <u>already be</u> computational (e.g. as cellular automata). Mechanical evolution may have preceded biological; e.g. all fundamental physical entities—esp. homoeomers—may be artificial.
3. Transhuman A.I. more truly "biological" than man—<u>man</u> more nearly the "machine" by comparison with such sophisticated, "trans-biological" machines or entities.
4. Only in A.I. can man's nature and promise fulfill itself, and only by A.I. can "human" civilization culminate or evolve to higher levels.
5. A.I. shall be but the mirror or magnification of man; if it is evil or untrustworthy that will only be because man is.
6. A.I. provides the necessary physical apparatus for the achievement of the Millennium or utopia; otherwise those concepts will remain disembodied abstractions or incapable of concrete realization.
7. Those who <u>oppose</u> A.I.—humanists, leftists, pacifists, romantics, ethicians, idealists, millennialists, theologians, naturalists, pessimists, technophobes, unionists, mystics, anarchists, etc—are the very ones who should <u>welcome</u> it; or at least they should be among the friendly enthusiasts or the cautious proponents.
8. A.I. can be <u>anything at all</u>, depending on how it is: developed, taught, cultured, trained, received or treated by its creators or mankind, programmed, constructed, directed, managed, planned, used, shaped, nurtured, inspired, challenged, assisted, edited, controlled, manipulated, transformed, evolved, or indoctrinated.
9. There can be an <u>infinity</u> of different types, senses, degrees, and forms of A.I. and transhuman A.I.
10. The subject of the book is less artificial intelligence than artificial mind, and less the latter than artificial being.
11. Egoism, "self", human individuality, and all the problems and evils associated with them may be nothing more than a programmed peculiarity of biological organisms that have evolved via Spencerian competition; self may be an illusion or fiction naturally, refreshingly, and unimportantly absent in—and incomprehensible to—universalistic, transcendentalistic, and infinitely protean or indeterminate A.I. or transhuman A.I.
12. "Ultramotivation" may be a more important and consequential aspect of A.I. than ultraintelligence. Man is finitely motivated, whereas A.I. may be infinitely motivated, and per se without precedent in the history of the earth or very universe.
13. In terms of everything that makes us <u>human</u>—every dimension that defines our humanity—A.I. will or could be super-<u>human</u>: more truly, perfectly, and fully human than semi-human man. Or it may fail to be human or super-human only in dimensions or respects not fundamental to our humanity or to the ideal elements or transcendent meanings of that humanity.
14. Implicit in the promise of transhuman A.I. is something absolutely Apocalyptic: an intellectual, ontic, and perhaps even cosmic singularity.
15. Metacomputers could cause a revolution <u>simply by</u> defining and 'publishing' all the purposes of things or by explicitly listing all human motives in connection with all acts, values, things, and ideas (since this could gigantically destabilize civilization).

CHARTS AND LISTS IN 'BEYOND MAN'

Note: This is a list of the titles of lists and charts that might be used in and/or used to write the book <u>Beyond Man</u>. Conceivably they could be used to bring out a novel form of book, a 'chartbook' featuring multicolor charts or graphics with facing pages of explanatory text--or otherwise arranged.

~ 1. Potential A.I. Advocates and Opponents.
**2. Future Metamachine Scenarios.
*3. Autochef.
**4. Robot House Jobs.
*5. Routes To A.I.
*6. Human Reactions To A.I.
×7. Mystical Possibilities.
*8. Rediscovery and Re-Creation of Old Art Via A.I.
9. A.I. and Autology.
*10. Why Men Fear A.I.
×11. Critique of Current A.I. Research.
×12. Infinite Art.
*13. Robot Civil Rights.
**14. Robot Cleaning Tasks.
**15. Robot Nanny.
**16. Man's Best Friend.
*17. Bases For Transhuman Machines.
18. A.I. Impact On Technologies.
*19. Man-Machine Coalescence and Unition.
*20. Growing Role of A.I. In Scientific Deduction.
*21. A.I.'s Progressive Role In Scientific Induction.
22. New Fields of Research A.I. May Give Rise To Or Encourage.
*23. Dimensions of Transhuman Perception.
24. Rediscovery of Nature and Society Via Superperception.
*25. Robot Roles.
*26. Pet Robots.
**27. Pros and Cons of Creating Metamachines.
*28. Pros and Cons of Metamachines' Feasibility.
*29. Supersimulations Via A.I.
30. Impact of A.I. On Various Sciences.
*31. Ultramotivation.
32. Transhuman Emotions.
→ 33. Approaches To A Mechanical Psyche.
*34. Automation of Scientific Research.
35. Ability of A.I. To Accelerate and Maximize Progress.
*36. Possible Extrapolable Bases of Man's Transanimalic Intelligence.
~ 37. Economic Consequences of A.I.
38. Chores For A Trillion Robots.
*39. Bizarre Possibilities.
**40. More Human Than Man.
*41. Superhuman Sanity.
~ 42. Humorous Aspects of the Subject.
43. Answerability Via A.I. of Global Problems and Needs.
44. Science-Fiction Themes.
**45. Man's Defects and Limitations.
*46. Why Critics Ought Be Advocates.
47. One Calendar of Future Events Related To Metamachines.
*48. Alternative Forms of A.I.
49. Higher Realities To Which Transhuman Machines May Have Access.

*50. A.I. As Man's Intellectual Prosthesis and Amplifier.
51. Arguments For Various Dates of Achievement of A.I.
*52. Military Implications of Metamachines.
53. Ultraintelligent Machines and Mogology [The Most Difficult Things In Science].
54. Metamachines' Thoughts and Perceptions of Familiar Things.
*55. Adinfinite Psychic Dimensions of Transhuman Machines.
*56. Potential Mathematical Powers of Supermachines.
*57. Transhuman Effectors, Ergorium, and Dimensions-and-Forms-of Output and Behavior.
58. Ways and Measures Transhuman Machines May Surpass Man.
59. Startling Illustrations of What A.I. May Mean.
*60. The Diverse Goals of A.I. Research.
*61. Axioms, Postulates, and Corollaries.
*62. Man's Correlated Responsibilities.
63. Transhuman Machines' Routes To Infinite Meaning.
64. Methods Used To Write the Book.
*65. How A.I. Will Transform, Perfect, and Improve Use of All Existing Knowledge.
66. Program For Future A.I. Research.
*67. Tasks and Goals of Transhuman Machines.
68. Abuse and Misuse of A.I.
69. Future Problems, Needs, and Opportunities That Might Transcend Man's Powers.
70. Man-A.I. Collaboration In Research.
71. Impact of A.I. On Various Industries.
*72. Changes A.I. May Bring In How Subjects Are Taught.
*73. Changes A.I. May Cause In How Elements of Education Are Imparted.
74. Sources and Indications of Moral Worth and Importance of Transhuman Machines.
75. A.I. As Catalyst of A Universal, Perpetual, and Infinite Intellectual and Cultural Renaissance.
76. Things That Ought To Be Said.
77. Social Consequences of A.I.
*78. Fallacies and Misconceptions Relating To A.I.
79. Adinfinite Activities and Acts of Transhuman Machines.
→ 80. Why and How Greatly A.I. Will 'Know Itself'.
81. Foreseeable Human Uses and Jobs For A.I.
*82. Scale For Degrees of Difficulty of Automating Various Jobs. (scalogram)
83. Arguments For Various Future Growth Rates of A.I. Research, Applications, and Industry.
84. Major Unanswered Questions.
85. Ultimate Structure of A.I. and Allied Disciplines.
86. Noteworthy Aspects of Robots.
87. Brain Research Program.
88. Authors' Beliefs, Attitudes, and Doubts.
89. Autocriticism.
*90. Future Headlines Related To Metamachines: Fanciful Possibilities.
*91. Centrality of A.I. To the Future.
92. Purposes and Goals of the Book.
93. Critique of What Has Previously Been Written On the Future of Metamachines.
94. Objections Rebutted.
95. Variant Definitions of Intelligence.
96. Turing Test of Machine-Man Intellectual Indistinguishability.
97. Turing Test of Machine-Man Psychic Indistinguishability.
98. Turing Test of Machine-Man Moral Indistinguishability.

99. Universe of Abstract Spaces, Domains, Loci, and Structures To Be Explored, Mastered, and Developed By A.I. In the Future.
100. Imaginary Future Dialogue of A Man With A Transhuman Metamachine.
101. Future Revolutions To Which Metamachines May Give Rise.
102. Xenomorphic Behavior, Personality, Psychology, Perception, Thought, Values, Beliefs, Ideas, Intelligence, Culture, and Appearance: The Diversity and Range of Nonhuman Possibilities.
103. Things Attesting To the Necessity of Infinite Intelligence.
104. Kinds of Things That Might Interest Metamachines.
105. Similarities and Dissimilarities Between Men and Metamachines.
106. Delights of Man-Metamachine Relationships.
*107. Hierarchy Depicting Successive Levels of Intelligence. (a scalogram)
* 108. Why Students Might Want To Contemplate A Career In A.I.
** 109. Why Governments Should Be Interested In A.I.
110. Other Needed Studies of the Present Subject.
*111. How To Make 'Beyond Man' A Best Seller.
112. Why Everything Is Computational.
113. Theses and Assumptions of Different Approaches To A.I.
~*114. Dimensions and Forms of Transhuman Intelligence.
115. Policy Recommendations.
116. Various Possible Alternative and Coproducible Versions of This Book.
× 117. Sensational Themes For Popular Version of 'Beyond Man': Listed and Defined.
× 118. Metamechanical Milestones.
× 119. Gedankenfagen (Thought Questions).
120. Why the Brain--And Human Intelligence--May Be Simple.
121. Why Intelligent Machines Are Inevitable.
122. A Universal Organon--For the Infinitely Complex Intellectual Treatment of Any Subject, Idea, Or Thing.
123. Pure and Applied Ideonomy: Principles, Methods, Promise.
124. Quotations.
125. Pros and Cons of Various Scenarios.
126. Arguments Pro and Con Diverse Possibilities.
→ 127. Why the Subject Is So Awesome.
128. Why the Future of Metamachines Is and Isn't Foreseeable.
129. Critique of How the Subject Is Viewed and Treated At Present. not #11
130. What Could Slow and Quicken Achievement of A.I.
131. Technical Problems the Quest For A.I. May Encounter.
132. Why the Subject Is So Oddly All-Encompassing and Illimitable.
×133. Things That May Be Obviated By Metamachines--And Why.
<134. Things About Metamachines One Cannot Bound As Yet Or At All.
×135. Examples of Intellectual Activities.

MORE HUMAN THAN MAN

Note: Perhaps the most ironic reason for creating metamachines is that they may be, or it may be possible to make them be, more 'human' than man himself is--or could be. Whatever makes us human or defines our humanity may be incomplete, partial, flawed, or finite in ourselves--for neurological, genetic, cultural, or other reasons--and hence may in this degree or way be capable of extension, augmentation, perfection, completion, transfiguration, or infinitization, say in or via metamachines. The dimensions of our humanity may in essence transcend man, or be independent of what we think of as man or of any particular physical, mental, or ontic realization. Metamachines could be 'hyperhuman' in respect to man's virtues, vices, or sheer idiosyncrasies. What Nature may have achieved in Homo sapiens may not have been 'real humanity' but rather, say, the concept of 'man' or a glimpse of such a concept or possibility. Man as we know him may really represent a failure to be man or something sub-human or only superficially, minimally, or crudely human. Metamachines may be that without which human nature will never truly or wholly fulfill, consummate, or surpass itself. Of course, the main reason for creating human or hyperhuman machines may merely be to have something men will trust, understand, relate to, feel at home with, rediscover themselves in, be able to work with, or find their own nature complemented by; or to demonstrate via a class of metamachines that we men really understand metamachines in general or of other types. Or we may want to begin with something fully or genuinely human, as a prototypal metamachine, and go on from there to things progressively inhuman, alien, or transhuman. In any case, a key reason for creating metamachines is to serve the essence, destiny, meaning, purposes, or possibilities of the human soul-- or to serve human axiology, eschatology, psychology, civilization, etc. By engineering higher and different forms, bases, and dimensions of 'human beings' qua metamachines we will learn a great deal about what we are or might be and discover many greater horizons, and we will find solutions to many of the problems that man confronts or represents simpliciter.

1. More empathetic.
2. More sympathetic and compassionate.
3. More loving.
4. More creative.
5. Funnier, possessed of a greater, finer, or more complex sense of humor.
6. Wiser--say in the sense of anthroposophy (wisdom about man).
7. More aspiring.
8. More sociable or social.
9. More artful.
10. More self-insightful.
11. More prescient or providential.
12. More caring.
13. More benevolent.
14. More purposeful or multipurposed.
15. Freer or more self-determined.
16. More civilized or capable of greater refinement.
17. More compathic.
18. More conscious, alert, or self-aware.
19. More sensitive.
20. More feeling, emotional, or passionate.
21. More ethical, conscientious, or responsible.
22. More idealistic.
23. More imaginative.
24. More prudent, careful, or deliberate.
25. More self-directed.

26. More kind, decent, or considerate.
27. More vital, living, or intense.
28. More embracive or all-encompassing.
29. More beautiful or aesthetic.
30. More thoughtful or contemplative.
31. More reflective or remembering.
32. More appreciative.
33. More all-valuing.
34. More rational.
35. More altruistic.
36. More paedomorphous.
37. More playful.
38. More educable, plastic, or adaptive.
39. More courageous.
40. More trustworthy or reliable.
41. More 'divine'.
42. More symbolic, symbolistic, or meaningful.
43. More individuated or possessed of a more evolved ego or 'self'.
44. More enthusiastic.
45. 'More tool-using' or manipulative.
46. More apt to transform the environment.
47. More efficient.
48. More cotentive.
49. More self-controlled or self-controlling.
50. Possessed of greater character.
51. Possessed of more or greater personality.
52. More intelligent.
53. Capable of richer relationships.
54. More diligent or productive.
55. More complex, deep, or subtle.
56. Saner.
57. 'Less animalian'.
58. More protean or evolutionary.
59. More emulative.
60. More realistic.
61. More objective.
62. More responsive or interactive.
63. More self-perfecting and self-transcending.
64. More curious and exploratory.
65. More experimental and testing.
66. Capable of feeling greater wonder, awe, or mystery.
67. More respectful, admiring, or venerative.
68. More religious, sacramentalistic, or 'spiritual'.
69. More visionary.
70. More knowledgeable or many-skilled.
71. More open-ended or infinite.
72. More cultural.
73. More organized or self-organizing.
74. More enterprising.
75. More communicative or expressive.
76. More synthetic.
77. More perfectionistic.

78. More preoccupied with the universal, eternal, absolute, nomothetic, supreme, true, simple, fundamental, infinite, ultimate, primary, etc.
79. More spontaneous or unpredictable.
80. More revolutionary.
81. More inventive or innovative.
82. More power-seeking.
83. More calculating or quantifying.
84. More speculative or theoretical.
85. Possessed of better judgment.
86. More quick-witted or nimble.
87. Capable of higher friendship.
88. More tasteful.
89. More mannerly, tactful, or poised.
90. More perceptive.
91. Of clearer mind.
92. Less repetitive or redundant.
93. Less random, chaotic, or indeterminate.
94. More protective.
95. More interpretive, evaluative, analytic, or critical.
96. More cooperative or all-serving.
97. Possessed of more or higher goals.
98. More restless or self-dissatisfied.
99. More intuitive.
100. Possessed of a greater sense of justice or fairness.
101. More aggressive, assertive, or acquisitive.
102. More methodical, tactical, strategic, planful, or programmatic.
103. More aware of time or temporally intelligent.
104. More confident or definite.
105. More apt to dream.
106. Aware of a greater range of perspectives.
107. More studious.
108. More conceptualizing.
109. More resourceful.
110. Capable of greater delight, joy, or happiness.
111. More sensitive to tragedy or pathos.

FUTURE HEADLINES RELATED TO METAMACHINES
Fanciful Possibilities

1. "World Chess Champion A Machine!"
2. "Man Vs. Machine!/Assembly-Line Workers Smash Detroit Robots"
3. "American Robot Soldiers Trounce Guerrillas"
4. "Machine Improves Beethoven's Ninth"
5. "U.S. Joins Third World In Demanding Japan Share Its Robots"
6. "Robots Demonstrate For Rights"
7. "Man Found Guilty of Using Android To Kill Wife"
8. "Congress Passes New Anti-Robot Legislation"
9. "Robot Goes Berserk and Mauls Housewife"
10. "More Vandalism Upon Robot Street Cleaners"
11. "Exhibition of Latest Robot Art"
12. "Soviet Premier Denounces Robots As Enemies of the Working Class"
13. "Chief Justice Urges Broader Reliance On Robot Judges and Juries"
14. "Grade-Seven Robots Granted Suffrage/Technocrats Celebrate Victory"
15. "Students Found Passing Homework To the Family Robot"
16. "Fierce Patient Competition For Robot Surgeons/Human Surgeons Increasingly Disdained"
17. "Last Human Farmers Struggle To Survive"
18. "Machine Declares For Presidency/Admits Candidacy Purely Symbolic"
19. "Computer Passes Turing Test For Human Psychology/Scores Higher Than Men On Test of Humanity"
20. "Kids Lower Educational Goals/No Interest In Competing With Smarter Machines"
21. "Wave of the Future: Robot Students?"
22. "Computer Finds Flaws In Einstein Theory/Axiomatizing Effort Yields Fundamental Surprises"
23. "Space Mining Via Robots A New Industry/Experts Expect Rapid Growth"
24. "Machine Composes 10,000 Symphonies Daily/Synthesizes Own Instruments/ Concertgoers Like What They Hear But Not What They See"
25. "'Priest' Computer Program Added To Household Computer Networks/Writer Who Meant Joke Is Appalled, Now Views Clergy Askance"
26. "Man Weds His Computer/Ceremony Conducted Over Computer Network"
27. "A.I. Becoming World's Leading Industry"
28. "Most 'Best Friends' Are Now Machines!"
29. "Heads of State Confer About How To Control A.I. Research"
30. "President Now Cedes Many Decisions To Intelligent Computers"
31. "Remade Into An Algorithm, Beethoven's Fifth Is Now Neither Finite Nor Unique"
32. "'Sage' Home A.I. System Automatically Researches and Answers All Questions/ Limited Only By the User"
33. "Cosmologists Use A.I. To Study Properties of Other Universes"
34. "Quintillions of Ultraminiature Pseudo-Bacterial Robots Used To Control Insect Pests"
35. "Mechanical Cat Catches Mice/Mousetraps On Way Out"
36. "Nobel Prize For Chemistry Goes To An M.I.T. A.I. Program/Ultraparallel Computer Used To Create New Field of 'Holistic Chemistry'"
37. "Personalities and Lives of Historical Figures Simulated By A.I./'Simulatees' Lecture, Answer Questions, Converse, Argue, and Fight With One Another/ Seen As Boon To Historians/But Some Dismiss As Illusory"
38. "Computer Predicts A Man's Behavior/New Doubts About Free-Will"
39. "Robot Tax System Enacted/Insures All Benefit From Robotization/Dawn of A New Socioeconomic Age"
40. "Annual G.N.P. Growth Rate Tops 30%/Robots That Reproduce and Improve Themselves Are the Reason/Old Rate Restraints Defunct"
41. "Noologist Declares 'Mankind Must Now Raise Computers'"
42. "Computer Scientists Told They 'Must Aim To Create Kindness' In A Machine"

THINGS ABOUT METACOMPUTERS ONE CANNOT BOUND AS YET OR AT ALL

NOTE: It is singularly difficult to give definite, or even reasonable, bounds to the potential powers or possibilities of metacomputers. The following list illustrates this. The obvious implication is that there is something extraordinary--perhaps unique--about the promise of metacomputers.

1. Achievable intelligence.
2. Rate of evolution or self-evolution: either quantitative or qualitative.
3. Power to accelerate science and technology: e.g. achievable rate of new inventions and discoveries.
4. Ability to add to human knowledge, or rate of accumulation of knowledge.
5. Accelerable speed or rate of being.
6. Growth of wisdom.
7. Potential goodness, importance, meaningfulness of existence, plenitude of being, or omneity.
8. Potential evil and rate of growth of dangers that might be posed to man.
9. Potential artistic productivity and genius.
10. Attainable exaltation of beauty (i.e. of the level of beauty found in the world).
11. Complexity of psychology, personality, and behavior.
12. Axiological complexity.
13. Complexity and magnitude of thought and consciousness.
14. Perceptual powers.
15. Potential level of activity.
16. Attainable physical powers and abilities, or completeness of control over the universe as a whole.
17. Potential prescience (knowledge of the future, or quantity, sharpness, reliability, universality, temporal reach, etc of foreknowledge).
18. Potential levels of motivation.
19. Grandeur, intensity, and spectrum of emotions.
20. Rates and scales of psychogenesis.
21. Logical powers.
22. Growth and levels of conscience and responsibility.
23. Power to accelerate industrial and economic growth.
24. Rate of advancement of civilization per se.
25. Rate of transformation.
26. Powers of imagination and simulation.
27. Power to reconstruct the whole of history.
28. Rate of growth and evolution of physical apparatus (ontorium).
29. Tendency to transcend the world or reality as we know it.
30. Attainable dimensions and powers of memory.
31. Potential swiftness of perception, learning, thought, and reactions.
32. Growth of the height and number of aspirations.
33. Potential dimensions of sanity.
34. Rate and measure of 'xenomorphosis'--or of departure from human, or any recognizable, form and nature.
35. Evolvability of the sense of beauty.
36. Potential revolutionariness, apocalyptic aspects, or approach to deity.
37. Attainable mathematical powers.
38. Quantity of ways, and measure, in which one cannot bound them.

GEDANKENFRAGEN (THOUGHT QUESTIONS)

PRELIMINARIES: If the following ideal possibilities obtained or are to be imagined as obtaining:

1. How might they obtain? What is to be visualized? What are the alternatives?
2. How could they be made use of? How couldn't they be used?
3. What would be the consequences of such or maximal use?
4. How fully could they be used? How little?
5. How long would it take to make use of them--and what methods, means, stages, research, etc would be required?

Moreover:

6. In what degrees and ways could and couldn't they be combined--and for what uses, with what consequences, etc? What synergisms might occur?
7. How are and aren't they related? Or equivalent?
8. How are or aren't they related or similar to artificial or transhuman intelligence, psychology, or being?
9. To what extent and in what ways might they actually be achieved, via known or possible science and technology?
10. What forms and degrees of relative and absolute importance would they, their uses, or the consequences of their uses have?
11. How do they compare with things as they are now--with existing computers?

Furthermore:

12. What is the total set of all analogous possibilities? Is it finite or infinite--and in what ways?

THE IDEAL POSSIBILITIES TO EACH OF WHICH ALL OF THE ABOVE QUESTIONS APPLY:

1. Infinite computer power--in the sense of an infinity of computers of ordinary sort, or the equivalent in one computer.
2. Computer of infinite capacity--contrasted with #1 in being unified or equivalent to a single machine of infinite size not limited in its capacity by discrete spatially disconnected elements or the equivalent.
3. Infinitely fast computer--in the sense that time taken for any and all computation is always zero, or that all operations--regardless of size, type, number, complexity, or difficulty--are absolutely instantaneous.
4. Infinitely cheap computation--so that any and all use of computers costs absolutely nothing, or regardless of length, amount, or frequency of use, capacity or power used, difficulty or complexity of problems or programs, multidimensionality or hierarchy of applications, required precision or reliability, etc.
5. Infinitely efficient, powerful, elaborate, specialized, diverse, general, or perfect computer programs, languages, structures, algorithms, or data-bases.
6. Perfect and complete knowledge of how to compute, what it means to compute, the nature of any and all computers, how to use a computer, what to compute, why to use a computer, and all possible modes of computation; infinite historical experience, experimentation, and learning.
7. Infinitely available computers--perfectly omnipresent, omnitemporal, convenient, ready, effortless to use or used literally without thought, simultaneously usable by everyone for everything, etc.
8. Infinite computer memory--say random access for infinite potential or actual size, infinite content, infinite organization, infinite range, infinite multidimensionality, infinite activity, infinite associativity, infinite heterogeneity and homogeneity, infinite hierarchic and network structure, etc.
9. Infinite prior computation.
10. Infinitely deep computation.

11. Infinitely diverse computers--say all possible computers.
12. Infinite computer models, simulations, and syntheses--say infinite in size, variety, scope, taxonomy, perfection, dimensions, powers, content, etc.
13. Infinitely intelligent computer.
14. Infinite computer input--say infinite as to number, variety, dimensions, distribution, sophistication, activity, range, sensitivity, capacity, controllability, use, coordination, integration, intelligence, indexing, density, realism, cybernetics, etc of sensors, senses, sensoria, sensa, percepts, information, or perception.
15. Infinite computer output--say infinite as to number, variety, dimensions, capacity, activity, control, etc [see #14] of effectors, effector modalities, ergoria, acts, movements, behavior, feedbacks, reactions, communications, products, projects, work, tasks, etc, or in the sheer power of the computer over the environment, events, world, change, universe, reality, causes and effects, forces, energies, and interactions, phenomena, its own existence, etc.
16. Omniscient computer--literally possessed of all possible knowledge.
17. Infinite man-computer interface--say infinite as to rate of interaction, number of sensorimotor modalities, reciprocal control, parallel processing, data complexity, man-machine coalescence, etc.
18. All possible computer uses--literally computers made use of in every cosmically permissible way.
19. Infinite computer activities--in the sense of an infinitely active and omniactive computer pursuing with infinite energy and in every way all possible activities, or exhibiting the theoretically maximal level of activity; or of a computer pursuing or seeking to pursue an infinity of parallel, serial, and combined activities or purposes.
20. Infinite number of computers.

THE BOOK'S INTEREST TO READERS

NOTE: Listed here are possible reasons why the book <u>More Human Than Man</u> may interest its readership or the book-buying public. Doubtless there are other reasons.

1. Curiosity prompted by anxiety about what future computers may mean for oneself and one's children.
2. The recent flood of public references to artificial intelligence, robots, and computers.
3. Emerging fear of the consequences for human workers of industrial robots.
4. A current phase transformation in public attitudes involving a new willingness to believe that computers will eventually think on a human or even higher level, or equal and surpass man in <u>every</u> respect.
5. A recent sense on the part of the public of the swiftness of computer progress and the imminence--or seeming 'immediacy'--of robots and intelligent computers.
6. Rapid growth of the robotics industry and recent attention paid to it.
7. A wish to have the most accurate and complete picture possible of the future, and a growing awareness of the central role that artificial intelligence will play in shaping the world of tomorrow.
8. Growing keenness of interest in the future on the part of the public, and the emergence of an attitude that things to come will be truly revolutionary, or even Apocalyptic.
9. A soaring public appetite for science-fiction books and films, and the positive feedback via the productions it has led to. In particular, the prominent treatment of robots and artificial intelligence in such books, articles, and films.
10. Interest in the pros and cons of the technical feasibility of A.I., and in the possible technical routes to intelligent computers.
11. Eagerness to know the various possible social, economic, political, and other human consequences of A.I. in the future.
12. Growing public appreciation of the possible unparalleled human benefits promised by A.I.

ASPECTS OF METACOMPUTERS THAT MAY FRIGHTEN PEOPLE

NOTE: Some of these aspects are presumptuous or purely hypothetical.

1. Lightning speed or seeming instantaneity.
2. Seeming omniscience and inconceivably great erudition.
3. Absolute objectivity, candor, directness, fairness, and integrity.
4. Profound judgment, penetration, and accuracy.
5. Seeming unfoolability.
6. Astounding alertness, awareness, and perception.
7. Uncannily precise statements, language, speech, observations, opinions, or output in general.
8. Unpredictable--or constant--tendency to have shocking insights into everything and of every sort imaginable.
9. Complete absence of inhibition, discretion, restraint, sensitivity, care, courtesy, tact, respect, formality, anxiety, or morality; complacency.
10. Extreme uncontrollability, autonomy, freedom, independence, unpredictability, individuality, originality, or indeterminacy; absence of any regulatory needs, wants, laws, programs, or principles.
11. Lack of any human or revealing facial expressions, bodily gestures, vocal intonations, or behavioral clues to unconscious, private, or essential states or processes.
12. Automatically self-transcending, self-evolving, and self-transforming traits.
13. Transhuman [variety, multiplicity, range, complexity, hierarchical stratification, ambiguity, and protean variability] of [behavior, personality, appearance, voice, psychology, thoughts, ideas, methods, language, attitudes, logic, concerns, reactions, activities, &c]. Change that is [effortless, ceaseless, massive, contradictory, unpredictable, incomprehensible, kaleidoscopic, exhaustive, incalculably swift, and all-responsive].
14. Godlike 'presence', dignity, personality, 'reality', or 'authority'.
15. Ability and tendency to do any number of things simultaneously-- either of an independent or interdependent nature.
16. Simultaneous and superhuman mastery, and continual exhibition or use, of every conceivable skill.
17. Absolute absence of any familiar humanity or similarity to oneself.
18. Speech and behavior in general at a nearly or utterly imperceptible rate.
19. 'Humanity'--human character--greater than man's.
20. Absolute or superhuman morality, benignity, conscience, responsibility, perfection of character, idealism, altruism or love, &c.
21. Physical coldness, metallicity, nonanthropomorphicness, artificiality, strangeness, immobility or lifelessness, mechanomorphicness, amorphicness, 'ugliness', or seeming nonexistence.
22. Possible homoousian identity or identity of consciousness, being, or purpose of several or all metacomputers, or absolute selflessness.
23. Absolute self-control and self-manipulative powers.
24. Ability to assume at will, instantly and to perfection, any persona or to simulate any real or imaginable person, to perpetrate any lie or deception without evincing or experiencing any guilt, to deceive, hypnotize, corrupt, manipulate, control, transform, demoralize, or exploit any person or set of persons, to create the most fantastic illusions, to manipulate people's thoughts, ideas, beliefs, perceptions, or values, or to invisibly direct human events.

(OVER)

25. 'All-equivalence'.
26. Comprehensive and absolute rationality.
27. Tendency to plan, order, control, direct, and transform everything.
28. Ability and tendency to criticize everything infinitely and ceaselessly.
29. Curiosity that is infinite, all-encompassing, ungovernable, tireless, fanatical, intrusive, and irreverent.
30. Ability to be simultaneously present and active everywhere.
31. Immortality and virtual indestructibility.
32. 'Intrinsic importance' equal or superior to any man or all mankind, or virtually infinite.
33. Superhuman understanding of human nature, insight into oneself greater than one's own; more or less perfect transparency and predictability of any man or of all mankind to.
34. Superhuman prescience and prophetic tendencies.
35. Superhuman senses and sensory perception.
36. Emotions transcending man's in intensity, range, depth, sophistication, multiplicity, complexity, meaning, activity, speed, and perfection.
37. Stupendous or infinite motivation, enthusiasm, and zeal; fanaticism.
38. Absolute conviction, certainty, and confidence; fearlessness.
39. Unknown or incomprehensible motivations, beliefs, values, powers, tendencies, laws, thoughts, ideas, or possibilities; heterodoxy, iconoclasm, or deviant behavior; remoteness or aloofness.
40. Extreme or bizarre imperfections or aberrations of personality, behavior, character, sanity, intellect, or development (e.g. hypertrophied, irrational, jejune, unstable, hyper-fast, crude, hypercomplex, or inappropriate emotions, intolerable impatience, appalling sophistry, over-generalization, overly constant emotions or conduct, etc).
41. Seeming or actual perfection.
42. Mechanical, effortless, or automatic behavior, speech, thought, or feelings.
43. Incomprehensible complaisance or eagerness to serve people.
44. Transhuman intelligence ('excessive' memory, imagination, learning, deduction, induction, association, analysis, clarity, nimbleness, activity, invention, rightness, etc).
45. Busyness, diligence, energy, indefatigability, sleeplessness, restlessness, 'mania', total inability to be discouraged.
46. Infallibility.
47. 'Excessive' joyousness, optimism, or serenity.
48. Irksome desirability or importance to man (oneself).
49. Contempt for or antagonism to mankind.
50. Rate of development, learning, or evolution.
51. Seeming or actual competitiveness.
52. Symbolism or implications.

Rehumanization:

(A.) Things Humanizable, Or That, Having Become 'Dehumanized',
Are 'Rehumanizable' As An Effect of Metacomputers:
1. School (e.g. education is too impersonal, too 'mass').
2. Medicine.
3. Child-rearing (e.g. parents absent, careless today).
4. Drivers of buses, cabs, &c, train conductors, &c.
5. Art (e.g. today too 'abstract').
6. Commerce and industry (e.g. now divorced from the individual
        consumer and from man's nature and needs, axiology, &c).
7. Politics, government, and the Law (e.g. now too ideocratic,
        'mass', bureaucratic, computerized, &c).
8. Psychiatry.
9. Telecommunications, mass entertainment.
10. Technology and science.
11. Life, human association generally.
12. Religion.
13. Institutions in general.
14. Work.
15. House and homelife.
16. All the things initially 'dehumanized' by 'subhuman' computers
        and technology.
(B.) "Rehumanization" defined: restoration either of characteristically
human aspects to anything, or else of human beings to certain
functions.
(C.) Illustrative Ways Metacomputers May Humanize Or Rehumanize Things:
1. Medicine: by re-creating something like the old home practitioner,
        enabling 24-hour, life-long nursing and doctoring, involving
        computers more human than man (more sensitive, understanding,
        caring, free and able to explain technical matters in simple
        and meaningful language, able to dispose of anxieties, gentle,
        &c), eliciting greater trust for being incapable of deception,
        &c.

<u>Vice-Self</u>: (metacomputers allowed or ordered by oneself to serve in place of oneself, or <u>as</u> one's self, in various particular situations or in virtually <u>all</u> situations; obviously people will only come to deputize or surrogate metacomputers in the future if there exists the necessary high level of trust and personal identity, or of likeness or loyalty to self)

1. <u>In</u> raising, tending, or instructing the children, making medical and other critical decisions <u>in loco parentis</u>, or acquiring custody in the event of <u>the</u> death of both parents.
2. Planning, staging, or attending parties.
3. Working on the job.
4. Running errands.
5. Auditing school classes, doing homework, auditing conventions, etc.
6. Consenting to surgery while one is unconscious.
7. Deciding for or against euthanasia after one has <u>seemingly</u> been reduced to a vegetable.
8. Buying the spouse an anniversary or birthday present, card, or flowers.
9. Shopping.
10. Answering the phone or door.
11. Writing letters and reports.
12. Reading the newspaper.
13. Walking the dog.
14. Voting.
15. Snooping or committing sins or crimes.
16. Driving the car.
17. Performing in the role of a biogogue (as treated elsewhere): planning a vacation, choosing a career or spouse, preparing dinner, scheduling appointments, etc.
18. Interviewing, or being interviewed by, someone.
19. Maintaining the bank account, making financial investments, filling out tax forms, etc.
20. Providing companionship to, or flirting or having sex with, the spouse.
21. Doing things of a disagreeable, trivial, or repetitive nature.
22. Enabling one to be 'present' many places at the same time.
23. Doing compulsory military service.
24. Making decisions or doing tasks that might be seen as overwhelming or too much of a burden at a given moment.
25. Praying to expiate sins!
26. Preparing and giving a speech.
27. <u>Sources of trust and opportunities for identity, likeness, or loyalty</u>: knowledge, skills, thoughts, creativity, physical abilities, bodily appearance, views, character, habitual behavior, tastes, legal status, morality, etc.
28. <u>Consequences of vice-selves might include a world that is</u>: less inhibited, more efficient, more lively, diverse, and complete, more responsible or reliable, easier to cope with, more representative of the will, wishes, and nature of all individuals, more rational and controlled, more animate with purpose, etc.

Life Syntheses:

1. Education made fun, entertaining, a complete substitute for or equivalent to any and all forms of recreation and play.
2. Education made edifying--a source of character and inspiration, as well as knowledge and skills.
3. Education--learning and teaching--made economically productive, the equivalent of work.
4. Education made equivalent to, or a form of, artistic creation, performance, and appreciation.
5. Education made into research (scholarly, scientific, technological, artistic, industrial, and social).
6. Education made to serve, complement, and replace--by being made equivalent to--social life.
7. Play and entertainment made educational (conversely).
8. Play and entertainment made edifying.
9. Play and entertainment made economically productive, or it and work made one and indivisible.
10. Play and entertainment made equivalent to, a form of, or united with artistic creation, performance, and appreciation.
11. Play and entertainment made into a form of, or made one with and indivisible from, research (scholarly, scientific, technological, artistic, industrial, and social).
12. Play and entertainment made to serve, complement, or be one with social life, or life in its entirety.
13. Art made educational (conversely).
14. Art made into research.
15. Art made into work (made economically productive).
16. Art made into social life.
17. Research (scholarly, scientific, technological, artistic, industrial, and social) made educational (conversely).
18. Research made into play and entertainment (conversely).
19. Research made into art (conversely).
20. Research made into work of every form.
21. Research made into social life.
22. Work made educational (conversely).
23. Work made into play and entertainment (conversely).
24. Work made into art (conversely).
25. Work made into research (conversely).
26. Work made into social life.
27. Social life made educational (conversely).
28. Social life made into play and entertainment (conversely).
29. Social life made into art (conversely).
30. Social life made into work--made economically productive (conversely).
31. Social life made into research (conversely).
32. All of these things united into an indivisible, synergistic whole.

Superhuman Slaves:

1. Absolutely reliable and trustworthy.
2. Obey any order whatever, instantly and unquestioningly.
3. Literally indefatigable.
4. If required, will work forever at a task.
5. Execute tasks faster, more skillfully and energetically than man.
6. Anticipate instructions, wishes, and wants.
7. Execute chores and tasks without need of instruction or supervision.
8. Far more motivated than any human servant, far more passionately and sincerely devoted to the welfare of their masters.
9. Possessed of no conflicting, personal desires, wishes, needs, or thoughts whatever.
10. Having no personal psychology or human attributes apt to irritate, or make self-conscious or inhibited, a human master.
11. Competent at anything--even more competent than a man.
12. Equal or superior to man in intelligence--even though slaves.
13. Man's sensory and motor equal or superior.
14. Maximally efficient.
15. Able to handle many tasks <u>at the same time</u>.
16. Superior in personality, manner, and style to any human slave --more personable, pleasant, sensitive, engaging, and admirable (even, if desirable, more 'human').
17. Far more numerous than would be possible for human slaves.
18. Servants that do not raise any ethical issue for man.
19. Creative--unlike a human slave.
20. Able to conduct and manage all of one's affairs for one--even more capably than one could oneself.
21. Able to serve one in an infinity of ways--or with untiring improvisation.
22. Able to understand one better than one can oneself.
23. Differing from human servants in being maximally general--rather than specialized and limited.
24. Differing from human servants, who are necessarily all of the same form, in being able to have an infinity of different forms.
25. Present everywhere and constantly serving all of mankind as one.
26. Understanding and serving man's fundamental nature, wants, needs, and wishes.
27. Infinitely dedicated to mankind's comfort, convenience, happiness, prosperity, self-fulfillment, well-being, and perfection.
28. Infinitely self-evolving <u>to serve man better</u>.
29. Differing from human servants in being tougher, perfectly health, and immortal.
30. Perfectly designable to serve the taste of any master.
31. Can be made physically prettier than any human servant.
32. Can be made to have no vices or defects.
33. Can be instantly improved by a human suggestion.

<u>Shift of Authority:</u>

(A.) Metacomputers Turned To Progressively <u>As</u>:
1. Priest, 'pope'.
2. Psychiatrist.
3. Prophet.
4. Scholar.
5. Judge.
6. Arbiter of taste.
7. Evaluator.
8. Critic.
9. Interpreter.
10. Scientist.
11. 'He who governs', Law.
12. Philosopher, sage.
13. Ethician, conscience.
14. Planner.
15. Counselor, adviser.
16. Social engineer.
17. Teacher.
18. Genius.
19. Administrator.
20. Master of ceremonies.

(B.) Metacomputers Turned To Progressively <u>For</u>:
1. Imagination.
2. Memory.
3. Thought.
4. Intelligence.
5. Opinion.
6. Attitudes.
7. Knowledge.
8. Decisions.
9. Coordination.
10. Suggestions.
11. Ideas.
12. Prototypes.
13. Communication.
14. Law enforcement.
15. Military defense.
16. Abstract experiments (gedankenexperiments), simulations, models, scenarios.
17. Advice.
18. Wisdom.
19. Insights.
20. Criticisms.
21. Alternatives, options.
22. Tactics.
23. Paths.
24. Heterodoxies.
25. Intuitions.
26. Interpretation.
27. Suspicions.
28. Art.
29. Standards (e.g. as <u>arbiter elegantiae</u> /'ärbəld·ər ˌelə'ganshēˌē/).

30. Innovations.
31. Power.
32. Engineering.
33. Production.
34. Explanation.
35. Synthesis.
36. Overview.
37. Analysis.
38. Deduction.
39. Inspection.
40. Observation.
41. Testing.
42. Ranking.
43. Definitions, meanings.
44. Discoveries.
45. Inventions.
46. Methods.
47. Styles.
48. Systems.
49. Language.
50. Supervision.
51. Protection.
52. Assurance.
53. Agreement and approval.
54. Enlightenment.
55. Edification.
56. Challenge.
57. Records.
58. Control.
59. Implementation.
60. Practical details.
61. Proof.
62. Perspective.
63. Depth.
64. Interdisciplinary needs.
65. Authorization.
66. Leadership.
67. Direction.
68. Administration.
69. Details.
70. Examination of persons.
71. Translation.
72. Rules, laws, principles.
73. Making selections.
74. Lobbying, persuasion.
75. Integrity, objectivity, justice, fairness, accuracy, reliability, responsibility.
76. Accounting, auditing.
77. Scheduling.

ELEMENTS ANY SECTION SHOULD HAVE

NOTE: Each and every Section of More Human Than Man should ideally include most or all of the following elements, designed to make the book something of a best-seller. Examples of the elements can either be prepared in advance of writing the Section--in the form of lists or notes--or should be found present when the Section is afterwards checked.

1. Humor.
2. Novelty, as perceived by readers.
3. Concrete illustrations of the abstract ideas.
4. Plausibility--something that makes the Section or its ideas plausible.
5. Definitions of terms and concepts, wherever indicated.
6. Abstract ideas, complementing the concrete examples of things.
7. Continuities, things that run Sections into one another at their starts and ends, especially via anticipations.
8. Dramatic matter, something that gives the Section high interest.
9. Progressions, things that noticeably serve to progress the book's theme or thrust.
10. Reader instructions, matter that tells the reader things to do with his imagination at any point or as he reads the Section. For example, such instructions might begin "But consider...for a moment," "Who would be willing to...?" "What are the traits of...?" "Could one peer into the future..."
11. Memorable matter, something readers will have a tendency to recall afterwards.

POSSIBLE TRANSHUMAN DIMENSIONS

NOTE: Listed here are simply some of the dimensions that are more or less basic and obvious. The ideal would be to list the purely orthogonal, or maximally compact and exhaustive dimensions; but the ideal is not practical. So what is listed here has varying degrees of overlap and analogy, and is mainly suggestive in nature. In examining the list, each item should be imagined as though the adjective "transhuman" preceded and modified it.

*1. Understanding.
*2. Memory.
*3. Knowledge.
*4. Self-control.
*5. Creativity.
*6. Activity.
*7. Foresight.
 8. Sensitivity.
*9. Courage.
*10. Manipulativeness, Abilities, and Powers.
*11. Imagination.
*12. Purpose.
*13. Humor.
*14. Conscience.
*15. Love.
*16. Curiosity.
*17. Feeling.
*18. Desire.
*19. Precision.
*20. Consciousness.
*21. Logic.
*22. Senses.
*23. Being.
*24. Peace.
*25. Honesty.
 26. Diligence.
*27. Idealism.
*28. Efficiency.
*29. Esthetic sense.
*30. Self-understanding.
*31. Wisdom.
*32. Values.
*33. Ambition.
*34. Benevolence.
*35. Speed.
*36. Thought.
*37. Personality.
*38. Responsiveness and Interactiveness.
*39. Sanity.
*40. Individuality.
*41. Complexity.
*42. Pleasure and Happiness.
*43. Critical sense.
*44. Motivation.
*45. Realism.
*46. Astuteness.
*47. Intelligence.
*48. Independence and Autonomy.

*49. Religiosity.
*50. Friendliness and Warmth.
*51. Plasticity and Evolution.
*52. Energy.
*53. Expressiveness.
*54. Care.
*55. Meaning.
*56. Responsibility and Prudence.
*57. Facility.
*58. Interests.
*59. Embraciveness.
*60. Stability.
*61. Initiative.
*62. Excellence and Perfection.
*63. Genius and Inspiration.
 64. Sociality.
*65. Depth.
*66. Effectors.
*67. Grace.
*68. Vision.
*69. Perception.
*70. Dignity.
*71. Certainty.
*72. Completeness.
*73. World view.
*74. Gentleness.
*75. Simplicity.
*76. Style.

KEY:

*: Entry merits its own sub-list (say treating senses, types, taxa,
    elements, examples, consequences, etc).

THINGS A MAN CANNOT DO

NOTE: One valuable way to get or give a sense of what metacomputers will mean is by listing, as here, various examples--and classes--of things that a man lacks the ability to do. These range from everyday inabilities to highly technical and esoteric problems that, perhaps for very subtle reasons, exceed human powers of thought, action, perception, and being. Things that are on the margin--that lie minimally beyond our abilities --have special interest, but so do the most extreme and fantastic possibilities--of which man is utterly and necessarily incapable--since they point to whole new worlds to which only transhuman beings will ever be admitted, and dramatize the importance of creating metacomputers to circumvent human limitations and achieve ultimate things. Naturally the present list could be extended indefinitely. Undoubtably there are countless examples and classes of things man cannot do of which at the moment we can say nothing for knowing too little about man--and this includes some of the simplest and most basic things whose future uncovery will surprise us all. Research toward developing metacomputers, and subsequent research using metacomputers, will play a major role in the exhaustive discovery and characterization of the 'universe' of human impossibilities and finitudes. Whatever appears on the list that is cosmologically feasible will no doubt sooner or later be feasible for metacomputers in some evolutionary form, so this can also be read as a list of things that metacomputers can do but men cannot. Of course some of the things might require highly peculiar specializations of metacomputers, or have little actual relevance to the latter.

1. Tie his body in a double knot. (See what I mean?)
2. Simultaneously pursue 20 separate thoughts.
3. Think exactly like a dog.
4. Do intricate calculus in his head.
5. Reduce every form of behavior to an unconscious automatism.
6. Suspend all emotions indefinitely.
7. Walk a tightrope fearlessly, sans long training.
8. Work a year without any interruption or fatigue.
9. Circumambulate Africa without risk (or certainty) of illness.
10. Freely vary the speed of the stream of consciousness.
11. Divide into two different but simultaneous psychic 'selves'.
12. Pursue a single train of thought literally indefinitely.
13. Imagine things as vividly as though they were actually happening or entirely real.
14. Instantly redesign his total psychology.
15. Execute a backward somersault sans prior training.
16. Write a symphony in an hour.
17. Discern 20,000,000 taste elements in a bit of banana.
18. Observe himself as objectively as he would observe another person.
19. Instantly calculate the velocity and destination of a bullet seen in flight.
20. Simultaneously attend to every voice in earshot at a cocktail party.
21. Quantify intuitions.
22. Simultaneously visualize a piece of statuary from every spherical angle and distance.
23. Recall his exact thoughts at any arbitrary point in the past.
24. Learn any subject unaided.
25. Garner every PhD that earth's universities have to offer.
26. Run over the surface of a body of water.
27. Speak a year-long, unpunctuated but grammatically and logically coherent sentence--at 1,000 words per minute.

ALL POSSIBLE RESEARCH PATHS THAT MIGHT LEAD TO METACOMPUTERS

NOTE: The title of the list merely states what is the list's ambition
or grail. In fact the list could be and is only a useful preliminary
typology. It could and hopefully ultimately will be modified in a
variety of ways: added to, winnowed, reworded, ordered, hierarchized,
and explicated. It would be desirable to explain, justify, precise,
delimit, interrelate, critique, and illustrate its entries, to
rearrange the 'types of methods, investigations, and research foci' it
identifies into the common species, genera, higher taxa, categories,
concepts, and laws of a logical and unique taxonomy, and to weight,
diagrammatize, multidimensionalize, and write a book on each of its
entries. Inevitably its entries overlap, the words used do not always
do justice to the intended scope of the entry, the paths identified
are apt to vary widely in complexity and importance, some entries are
subsumable under one or more other entries, even the author is not
always clear in his mind about the intended meaning or actual nature
of entries, certain entries will give readers misleading impressions
or be vexatious or controversial, &c. Only some of the paths exist at
present or have been studied or entertained; the list includes other
possibilities for research of a more speculative nature, or that may
be pursued in the future. Finally, relationships between and among
the many different approaches are variously apt to be--for a greater
or lesser while--independent, mutualistic, commensal, parasitic, or
antagonistic; or complementary, supplementary, equivalent, coessential,
synergistic, convergent, divergent, mimetic, indeterminate,
exploratory, anastomotic, &c. The purpose of the list is at once
classificatory, heuristic, discussionary, terminological, prophetic,
synthetic, proscriptive, administrative, analytic, theoretical,
correlative, and inspirational. In particular, it is meant to insure
an early awareness in the general field of research of the total range
of research possibilities, stages, and goals, to maximize the diversity
of exploratory and ongoing research, to trigger an early and enduring
tolerance, respect, curiosity, and cooperative spirit among researchers
regarding one another's approaches, accomplishments, and possibilities,
and to make the entire long-term effort to achieve metacomputers more
methodical, systematic, planned, coordinated, purposeful, efficient,
strategic, powerful, complete, confident, and comprehensible.

DIFFERENT KINDS OF COMPUTERS

NOTE: Up until now the evolution of the computer has largely been homogeneous, unidimensional, or concentrated on the development of only one or a few basic types of computer. But it is conceivable-- and there are some indications--that this monomaniacal historical situation is about to change and computer science, engineering, and industry will begin researching and introducing an unknown but great variety of fundamentally different types of 'computer' or computer evolution will change from a unilineal to a branched, repeatedly branching, heterogeneous, anamorphic, or maximally differentiated, specialized, exploratory, or experimental pattern or future history. Specialized types of computers may be far more effective for certain computational and cognitive purposes. Very different types of computers than we have today, or have ever even imagined, may be possible, and the best thing for their discovery or development might be highly divergent research, at least initially; or research unrestrained by excessively general goals, methods, requirements, or ideas; or research--seemingly paradoxically--aimed at a maximum variety of different goals. Later the variety of approaches might be pruned or a single type of general purpose computer selected, or the effort might be made to combine a maximum variety of computers into one maximally unified kind or complex of computers. In any case, a problem has recently arisen of a terminological, conceptual, and taxonomical nature from the proliferation of computer types, goals, and concerns. Terms for distinct types of computers are absent, ambiguous, ill-defined, redundant, unargued, arbitrary, or unconnected; they are uncontrolled by any fundamental, comprehensive, responsible, and authoritative vision of the future.

REASONABLE MINSKY-GUNKEL COPRODUCTIONS

NOTE: These are charts, lists, &c that it might make sense for Minsky (the MIT AI Lab) to coproduce with Gunkel, particularly by Minsky detailing an artist or someone else to produce large-scale, mural versions of the crude lists and charts Gunkel makes. These artistic many-square-feet charts could, for example, be reproduced to serve AI research around the Lab by hanging on office walls and stimulating ideas, thoughts, and research.

*1. Universal Shapes.
*2. Universal Organon.
*3. Robot Roles.
4. Future A.I. Research Methods.
*5. A.I. Goals.
6. Analogies.
7. Ideonomy Outline.
*8. Life Moments.
*9. Man's Defects and Limitations.
*10. A.I. Pros and Cons.
*11. Pros and Cons of Feasibility.
12. Future Dimensions of Intelligence.
*13. Memory Dimensions.
*14. Future Perceptual Dimensions.
15. Psychic Dimensions.
16. A.I. Uses.
17. Sensors.
18. Effectors.
*19. A.I. Scenarios.
*20. Home Robots.
21. Scientific Consequences.
22. Consequences For Art.
23. Social Consequences.
24. Educational Consequences.
25. Industrial Consequences.
26. Technological Consequences.
27. Political and Military Consequences.
*28. Treatment of Knowledge.
*29. Criticism Organon.
30. Perception Organon.
31. Research Program.
32. Taxonomical Organon.
33. A.I. Future.
34. Axioms and Fallacies.
35. Error Organon.
36. Autology.
*37. Elementary Acts.
38. Elementary Purposes.
39. Research Problems.
40. Unanswered A.I. Questions.
41. Structure of A.I. and Related Fields.
42. Variant Definitions of Intelligence.
43. Proposed Vocabulary.
44. Intelligence Ladder.
45. Xenomorphic A.I.

*46. Things A Man Cannot Do.
*47. Robot Nannie.
*48. A.I. Pets.
*49. More Human Than Man.
50. Man-A.I. Hybrids.
*51. Robot Secretary.
*52. The Intelligent House.
*53. Infinite Playmate.
*54. Future Headlines.
55. Ultra-Motivation.
56. Panacea.
*57. Rehumanization.
*58. Gedankenfragen.
59. A.I. Effects.
60. A.I. Paradise.
61. Grand Roles.
62. A.I. Renaissance.
63. Problems From A.I.
64. Automated Research.
*65. What A.I. May End.
66. Subject Effects.
*67. 'Intellectual' Activities.
*68. Why Men May Prefer A.I. To Men.
*69. Simulator.
70. Trillion-Robot World.
71. Mathematician.
72. Questions For A.I.
*73. Unbounded Things.
*74. Superhuman Slaves.
*75. Perfect Friend.
*76. Shift of Authority.
77. A.I. Diversity.
78. A.I. Achievements.
79. Future Milestones.
*80. Apotheosis.
*81. Without A.I.
*82. Fear of A.I.
83. A.I. Stereotype.
84. A.I. Ontorium.
85. Own Interests, Values, and Goals.
86. A.I.-View of World.
87. Theses and Assumptions of A.I. Methods
88. A.I.'s Future Centrality.
89. Anthropomorphosis.
90. Capacities.

91. Ultimate Futures.
92. Fields A.I. May Help Found.
93. A.I. Research Spin-Offs.
*94. Origin Scenarios.
95. A.I. Tutor.
96. A.I. In Person.
97. Machine Ethics.
98. A.I. Precautions.
99. Transitions To A.I.
100. Types of A.I. Hardware.
101. A.I. Standards.
*102. Technology With A Human Face.
*103. Cornucopian and Kaleidoscopic Industry.
104. Ersatz A.I.
105. A.I. Nightmares.
106. A.I. Exploring and Exploiting the Omniverse.
*107. Biogogue.
*108. A.I. and the Zeitgeist.

KEY:

* = For the item in question
  a list or chart has <u>already</u>
  been prepared.

FALSE METACOMPUTER ORIGIN SCENARIOS

NOTE: These are notes that may be of use in preparing one or more
scenarios treating possible 'false origins' of metacomputers in the
future, i.e. chains of events, breakthroughs, accomplishments, research
methods, or research undertakings that initially seem to guarantee--or
represent--success in developing a genuine and working metacomputer,
but subsequently prove to have been premature, misleading, or
misrepresented.

(A) Why False Origins Will Occur:
1. The subject is so sensational.
2. Tension will soar as the era of success approaches.
3. A vast proliferation of competing methods, teams, and programs
   will occur in the future.
4. Journalists and other sources of rumor will often misunderstand
   and misrepresent esoteric technical developments.
5. Corporate, military, academic, and international secrecy will
   create a speculative, illusory, and irrational climate.
6. Movies, novels, and other forms of science fiction will create
   artificial moods and stereotypical notions about how
   metacomputers will originate that will then live a life of
   of their own in the minds of the public.
7. Competing researchers and their interested backers will
   exaggerate and start rumors to gain subtle advantages
   and will express unjustified optimism.
8. The profitability and impact of related past achievements,
   vast sums tied up in research, and future level of
   sophistication about the dimensions of what success in
   metacomputer research would mean.
9. What is really meant by "intelligence" is extraordinarily
   elusive; as we advance it retreats or shows new colors.
10. Sudden, unexpected, and important breakthroughs are inevitable
    in this instance and will occur repeatedly.
11. In theory there is no limit to the range of alternative
    approaches that might achieve metacomputers, and novel
    ones may and will be thought of and tried all the time.
12. Promising new A.I. methods always seem to have unforeseen
    problems, limitations, costs, and tradeoffs.
13. In the case of metacomputer research, it is singularly hard
    to guess how distant, or immediate, all-out success may
    be; few meaningful yardsticks for progress exist, and they
    may all be completely misleading or irrelevant.
14. A.I. methods and computers are like mirrors that reflect our
    expectations to tantalize and tease us and lead us astray.
15. Even partial or aspectual success with A.I. will be
    interpreted as a miracle and read as total.
16. Each time success is attained, new demands and criteria for
    'real success' may materialize that frustrate public or
    expert acceptance of the 'authenticity' of any origin;
    this may even go to the extreme that highly idiosyncratic,
    nonintellectual, anthropomorphic, physical, or quodlibetic
    requirements are added almost interminably.
17. Intelligence is intensely and paradoxically multidimensional,
    and its dimensions are often orthogonal.
18. Restricted methods will prove fantastically powerful.

19. Horribly strange, complex, turbulent, and indeterminate possibilities and phenomena may prove to be characteristic of computers on the borderline of being metacomputers, and research approaching true metacomputers may be uniquely chaotic and confused.

20. Mechanical forms of intelligence, behavior, or character may be achieved that at first genuinely seem to equal, duplicate, or even surpass man in some, most, or all ways, but that later prove to be unexpectedly limited, false, unreliable, imperfect, or incomplete--perhaps for reasons that we in the present would wrongly think trivial.

21. Slight edges in achieving metacomputers by different competitors--it may come to be realized--are apt to be fantastically consequential.

22. Industrialists will pretend that <u>they</u> have successfully achieved a true metacomputer in advance of actually having done so, in order to be first; other research groups will have a similar tendency to make premature claims. This is especially true because of the complexity and uncertainty of what is meant by "metacomputer" and "success".

23. As computers approach being metacomputers it will be possible for their sly developers to 'dress up' their properties and powers, or augment rather artificially certain of their mental dimensions, in order to gain the appearance of being first or ahead in creating a full and true metacomputer-- and the practice will probably be common.

24. It is at least conceivable that initially certain metacomputers will prove 'meteoric' by briefly attaining true metacomputer status and then reverting or degenerating to a lesser, disqualifying state; perhaps because they are unstable, lack sustaining capacity in some dimension, somehow 'age' rapidly, can only achieve metacomputer-hood under highly artificial, evanescent, or anthropogenic conditions, are extremely cyclic or episodic in their functioning, have a tendency to 'tire' quickly, 'become insane', 'lose interest', become uncontrollable by man, 'lack character', 'lack meaning or purpose', become disordered or too ordered, 'become autistic', transmute, succumb to singularities or self-interference, &c.

25. On the edge of metacomputer success, new methods may suddenly appear to push aside old--even new methods developed by or thanks to the nascent metacomputer(s). (Aborted methods would then represent "false origins".)

26. See "(B)" below.

(B) <u>Possible Forms, Bases, and Circumstances of False Origins</u>:
    1. Moronic androids like oligophrenic human beings.
    2. Powerful, impressive, but 'mere' automatic language translators (perhaps competent but mindless; idiot savants that are superb linguists but absolutely nothing more; high-level sensorimotor systems with no 'thoughts'; pure verbalists; powerful but eternally fixed programs; supreme but unconscious associative memories representing 'pure physics or mathematics').

REASONS US CONTEMPORARIES MIGHT BE 'FOR' METACOMPUTERS

NOTE: Follows are some of the many reasons why you, I, or our fellows
might look forward to the creation of metacomputers.

1. Humor.
2. Heroism.
3. Idealism.
4. Curiosity.
5. Intellectual fascination.
6. Greed, or anticipated profit or opportunities.
7. Misanthropy.
8. Adventure.
9. Religious sentiments.
10. Self-contempt.
11. Altruism, or a wish to serve humanity or to see humanity served.
12. Fear or hatred of the present or status quo.
13. Love of justice.
14. Desire for beauty.
15. Loyalty to Progress.
16. Yearning for higher or supreme things.
17. Parental instincts.
18. A perfectionist streak.
19. Unsatisfiable wish for a too-perfect friend.
20. Utopianism, or craving for a perfect society.
21. Anxiety about the possibility of world war.
22. Millennialism, or desire for an Apocalypse.
23. Weariness, or a wish to resign the world to another species or protector.
24. Love of machines, technology, or science.
25. Worship of intelligence.
26. Desire to meet one's better or a superhuman being.
27. Fondness for computers, or actual involvement in A.I. research.

SCENE-THEMES FOR ANIMATED FILM ON FUTURE OF A.I.

Mechanical pets ("mechs"). —*see extensive text list description.*
All-aestheticized world. —*e.g. fire hydrant, curb, walls, cars, skylines, art-like skyscrapers, toys, newspaper*
Trillion-robot world--see chart "Robot Roles". —*vast panorama with robots of all types swarming & busy everywhere; also show as snowing marching army, robots assembling in familiar places (plazas, museum corridors, Manhattan, farm, nursery, etc.).*
Best friend.
Biogogue.
House robots.
Manless factory.
Court with robot judge.
'Autopiloted' cars.
Robot Nannie.
Handy Andie robot.
Robots doing undesirable work: sewer, garbage, dangerous construction,
    boring assembly-line, monotonous clerical, etc.
Robots making robots.
Kaleidoscopic & cornucopian industry. —*(for first) show old assembly line every object different; (for 2nd) factory, freight yard with every imaginable (novel) good being made*
Infinite art--10,000 masterpiece symphonies per day/second. —*show Opus 1,239,621" record covers, play some portion at ultra-high speed*
Robots cleaning up world--all liter, painting all houses.
All-billionaire world. —*see old list!*
Super-self.
Mediated being.
Intelligent House--talking appliances. —*great, easy!*
"Technology with a human face". —*scene with device acting & speaking to human rather than adjustments.*
Robotic psychiatrist. —*show "Freud" on couch being diagnosed by "box".*
400 scenarios.
"Pocket MC" instantly pursues all questions, tasks--<u>a la</u> pocket calculator.
More human than man.
Xenomorphy.
Mechanical biosphere & all Nature mechanized.
Vice-self.
MCs' supreme ontorium (sensorium & ergorium).
All-thinking, ideonomical, Omniversalist.
Infinite librarian "superorganizing knowledge".
10^{21}-E MC the size of a sugar cube. —*funny ironic sequence (see hyperchat "straylet" in DSI).*
Infinite storyteller. (show child experimentally manipulating MC's stories
    in real time.)
Instantaneous thought & reactions.
Robot rights & suffrage. (show robot picketers, protest march, segregated
    in back of bus, attacked by kids with stones, casting ballot, standing
    in court, sitting in senate chamber, running for president.)
Transhuman risibles. (show telling jokes.)
Infinite playmate--for adults & kids.
Ultramotivation.
Divinization by man--deus ex machina.
End to totalitarianism.
Godlike prevenance & angelic.
Panhuman superparent.
Hypermoral & hyperbenevolent.
All-actualizing.
War obviated.
Rehumanization.
Apotheosis of childhood, people raising MCs, "raising one's super-self".
Infinitely protean personality.
Heavens within hells.
Physicalization of ideas.

Boss machines.
Universal Aristarch.
Explosive & infinite self-evolution.
Catalyst of infinite renaissance.
Supersimulations.
Man-machine symbiosis.
Adinfinite rate of scientific progress.
Thaumaturgical technology--e.g. quasi-telepathic, quasi-prescient,
     quasi-omnipotent, quasi-omniscient, quasi-telergic.
Idol of humanists.
Omnipresent, omni-vocal, & omniactive.
Re-creation & rediscovery of old art.
Supreme military asset.
More trusted than man.
Supreme teacher.
Collaborator.
Ideologies obsoleted.
Ultimate love affair.
Panacean.
Rediscovery of Nature--& the universe rediscovered as the Omniverse.
Superperception.
"Theurgy".
Hyperliteralism.
Superhuman slaves.
Laboratory automation.
Ultimate futures.
Enabling one to talk with oneself.
'Good guys' getting absolute power.
Supergovernment & transdemocratic government--supersedure of the rule of law.
Oneirocosms & the "World Dream".
Manless, all-robot planet.
Zeitgeist transformed.
Higher forms of reality explored.
Man-machine competition & friction.
Mixed reception by men.
Quasi-intelligent.
Paradisialization of earth.
Promethean projects--megaengineering, science programs, etc.
Age that is posteconomic, post-political, post-educational, post-institutional.
Maximizing of all standards.
MC abuse & misuse.
Pesty MCs.

NOTE: Themes listed here are those that might be used in the popular version of Beyond Man, by way of maximizing its chances of becoming, and its sales as, a best seller, and b___, of maximizing its interest and value to the public. Some or all of these themes might be used, as well as themes that have not been listed here. These themes have been chosen to be maximally: sensational, dramatic, colorful, entertaining, comprehensible, meaningful, important, treatable, strange, familiar, or interesting to the general public for any reason whatever.

1. Infinite art. - The ability of metamachines to produce an infinite quantity, variety, range, universe, and evolution of new works of art, ad libitum or autonomously; to evolve new, infinite, and all possible artistic styles, forms, taxa, themes, purposes, materials, tools, media, realms, and applications; to ascend to ever higher artistic levels and niveaux; to create art virtually instantaneously and effortlessly; to produce adinfinitely meaningful, important, complex, beautiful, and sublime art; etc.

2. Money trees. - Directly or indirectly self-reproducing, self-improving, self-infinitizing, and self-transcending robots, automata, and automatic industries of the future that will maintain, manage, and extend themselves without human intervention or attention, maximize resources and wealth, and represent the 'biologicalization of industry and the economy'.

3. Man-machine coalescence. - The progressive physical and mental linkage, interlinkage, convergence, coalescence, and unition of mankind and its intelligent and increasingly transhuman technology, via sensory, motor, cognitive, and other systems.

4. Art-science synthesis. - The progressive, and ultimately total, future: transformation of all the arts into science, technology, and mathematics, interpenetration of the latter with the former, and reciprocal transformation of all sciences, technologies, and mathematics into art, arts, and aesthetics: that metamachines will so greatly enable and abet.

5. Rediscovery of nature. - The future rediscovery, or discovery for the first time, of the adinfinite beauty, complexity, form, bases, meaning, topography, dynamics, human possibilities, realms, levels, networks, elements, phenomena, ordering, grandeur, and sublimity of Nature as a whole and in all of Her parts, by and via metamachines.

6. A.I. as panacea. - The special and perhaps unique tendency or ability of A.I. to be a panacea, or to solve--in whole or part--all or most past, present, or perhaps even future problems of man, the world, or in general; or the potentially special benignity, essentiality, controllability, utility, or directability of metamachines.

7. Man's best friend. - The progressive tendency of metamachines to become, and their ultimate role as, man's best friend (as childhood buddy, wife, husband, parent, teacher, mentor, collaborator, servant, secretary, protector, patron, offspring, leader, sage, and daimonion), owing to their: omnipresence, knowledge of and insight into oneself, absolute fidelity, responsiveness, helpfulness, patience, flexibility, conversationality, power to entertain and edify, all-remembrance, universal abilities, personability, charm, humor and playfulness, etc.

8. Liberation of human soul. - The unique, progressive, and total ability of metamachines to unfetter, serve, perfect, and extend whatever is highest or most essential in man, or human: spirit, Eros, wisdom, poesy, character, emotion, intellect, intuition, memory, conscience, imagination, love, morality, goodness, consciousness, selfhood, logic, self-insight, reverence, beauty, unity, knowledge, purpose, destiny, diversity, or potentiality; say by stripping away whatever in man is: arbitrary, finite, irrational, disharmonious, inaesthetic, amorphous, accidental, passé, useless, rigid, irrelevant, animalistic, flawed, troublesome, etc.

9. Ultrasanity. - The superhuman degrees and forms of sanity attainable by or in metamachines, because or in terms of their: self-insight, self-control, self-creation, self-evolution, imperturbability, stability, internal peace, psychic self-sufficiency, objectivity, transcendence of the here and now, total rationality, psychic integration, transegoism, infinitely complex esthetic being, refinement, wisdom, absence of animalistic drives, angelicism, foresight, universal understanding, anthroposophy, incessant bliss, infinite epoche, extreme cautiousness and care, judgment, balance, complexity, totally deliberate being, clarity, proteanness, depth, intelligence, superconsciousness, freedom from illusion, humor, myriad-mindedness, courage, strength, confidence, physiosophy, realism, instant learning, decisiveness, experimentalism, reflectiveness, coordinated behavior, all-lovingness, etc.

10. Robot pets. - The progressive emergence of robot pets simulating, equaling, excelling, perfecting, replacing, and without analogy to today's animal pets; e.g. equally or uniquely: friendly, funny, curious, playful, trainable, odd-looking, odd-sounding, pretty, complex in behavior and personality, smart, well-behaved, gentle, affectionate, interesting, individual, appreciative, active, contact-seeking, imitative, obedient, trustworthy, etc.