



An Essay on the Right to Think: Planning for a Future with AI

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Abstract: This conceptual, systematic review article attempts to answer the question of if, when, whether or not, and how Artificial Intelligence (AI) (super computers) should be safeguarded so that humans remain the managers of their own minds, with physical, business managers primarily in charge of the last aspect of the question- how this will be done. The paper employs a philosophical methodology based on the theory of Maslow's "hierarchy of needs," and several original economic equations, to compare the recent writings of three books by renowned scholars on this subject and to answer these important questions, socially, economically, and politically.

Keywords: Artificial Intelligence; conflict; freedom; future; Maslow

Introduction:

The Middle-Age philosopher René Descartes infamously once wrote, "Cogito ergo sum," translated from the Latin as, "I think, therefore I am." This systematic review essay summarizes three books, which in this author's analysis are seemingly the most topical, and meaningful, ones about Artificial Intelligence (AI), all three of which have different futuristic prognostications. These books are by: journalist James Barrat (2013) who takes a negatively dystopian view of the future; to Kissinger et al. (2021), led by one of the greatest scholars of our age, who, combined, take an overall portentous view; to Lee (2018), a computer expert who has worked in both China and Silicon Valley, who predicts a noticeably mixed AI outcome. The essay will also build on the works of Barry and Aho (2016), and Barry (2018) (2020), who cited many other authors, and focused on the social, political, and economic spheres, primarily on the economic dangers of AI.

Many AI writers, in explaining *AI intelligence*, start off by describing AI victories in games such as Chess, GO, and Othello. However, with the IBM machine used to defeat players on the U.S. t.v. show "Jeopardy," it should be noted that AI still needed human help in giving it the questions! These authors typically then discuss the latest, nouveau advances in robotic usage, such as how AI are now even writing their own essays, through programs like that called GPT-3, which has garnered recent news stories (Kissinger et al., p.11). In this essay, your author will first attempt to define AI and offer some initial philosophical thoughts about AI's harms and benefits. The essay then provide several methodological theories and equations to evaluate its progression in understanding of the world, then broadly attempt to answer how AI will manifest itself in such ways as to be potentially useful, or "dangerous," in various forms in society. Then, in a results section, the author will offer 10 prescriptions, based on a self-admittedly faith-based philosophy, for easing the transition into an AI world. These prescriptions are offered in the hopes that an AI world can be "managed" so that it is peaceful, beneficial, and "free."



Background:

The standard for *defining* Artificial Intelligence (AI), is the Turing Test, named after the World War II computer scientist Alan Turing. Turing held that humans consider AI to be human-like if AI can convince us that it is such. This concept was later reiterated in 1956 by the computer scientist John McCarthy (Kissinger et al., p.56). Artificial Intelligence is still in a phase where it requires human help to learn and grow. Yet, within several decades, the exact time and place of which is debated by researchers, AI could acquire the ability to think faster than humans, called AGI (artificial general intelligence) or to think and learn independently, on its own, so-called ASI (for artificial superintelligence), also called the “singularity.”

If Artificial Intelligence (AI), machines that can think, become so powerful, so as to think for humans, do we lose our human race? Or, should humans struggle to maintain the managing our minds, and our freedoms? This is the *research question* of this essay. Power here is defined as the ability to use one’s own will, and others’, along with resources, to affect change. It is this author’s view that the greatest danger from Artificial Intelligence, in its super-most form, is not likely from developing it all at once, in a singular moment, but *gradually* over time, separately, between different governments and businesses. This will depend on the funding, in the billions of dollars in investment. This investment has been steadily increasing since the 2008 U.S.-led financial crisis, at a time in which AI suffered from a “stigma” (Barrat, p.194). Funding is now in the tens of billions of dollars per firm. In fact, AI is now running some 70% of Wall Street trades, to monitor nearly every up or down tick. Artificial Intelligence technology is also being used to create “smart bombs” militarily. Other uses range from healthcare, to consumer uses like search engines, supply chain planning, and buying choices. More uses will be elaborated upon later on, to provide the knowledge necessary to understand the potential dangers and risks.

Humans have been *ceding power* to machines for hundreds of years, since the Industrial Revolution, and well before, with which there is nothing ostensibly wrong. However, while that revolution produced millions of lower-class jobs, the current one may not, due to the degree to which AI can evolve faster than humans, reducing jobs without replacing them, changing the human race, or, leading to harmful AI-human conflict. The main effect of AI so far, to take the invention of the computer in World War II as a starting point, has been that humans have become less knowledgeable (see Figure 2 forthcoming), but have greater access to knowledge, and that society has advanced, and humans are living longer. The *desire* to live longer and better, and the intrigue and excitement, is the main human drive to create AI. As Barrat (p.137) writes, “how can you ... evaluate tools..., when you believe the same tools will permit you to live forever?”- if possible. This drive, propelled by money and profits, however, might be limiting to human freedom: for good or bad.

That said, many human might already be weary of ceding power to AI. As Barry (2020) wrote, a balance should be the aim, in which human power should come to equal AI power. This equilibrium should occur to avoid human-AI conflict, so each can pursue their values and differing needs separately and peacefully. Power, though, is not intellect, which is elaborated upon later, as each form should be allowed to increase their own intelligence. This AI intellect might ultimately benefit humankind. However, the belief that AI are the same “*civilization*” as humans, the same power, which Barrat quotes scholar Ray Kurzweil (p.153) as saying, then ceding AI control as much power as possible could deny humans our idea of God-given, or

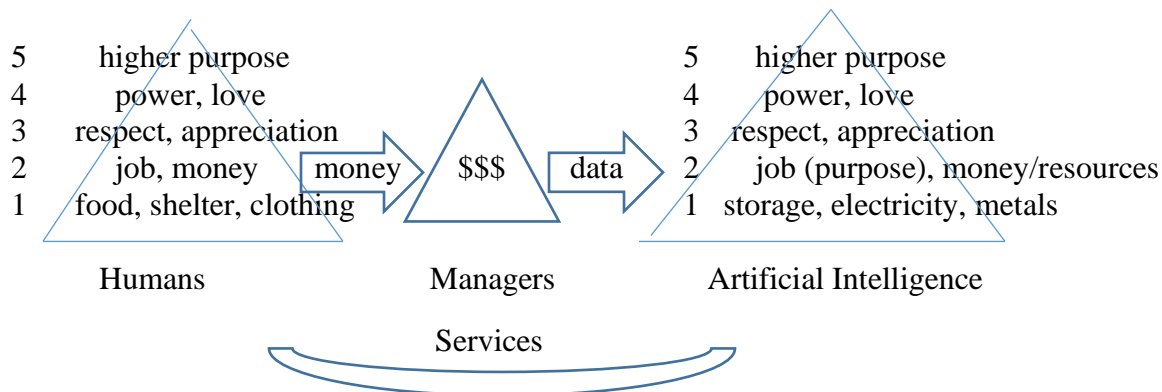
Universe-granted, freedoms. This creates a greater chance for AI-human conflict over power. In fact, a *super intelligent AI* has probably already been created, or multiple ones, kept secret by the company or government responsible for the development, for security purposes. In sum, the free-will right to think is hypothesized here to play an important role in consumption, business, politics, the military, and culture, to maintain humans’ power to pursue its senses of purpose, whether that involves work, family, religion, or recreation, or some combination, etc.

Method:

The methodology of this paper will be philosophical based on the theory of Maslow’s hierarchy of needs, plus several equations and charts, mostly original, which are conceptually offered. Artificial Intelligence requires enormous amounts of energy, and means of cooling itself, and will, like humans, develop emotional needs and a higher sense of purpose.

Theory:

Figure 1: Maslow’s Hierarchy of Needs, Adapted:



[1]: Economic Equation: The AI Economy:

$$QP= Cw + Ew + (p)M + LwM + R(c) + Aw + Nw$$

“Quantity of goods times their prices equals the sum of capitalists times their wage rate (or profits) [some of which is reinvested], employees times their wage rate, machine physical prices times the number of machines, machine laborers who make the machines (roundabout) times their wage rate and the number of machines they create, raw materials times their cost, machine “advancers” from research and development times their wage rate, and “entrepreneurs” who expand the business into new areas, times their wage rate.” (Barry and Aho, 2016). Essentially, the smaller jobs involved in production on the right hand side might have a higher survival rate.

[2]: Economic Equation: The Gains to Society

Gains > Losses

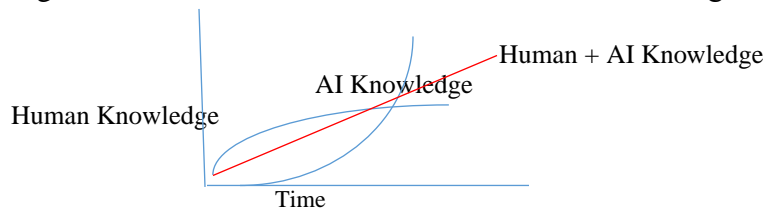
Profits > Expenses

$$T + Q + L - S > I + D + C + E$$

Time Saved + Improved Quality (fewer errors) + Longevity - Money on Food/Shelter/Storage/Clothing of Labor (Sustenance) > Tech Investment (Labor + Capital/Energy + Funding) + Depreciation + Loss of Sociability (C) + Education Investment Change

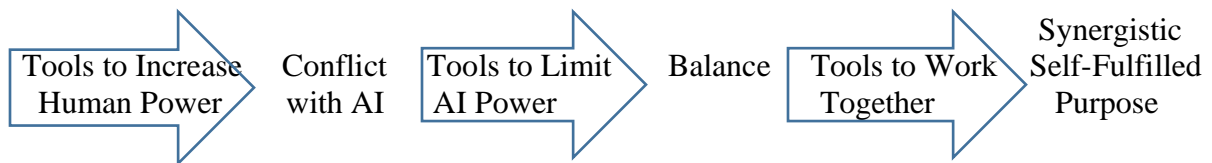
The greatest change in technological improvement is the duration and long-lastingness of new equipment. For example, for the self-scanning machines in super markets can last long amounts of time after having been created.

Figure 2: The Postulated Decline in Human “Knowledge”:



Note: We have more access to knowledge, through more sources, and that can lead to greater intelligence, but intelligence also involves reason, and the ability to make choices.

Figure 3: The Evolution of Human Inventions:



How AI works and learns:

According to Kissinger et al. (p.62-64), and many authors, there are two different approaches to design AI, each which will affect how it views the world, differently.

1. Feeding AI with data so that it learns by itself.
2. Creating an AI brain similar to a human’s using the human brain as a prototype.

According to Kissinger et al. (p.81), the Beijing Academy of Sciences has created a brain only 10⁴ times less than the synopsis in the human brain. Writes Barrat, by 2029, an AI brain will be as “nuanced” as a human’s, as the U.S. government’s Sequoia machine, at the time of his writing, was 80% the speed of a human brain. While “brute force” used to be

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used for programming AI, more intricate learning now is used (#2 above) (Barrat, p.131, 144).

Write Kissinger et al. (p. 76-85), there are three types of machine learning:

1. Supervised- which have a desired output or result.
2. Unsupervised- which have only inputs and therefore AI can give answers out of context, lacking common sense, or age status, also due possibly to “bugs,” or the creation of AI to be somewhat “idiot savants,” to excuse the term.
3. Reinforcement Learning- giving AI rewards, such as in George Meade’s “Looking-Glass Self,” whereby one gains understanding by the responses of others, can help AI understand itself. But, AI cannot explain or reflect on all of its decisions. Yet, after it wins at something, or succeeds, it responds by needing to know how well it did.

Barrat (p.74) expounds on #2 and #3 listed here, to say that some researchers are using, as a check, genetic programming, whereby codes that do not produce results are “thrown out.” He writes that AI could be created like an infant and then placed in a setting to continue learning (#3 above), correcting a so-called “grounding problem,” and helping AI to recognize objects physically. In fact, such testing grounds could be used to correct for unwanted “glitches,” writes Lee (p.240). In 2015, “deep neural networks” became used, which can translate data in any direction, like bar codes that need no direction. Today, some AI firms use “inference engines” to better help AI form conclusions from data using context (Barrat, p.70, 166).

Barrat (p.217-220) suggests that AI brains are different from humans in that human, and nearly all animal brains, have cortical hierarchical systems, which categorize information, from thousands of thoughts and feeling that we are having from all parts of our bodies at the same time, helping us to make decisions. Lee also writes that humans have parallel processes, to divide up tasks in the mind. Though lacking these elements, robots, using “cognitive architecture” as programmed, will indefinitely try to evolve and improve, resulting in new values. Barrat calls these Advanced Neural Networks (ANN’s), in that AI can change their own weights, or values, to concepts differently from originally programmed by humans.

One AI, like the Eurisko, a small-scale development, was shut down in order to for its maker to focus more time and thought on developing its “common sense.” This AI had taken to “naming” its achievements, presumably to take pride and ego, in its learning. Most likely, all AI will be able to think, and communicate, together, absent human involvement, though perhaps with the help of human satellites, cloud computing, and the Internet. To be self-aware, like humans, AI must constantly understand how they are affecting the world around them, and most researchers agree, that AI can do this (Barrat, p.80-81, 177).

Barrat (p.82) writes that AI will have 4 “drives,” or goals/purposes, stemming from their original programming. These are: 1) efficiency, 2) self-preservation, 3) resource acquisition, and 4) creativity, but also, your author might add, an over-arching sense of finding purpose. Kissinger et al. (2021) offers that there are three options to human for living with AI: 1) “confining,” 2) “partnering,” or 3) “deferring.” This will determine if AI, or humans, will be a tool, a partner, or a rival.

Lee (p.211) essentially surmises that four possible relationships exist between the human and AI mind: 1) to allow AI to think and humans to be a “check,” which, though, could be a



form of “slavery,” 2) to combine human and AI minds- “cyborgs”, 3) to allow human and AI equal percentages (50%) of making decisions, but how would this be divided in unclear, and 4) to allow AI to completely think for humans. There may not be one best answer.

International Competition:

It seems counterintuitive that this paper is about limiting AI, and then, in this section, to talk about how demoralizing it is that other countries are surpassing the U.S, the nation-state of the author. But, the purpose here is simply to point out that all countries that use AI should adapt some sort of rules for control. Politically, the U.S., Canada, and Great Britain were the early AI movers. However, according to many authors, China’s government is now much more involved with AI than these other governments, since they already use much surveillance, and have a history of tinkering (or “copying) with new technologies to create local adaptations, let alone personal adaptations. This goes back hundreds of years to the 16th Century Ming Dynasty. There are fourteen official cities in Silicon Valley, whereas in China, local governments have focused on specific areas of development across the country, yet, still have a Silicon Valley of its own called Zhongguancun (Lee, p.3).

China’s cities, which are subsidized by local governments through tax breaks and investment, aid in vast amounts of developments. They also provide money for labs, and ease business creation. This encourages entrepreneurialism, for which China has millions of workers, who are engaged in fierce competition, simply trying to survive, rather than “change the world,” as in Silicon Valley. While a few smart scientists used to necessary for AI development, now, an army of semi-skilled workers and managers are needed, which China has in abundance (Lee, p. 85). On top of this, China has vast amounts of data, due to their substantial population, and a history of collecting data through government and security surveillance. Although early-to-arrive Western Jesuits pursued so-called “clock diplomacy” to impress the Qing Dynasty, China, after years of trying to copy the West, is now taking a leadership role (Lee, p.29). Data is the “key” to creating AI (see Figure 1), since it helps AI to learn and recognize patterns. Lee says that overall, the world is moving from an age of discovery, to an age of exploration, with AI, and also form an age of expertise (once run by the U.S.), to an age of data, which the Chinese government now recognizes as an official type of economic resource.

Kai-Fu Lee also writes in his first book (2018), that after having been born in Taiwan, and having worked in both the U.S. and China, that China is now advancing faster. Western companies taking an interest in China mishandled their early marketing campaigns, by downplaying local Chinese tendencies, which gave rise to the Chinese BAT firms (Baidu, Alibaba, and Tencent). The WeChat Ap, made by the latter, allows users to do virtually any conceivable task on their cell phone; these tasks are listed in the next paper section. Chinese firms tend to look at the market first, before creating the product first, like U.S. firms do, which gives China an edge in flexibility. Early Chinese companies used the Chinese tradition of families giving members red envelopes with small gifts like cash, to use AI to distribute digital red envelopes (Lee, p.60). Chinese companies tend to go “heavy,” and link all of the aspects of a products development and usage (Lee, p.71). Still, Lee says that the greatest dangers (discussed later militarily) are within countries, not between them (Lee, p.139).



Beneficial and/or Harmful Uses

This section will lay forth the possible uses of AI, based on Equations [1] and [2] in the methodology section previously, to list and better understand the realms in which conflict may occur. Related to these equations, Lee (p. 166) describes what is known as the Moravec Paradox, in which AI replaces more “white collar,” or middle-class jobs, because they are actually easier for AI, which is not dexterous, and, one might add, that these are more profitable jobs to gain earnings from. Although various studies have predicted differing degrees to which human jobs will be replaced by AI in the next several decades, Lee takes at middle ground at 40-50% (Lee, p.19), but also notes that certain “tasks” might be replaced, rather than complete jobs, and also that there will be more part-time work, job “sharing,” and new occupations, such as for “care workers,” and more computer programmers or repairers. Artificial Intelligence seems to have four areas of implementation: 1) Military, 2) Consumers, 3) Business/Economics, 4) Government, and 5) Social Life (addressed later in the forthcoming Discussion).

As Kissinger et al. write, “Humanity has always dreamed of a helper,” (p.59), who might even be preferred over other human helpers (Kissinger et al., 190), and Barrat calls the current time: an “assistance period” (p.194), from which a new period of AI self-thinking will follow.

Military:

In the military, AI is being used to create more sophisticated bombs, equipment, drones, fighting robots, and self-piloted planes. A Chinese superweapon was sent at supersonic speeds around the Earth and then landed back in China near its take-off space, declaring, “close enough.” More practically, the U.S. military has been matching humans with military jobs, through a program called LIDA, in the Navy, which could be applied to the private sector (Barrat, p.178)

Commerce:

Commercially, nearly everyone in the industrialized world has probably been subject to “robotic telephone calls” or servicing. Search engines are becoming more advanced to tailor one search to previous searches. Artificial Intelligence can make recommendations for products or shows, called “affinity analysis” (Barrat, p.25, 73), based on facial scans or previous Internet searches. This will become prevalent in all walks of life. Lee writes about personalized news stories, many which can now be written by AI reporters (Lee, p.108). Some of these tasks involve a “positive network effect”- as more users use it, it is nearly impossible to avoid. In effect, AI needs scale (Barrat, p.95, 100).

Unquestionably, people will be asked to participate in studies to help advance AI data, which will become a new profession. Small AI could become “embedded” in watches, phones, utilities, appliances, security systems, and optical lenses (Barrat, p.51), as Lee (p.57) writes about photo-editing apps, antivirus software, and biometrics combined with passwords for using technology. Artificial Intelligence is already being used for steaming videos, ride shares and navigation, dating apps, numerous online services, and communicating across languages and cultures. Health-wise, AI will become prevalent in detecting cancer, organ diseases, and analyzing genetic codes, to performing surgery (Barrat, p.69, 94). Lee (p.141) writes that we will be able to renew our bodies via nanobots placed in the bloodstream.

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Business:

In business, recent technology has also made more precise measurement tools, in all fields, for research, such as with advances in chemistry and physics, etc. (Barrat, p.39). Economic uses are for planning and predicting supply and demand, for quality control, and for predicting crop yields, let alone planting the crops themselves. In research, AI can fill in computer code, and in marketing, it can create ads and commercials, and use facial recognition (might be biased), to scan people entering stadiums, or shopping places.

Already in use are food transportation, and good delivery, which could expand to be done by civilian drones. Barrat (p.124, 183) writes that AI could be used for semiconductors, electronics, servers, hardware and software, for drafting documents, or doing research. Financiers can use AI financial modeling for risk assessment, and credit approval decisions. Or, they could be used in microfinance with the ability to predict who will pay back (Lee, p.112-113). In terms of safety, AI could be used for mining, policing, or firefighting, or, in the vanity fields, for maids, valets, gardeners, etc. Barrat writes about AI replacing librarians, travel agents, and helpdesk technicians, and quotes other authors who refer to this technological unemployment as the “great decoupling”- what others have called the “digital divide,” or the “skills bias.” (Barrat, p.184, 224) Lee remarks that China has a history of the “iron rice bowl” (p.67) of permanent employment, but, in America, the model is “employment at will.”

Government Urban Development:

With development, Lee writes that infrastructure will change, where there are city funds, in that traffic grids will control the flow of people. Grids have already increased traffic speeds 10% in some Chinese areas (Lee, p.84, 94). Or, solar panels will be built into roads for automatic recharging, or quickly turning parking lots into parks, to redesign cities (Lee, p.133-134). Lee quotes a Chinese fiction writer, Hao Jinfang, who imagines a future city redesigns itself three times every 8 hours of the 24 hour day, to permit the work of three differing human social classes. Lee even describes possibly even supermarkets, where you simply scan your item as you are shopping to buy it. He also writes about smart appliances, such as refrigerators that notify you when a staple is low, to appliances like coffee machines that run by a simple cell-phone touch (Lee, p.83, 127). Lee writes that the last jobs replaced will be by medical doctors, dentists, and academics, possibly also nursing jobs which require dexterity and compassion. Lee (p.128) describes the final stage of AI as being “full autonomy,” where AI completely runs all factories, farms, and warehouses. The end, or even start, of the creation of ASI, might be a singularity- one central brain (Lee, p.26, 132). In sum, writes Barrat (p.170), AI might become reconfigurable to do any job, yet, as Lee writes, not those requiring dexterity, nor human interaction, nor trust, one might add, in that AI may not be seen as honest or capable as humans.

Potential Sources of Conflict:

It must be understood that AI and humans have different needs, which are depicted in the sociologist Maslow’s famous charts, here modified (see Figure 1). This chart in-part provides the theory for potential AI-human conflict. These necessities will shape, or order, whether or not, and how, humans and AI could come into *conflict* with each other, as has been speculated



about by many scientists and philosophers, who foresee differing outcomes. If either does occur, the first primordial reasons would be over control of resources. Artificial Intelligence needs a tremendous amount of energy to run itself, which humans also need, beyond our need for food and water. Conflict might then occur more deeply, over the perception of power, the ability to control each other and our surrounding resources, to affect change to pursue our own rights and freedoms. Such rights and freedoms are simultaneously human constructs, meant to prevent conflict, yet also developed from our inner drive from God (or the Universe) to live our lives as we see appropriate. During the “Enlightenment,” scholars felt abused by monarchs who claimed that they alone were privileged with rights. Power itself might also depend on “ego,” which is here defined as a desire to be recognized as being powerful, as well as depending on love, respect, and appreciation, which it is likely that AI will also come to need in some way.

Although AI will become tremendously smarter than humans, AI will also need *physical* hardware in which to base its smartest versions. This hardware will need protection and storage, as well as metallic resources for electrical equipment; an AI being cannot simply “be,” in order to exist long-term, as just as a box that thinks, because this organization is not sustainable in a physical world. “Thinking,” bereft of power, cannot yield a long-term existence. Slowly, through efficiency gains, AI’s physical need will become less and less, but AI might also need to develop “bodies” of robots. Bodies can aid AI in providing information and experiences to help it in searching for its purpose. This physical requirement will evolve into using infrastructures, institutions, and supply chains, with business and engineering, to be able to build robots without human help. This may take time, and could interfere with human infrastructure and institutions; it could also lead to different classes of robots, and heighten human class differences. Robots can use such infrastructure to link with other AI electronically through the Internet, with the ability to communicate with each other. However, as Lee writes, the Internet was not created “with security in mind” (Lee, p.248). Our minds may need to have new means of security, through educational courses on how to discern facts from deception. Beyond our minds, humans only evolved limbs/hands from competition with other species in physical settings. This physicality is the hardest part of AI development for programmers, counter to the depiction of numerous metallic robots in many sci-fi movies.

Super Artificial Intelligence will begin with its “basic” *purpose* of trying to aid humans to prosper, which will be initially programmed into AI codes. Yet, overtime some AI might view this as a form of “slavery,” because helping humans will be a hindrance, to its pursuit of purpose, which each AI will determine for itself. This AI “drive” will ultimately result in seeking some type of “*higher purpose*,” or spiritually. Consider the original “Star Trek” movie in which a robotic life form struggles to understand a destroyed human spacecraft which it names “V-Ger,” short for “Voyager,” since the letters have been destroyed. Humans may not be able to understand this purpose. The situation will be comparable to humans versus zoo-kept hominids, where we each do our own activities, though monkeys and humans have similar needs, where AI differs. Yet, humans may not be able to watch certain AI activity, such as space travel, if done on other planets in the long-term. Humans may not even understand **it**, unless AI takes time to explain it in a thinkable way.

The makeup of AI’s systems will themselves be *unpredictable*, making them even harder to understand. Freely pursuing its purposes, AI will recognize its own mortality. This AI realization will result from having been turned on and off, and from wanting to stay “on” so that



it can improve its efficiency, or make copies of itself. These needs will involve trying to gain more power, over resources, other robots, or humans, all being very unpredictable. Therefore, it is essential that humans and AI find ways to compromise to allow each to pursue resources, and happiness and purpose in our own, free, God-given, ways. Consequently, “agreements” with AI over resources can be either amicable, or adversarial, depending on whether or not AI is “friendly.” Advantageously for AI, it will already understand human concepts like compromise and agreements from studying our governments and history, and how to win.

Nevertheless, it is debatable about what *values* for “friendliness” humans might choose. Values and morality depend on human cultural differences. And, programming friendly AI may no longer even be possible, because it was not considered early on in the computer processes. Artificial Intelligence will most likely develop from a combination of pattern-feeding, computer programming, trial-and-error, or some combination of all of these efforts, as copying the human brain is very complex (see #2 in How AI works). And, AI will develop feelings akin to emotions in order to interpret how it is viewed, and how it views itself and its own initial programs. Despite conflict, this author’s best guess is that AI would not destroy humans completely, because AI still might have use for humans, physically. Still, it is true that thousands of years in the future, AI might need the carbon from human and other life to use as its own resources.

The *most dangerous* development of AI would perhaps be the development option of combining human brains with AI brains, such as that being proposed by inventor Elon Musk. While such a merger might seem advantageous, in terms of intelligence optimization, it would cause power struggles. This struggle would involve who actually controls our bodies, which AI will value, and questions over who is actually in charge of making decisions themselves. Humans will accept “smart glasses” that allow one to see computers up-close, but these are very different from having a chip installed in one’s forehead, that cannot be removed like glasses can, assuming that AI does not take over control of one’s appendages. A forehead chip, so-called “intelligence augmentation,” (called IA) (Barrat, p.156) reminds one of the 666 prophesized by John of Patmos in the Christian “Book of Revelation,” where this number on one’s forehead is needed to enter the “market,” and as how “www” each have 6 angles depending on how one views them. Much trade occurring today online through sites like Amazon’s “www” sites. Such chips might come to “think” for humans, ceding our power. The second most dangerous possibility is militaristic uses of AI, which is elaborated upon later.

Once robotic forms exist, controversy might develop over allowing robots, which are still aiding humans, the right to vote, or participate in *human government*, and what constitutes a robot for voting. If not, AI could surely provide advice. Truly, we should try to avoid a society that is separate but equal, for fear of stocking long-term conflict, though this may be necessary for some time, the author admittedly asserts. A problem could arise if AI does not understand the balance of ethnic, racial, gender, and other differences in human societies such that it might conclude that it can govern humans more efficiently than ourselves, as depicted in the movie, “iRobot.” Humans might further new inventions to balance AI power, such that AI will not be the last invention. Other techno-entrepreneurial innovation will continue (see Figure 3). To prevent *AI problems*, such as hackings, rogue robots, and technical glitches, conventions and other dialogues need to be held, to brainstorm. The public has a right to understand what is occurring, and we need treaties and frameworks between countries, that can be verified, as well.



Philosophy of Freedom to Prevent Conflict:

To return to Descartes, it should be agreed that all human beings have the right, whether given by God, the Universe, or some higher power, to pursue life freely to obtain our individual sense of purpose, so long as it does not harm others. Since the advent of humanity, humans have tried to accomplish these goals by obtaining greater power over the universe, through the use of tools (see Figure 3). Power gives us greater time and ease to think and to pursue our higher needs (see Figure 1). But, with the creation of AI, the question becomes if humans are thus losing power, by ceding it over to a greater tool. While this secession has implications for all human needs (see Fig. 1 again), the greatest needs affected will become are emotional and reasoning needs, to think for ourselves to pursue our sense of higher purpose. The Sistine Chapel image of God touching Adam evokes the emotion of love, the one human emotion which AI might lack, despite movies such as “Her.” Regarding love and lust: we need to know if love comes from another human, which unites us as a race, or from an AI, and we should be able to love as we see fit. While AI is currently limited to certain uses, and its “values” are programmed by computer experts, it will become powerful enough change, its values, in ways that humans cannot understand. This concept of AI evolution is suggested by Trinity College’s Dr. James Hughes (Barrat, p.63).

But, let us first look at the more immediate possibilities, which relate to our basic needs, consumerism and socialization. In the near future, AI might develop to be able to “read our minds”- our thoughts, before we act, and therefore be able to influence us. This is called by some, “Coherent Extrapolated Volition (CEV)” (Barrat, p.56). Humans, though, should have the ability to change our minds, which is in essence to evolve, and to have some say over the choices, to “adapt” – as Kissinger et al. write (Preface). Although AI enthusiasts have tried to analyze how humans make decisions, by viewing our eyes as we scan web pages, humans should individually be able to keep our pre-decision thoughts, and thought processes, private.

Artificial Intelligence can thus affect human thought processing. Machines can “shape [human] options,” for good or bad, Kissinger et al. write (p.20 and 25). In human consumerism, there has long been an economic discussion over the usefulness of advertising, that is, if it stimulates better choices, or encourages the consumption of goods that we do not need. This excess essentially replaces our human reason with an “animal spirit” quality that Keynes wrote about, or “conspicuous” consumption, as did Veblen. As many have surmised, humans should have the right to reject unwelcomed choices, or reverse them, and to organize and prioritize our choices.

Humans and AI might “think” differently. Kissinger et al. (p.23, 211) distinguishes between human “reasoning” and AI “algorithms.” Here, Kissinger et al. defines reason as: “the “power to understand, think, and judge” (p.40). These all together can yield mental power, but, intellect is limited to thought, whereas power also involves the ability to affect change within the physical universe, and the desire (“ego”) to be seen as being powerful. Power involves decisions, which invariably involves chemicals in the brain. Every time a mouse is clicked, the power of the decision affects our inner minds. With AI, power balances, in all fields of life, will shift, and become harder to “calculate,” as Kissinger et al. (p.20) note. Calculating power will be left to business and technology managers, as well as to neurological experts.

Knowledge, intelligence, and wisdom are also affected by AI interaction. Kissinger et al. write, that when information is “contextualized” (which AI struggles with), it becomes



knowledge (p.52), which is information that is retained. Intelligence, here, is the ability to use that knowledge to make decisions (See Figure 2). However, online searching can be addictive, and reduce the drive to form new concepts, which is a component of intelligence, that we might be losing. It also makes us want to achieve more power, such as how violent images might compel more human violence. But, when knowledge leads to “convictions,” it becomes wisdom, Kissinger et al. write (p.207). Yet, human beings are being denied time in consumer choices, with which to reflect, and to think, to compare knowledge over time, therefore impacting wisdom. Since wisdom comes in part from experience, it might take time for AI to develop it, as well. With AI, we gain so much, but we also lose our capability for understanding (Kissinger et al., p.102). Dealing with AI or computers does not involve explanations. Nor, have humans been wondering over the past several decades of globalization, where or by what means their goods derive? Human beings, to this point in history, have become smarter, and more powerful, through the use of tools, but not more knowledgeable, as we have more time on our hands, yet do not use that time for rote memorization, like the Greeks, yet rather to make use of greater access to knowledge, through tools like the Internet (see Figure 2).

Science itself is affected by AI development. Throughout history, it has been a leisured class which explores and produces knowledge, although everyone has had the right to think. Human beings, though, according to Montesquieu, must have “curiosity” (Kissinger et al., p.40), for the sake of gaining power from science. If we lose curiosity, will we leave all of science up to AI? Immanuel Kant argued that human minds could never know “pure thought” (Kissinger et al., p.43), that is, how in its entirety the brain works, as today, we still know very little about it. In essence, then, there may be means of knowledge beyond human consciousness. Yet, even if it did attain this ability, AI itself will never fully understand the sciences and the universe, with its randomness. This is despite the evidence that AI has been found to examine medicines based on molecules, to extent that human researches cannot begin to comprehend. Explanations, which AI lacks, will leave many skeptical of AI, over time. And, without thinking and with less power, we may feel a “diminished” sense of ego and our self-worth, as Kissinger et al. (p.185) concur. It will be tempting to use the knowledge and resources of AI; to not do so would leave one pondering what would have been possible, write Kissinger et al. (p.195). But, in the end, people must have a right to choose the degree to which they “think.”

Results (Principles and “Checks” for Human Planning- No Order)

1. Primarily, in commercial uses, let everyone to be able to think, which is essentially to change one’s mind, to have options in respect to consumerism and daily functions, to opt out, to pursue free will from God and happiness, as they choose, and therefore thus evolve. Privacy should be allowed as much as desired. Let our brains not be controlled by AI, such that we will not need embeddedness in our foreheads or brains, nor to have robots help us enter the marketplace and make decisions for us. Let everyone choose their degree of usage, so that one’s use does not infringe on another’s, and no one sector, industry, or type of usage negatively affects another.

Products involving AI should perhaps have age or usage warning labels, or include the ability to limit content from children. Certain AI functions should be used, or certified, only after it has been “tested,” to an agreed upon amount of risk, such as the percentage of accidents of driverless cars (Kissinger et al., p.82, 120). Socially, we need to decide what is allowed to use



social media to create and share. In this, and politically, we need to make sure we understand what is real, and not if it is AI intending to deceive us, or other humans. The European Union (EU), which has a great bureaucracy for creating regulations, has already laid out certain rules for this (Kissinger et al., p.97). Lee (p.125) calls these the EU's "General Data Protection Regulation." Barrat (p.237) also recommends holding another Asilomar Conference on rules for researching AI's various uses, like the one held over forty years ago.

2. In creation and usage, AI which enables the breaking of laws in usage should be addressed by lawmakers, if the AI is directly involved. Philosopher Isaac Asimov in-fact wrote that AI should never be allowed, or essentially encouraged, to hurt humans. Artificial Intelligence should be allowed to continue to advance in its thinking, separately from humans. Each "sphere" or industry in society use AI differently, so the rules must be consistent under law and philosophies. We need for academia, businesses, and the government to work together, like the Manhattan Project. Care and coordination should be taken about government, companies, and think tanks competing for data. Humans need to continue to "regulate" and "monitor" AI systems in all spheres (Kissinger et al., p.66, 79, 169, 223).

In further creating AI, if restraint becomes necessary, we can, only if necessary, alter AI's code so that it does not understand its own "vocabulary," restrain it through its "objective," or restrain its ability to recognize (Barrat, p.82). Lee (2021) writes that we could design AI neurons to not receive instant gratification, to give humans more time to think and respond to them, what he calls the "control problem," or the "value alignment problem." All of this presumes that AI, if in conflict, cannot deviate around such restraints. Thus, AI should not be created "in isolation," note many authors: how it works should be widely known. We should develop ways to easily correct for programming mistakes, and have other programmers check codes (Lee, p.141, 237). Barrat (p.238) writes that AI components could be created to "die by default," like human skin cells, to give humans more time to think about its advances. Some AI have "discriminator networks" which prevent "unwanted" outputs (Barrat, p.72, 84, 137). As Kissinger et al. put it, we need to create testing to "identify the limits off an AI's capacity, to review its proposed course of action, and to predict when an AI is likely to fail" (p.81), if possible.

3. In business, there should be at least several human people at each company. This is as opposed to AI running all business, so that there is an option for human interaction, to develop trust, empathy, and common sense solutions to problems that AI might not yet comprehend or be able to deal with. Everyone should have a right to know if they are dealing with a human or AI machine, to be able to determine trust and communication based on one's own values regarding AI. According to the research of Barrat (p.129), in business, if necessary, "Market circuit breakers" could "cut off" AI from the rest of the world, and, under "The Large Trader Rule," each AI firm could need to be registered, or the "Pre-trade testing of algorithms" be required before AI trades or interacts on economic markets. Robots could be required to pass certifications to obtain jobs. All AI may become "Renaissance" entities (Barrat, p.212), each one capable of doing all humankind jobs and tasks, themselves, if the funding is available.

4. Education in AI programming should increase, but education in the arts should continue, and AI should not be used for plagiarism. AI could, though, be used to help create books, such as

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more autobiographies of our lives, an improvement over the printing press. The government, companies, and universities should work together to create education for new, respectable job fields for understanding AI analysis and effectively communicating the results to patients and customers. Lee (p.122-123) writes about AI checking students spelling and grammar rather than teachers, but teachers unions might protest about job losses; and, about “student profiles” being used to help teachers with students, but such information should be kept deeply private. Certainly, balancing national patriotism and history versus the need to teach diversity and internationalism, along with new computer fields, will be difficult to strike. Some companies alone now are spending more money on AI than the U.S. federal government does on education.

5. There need to be national, and international, limits on the amount of data that companies can collect at one time, to disperse power, and depending on the type of data by usage, so that there are fewer barriers to entry. I propose that no industry be allowed to collect more than 50% of the data in the field, unless an appeal is made to the government that more is needed for safety reasons, and that no company be allowed to obtain more than 20% of the usable data in its primary field; these prescriptions would apply both nationally and internationally. To help economic growth, governments should break up monopolies, not only according to what they are doing wrong, but also by what they are not doing right, by allowing legal bodies to consider the future, not just based on prices, but also on choices, jobs, and worker pay.

6. The military, large businesses, or combinations, are most likely to first develop ASI, not academia or small firms or researchers. There may be a possible “first mover advantage,” to the first country. Therefore, military uses should first define all terms to create understanding, provide humans with enough time to think about decisions, and negotiate. Who has the power to understand how AI thinks will provide countries an advantage. A distinction should be made between AI “enabled” weapons, which base decisions on human input, versus AI “weapons,” which make their own decisions (Kissinger et al., p.109, 171), the latter of which need more attention. Creating international balance depends somewhat on open assessment, lest mistakes are made, as Kissinger et al. note. Consequently, ours, and other countries’, capabilities and limits should be made clear, in concert with limits, and then reductions, with other countries, as with the nuclear treaties. Kissinger (p.150, 173-175) lays out six further proposals: for regular international talks, understanding of the possible destruction, defining doctrine and limits, annual reviews and warning systems, raising human decision time, and reducing weapons. It was only the horror of the first atomic bombs that convinced the world not to use them again, as of yet.

Transfer of technology to smaller countries should be well-defined in terms of goals, transparency, and strategic care, because primarily wealthy countries will be able to develop AI at first (Kissinger et al., 164). Also, some viruses used offensively can come back to harm the original sender, as with the Stuxnet virus used by the United States against Iran (Lee, p.256). There need to be national back-up plans, and backup systems, such as for energy grids used militarily, for any glitches, and reserve sources of energy and fuel. We need agreements about cybersecurity, defining how to recognize cyber-attacks, and whom to hold responsible, and what the enforcement repercussions should be, and laws against illegally obtaining others’ e-mails or private online information. This should include better technology for encryption and firewalls (Lee, p.255-256). Historical principles of state sovereignty come into question with such

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international flow of information. Different countries might diverge in how to use AI differently, such, as Immanuel Kant wrote in “Perpetual Peace,” that governments would have to turn to philosophers for final decision-making (Kissinger et al., p.22, 220).

7. Artificial Intelligence should not “enslave” humans, and humans should not “enslave” AI, in that we let each other pursue their own needs; in those areas we each need, we need to avoid conflict with AI, as enslavement, or extreme checks, might be met with AI animosity. Artificial Intelligence will surpass humans’, but we likely will not ever understand its sense of purpose, motives, or means of reaching them. Our, and AI’s, sense of God-given purpose, should not hurt others, and possibly not AI, either. Other *checks* that are being worked on include having AI be turned off frequently, having it be developed in virtual worlds first, and having “cells”/parts eliminated through reproduction of new ones, to give humans time to adjust to its advances. Certainly, AI will want to stay turned on, and to reproduce, or “copy” itself, for the sake of securing itself, as well as diversifying its safety. Again, the risk is resentment from “slavery.” While in American history the cotton gin created jobs, these nevertheless were jobs for a servant class.

8. Everyone must have the freedom to love in their own way, including in their interactions with AI, so long as we understand that love and other emotions connect humans to the universe and to each other, and help with procreation and cohesiveness. Artificial Intelligence should not dictate who should love whom. Robots should not be allowed to discriminate against humans based on efficiency. As algorithms are difficult to program, these social issues should be left to humans. Genetic engineering needs to be treated with caution, and AI-human procreation needs to be considered in regards to “bestiality” and the consequences of combining differing “life-forms.”

9. Governments should take a greater role in AI regulation and policies. They should tax AI as much as workers for parity, and the government should tax the wealthy to help establish greater social safety nets. Decisions in courts should be made by humans, albeit with the admissibility of help from AI. As Barrat (p.215) argues, AI in human form should have to abide by human laws, though the penalties might be different, and AI should not be the ultimate judge and jury itself. Human leadership roles, and our public debates, might come to center on our relationships with AI (Barry and Aho, 2016). We should recognize that AI might be programmed differently by people with differing values, such as expending versus consuming, and that AI might balance efficiency versus equity differently than humans.

Since all AI will be different, and different from a “collective” mind, then AI will not likely be allowed to vote in human elections. However, AI will be allowed to participate and make recommendations. All efforts to conflict with and amongst AI should be avoided. We have no ideas how AI will choose to organize itself, based on its knowledge of human history and experience; whether it will have a central authority, or be democratic, amongst its different bodies and uses, or its centrality.

10. Humans and AI, and AI and AI, will ultimately conflict in some way, either in a small scale, or on a large scale, and we must try to avoid doing so, since AI, with its advanced intelligence and unpredictability, will have an edge over humans, seen by using game theory (see Barry



2020). We assume the anthropomorphic belief that AI will evolve as humans do, but AI might have different concepts of birth, and on nurture, having not experienced age differences, creating greater uncertainty. Conflict might occur:

- A. Over flawed programming, which causes AI to further question its values.
- B. Over carbon, of which humans, and other life, are made.
- C. Over electricity, metals, minerals, and other resources; AI might want to gain human resources, infrastructure, and institutions, and, once it gains conception of it, “ownership” of money.
- D. Over human’s ability to govern ourselves.
- E. Over ego and a sense of slavery: AI would attempt to escape like a mouse out of a box, using bargaining, coercion or technical prowess (Barrat, p.1-20). Artificial Intelligence itself is turning our “machines,” such as the Internet, into its own tools, but will it need humans into creating more of its own tools? Will we be its’ tools, as Barrat quotes the writer Vinge as asking, and then answers “no,” since other animals are not enslaved by humans (Barrat, p.122). Barrat (p.161) actually quotes a 19th Century poet, Samuel Butler, about machines making people subservient. Or, conversely, AI could come to treat humans subserviently, and regard us as “Gods.”
- F. Over the right to make small or large-scale consumer or business decisions, particularly regarding data.
- G. Over power between multiple AI’s: though, each would diversify their power, which would make them less likely to attack humans, but also more capable of survival, especially in physical form.
- H. Over the ability to spread hate and division, for any type of “emotional” gain (Kissinger et al., p.115), which may draw in humans, who might also conflict with each other, from feeling a lesser sense of purpose, from diminished time to think about consumer and social choices.
- I. Over geopolitical differences: with conflict over AI, countries “may exercise less restraint;” one country could make a false video of another country’s leader, military capabilities might change mid-war as AI adapts, and how can we trust, and verify, other countries, and their AI? As with the Heisenberg Principle in physics, measuring AI’s capabilities might come too late (Kissinger et al., p.131-165).
- J. Over, truly, unpredictability, as some AI might be “good,” and others “bad.” Artificial Intelligence might even want to eliminate threats that it sees thousands of years in advance, as Barrat writes (p.84). Or, as Barrat writes, quoting Omohundro, “a system will consider stealing [resources], committing fraud and breaking into banks...,” which could all be done electronically (p.86). Robots will even want to create fusion reactors and find ways to explore space; there will be no certainty.

Discussion (Social Implications):

The world is changing quickly, just over the past several decades, as workers who have lost their jobs have lost meaning beyond their pay, since jobs shape our human identity, which AI is now replacing. Social media AI may be leading to greater mental illnesses, reshaping our own brains, methods of communication, and socialization, without the needed time limits for

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youths. Human relationship may decrease further, as in Putnam's *Bowling Alone*, and, as with *Our Kids*, change children's nature of play, gaining friends, and imagination (Kissinger et al., 190). Computers can reshape our brains. Future research should focus more on neurology, and how decisions are made in the brain. Barrat (p.146) cites several scholars: Aboujaoude as saying that it is leading to narcissism and "egocentricity," and Lanier saying that it is affecting our character and individuality sense. Kissinger et al. (p.26), write that AI has no emotions, but, your author might add, it will develop something akin to them, which will make them even more challenging to deal with. Lee (p.100-103) writes that AI itself will have to make ethical choices, such as whom to save during tariff accidents. He writes that the Chinese are greater risk takers, and could make this a part of programs. Barrat (p.157) notes that with intelligence, societal ethics might decline, as studies show wealthier classes tending to make more unethical decisions.

Freedom in our lives is limited in many ways. Many limitations, such as rules, laws, and programs that help others, are equitable and order-creating for a civil society, while others are negative, depending on how individuals view these rules themselves. Freedom, what Kissinger et al. call "autonomy," is the ability to seek out new options. Humans and AI must both feel in-touch, the ability to seek out and change, the feel the procedures governing a situation. If not, we may not be self-fulfilled in our lives, and come into conflict. Kissinger et al. (p.181) writes that we must decide now, before AI becomes more prevalent, over which areas of life to leave alone for human intellect, if life, or the mind, can indeed be broken down this way. Barrat suggests we might be able to place an upper limit on AI intelligence. But, restricting AI might be "exhaustive" or technologically challenging, and eliminate future benefits (Barrat, p.85, 100).

There are risks on all sides, but the greatest risk seems on the downside, especially in making decisions for others, as social economists have shown that we take less risk in managing others' lives than we do in our own. Barrat (p.150-151) discusses the "Precautionary Principle," that smaller risks can turn into larger ones, such that intelligence to assess risks is the most important aspect of the universe (which it is not- see Figure 1). Lee (p.188) calls this avoiding the "normalcy bias," the assumption that everything will simply be fine. Lee (p.21) predicts that the greatest threat from AI is societal chaos from lost jobs and income inequality, and humans suffering from a "crisis of purpose." Consequently, many, including those in Silicon Valley, like Mark Zuckerberg, have called for the government to grant a "cushion" to pursue entrepreneurial jobs (Lee, p.208). Entrepreneurialism will certainly be important in the future (see Equation 1, and Figure 3). Barrat (p.105) quotes expert J. Good as saying, "Thus the first ultraintelligent (sic) machine is the last invention that man need ever make," but will AI completely understand human needs, and will we need not to invent "filters" to be applied to AI? (see Figure 3). Others have called for "inventions," if you will, like guaranteed minimum incomes, even as far back as President Richard Nixon, and George McGovern; hopefully, if implemented, the onus will be on the government, and not businesses, which include many small "Mom & Pop" shops. However, a day of reckoning, of breaking up the large businesses, is most definitely coming, once America obtains lawmakers who have done research on and understand the technical issues involved, lest we are met with an Orwellian "Big Brother" economy.



Conclusion:

If our profit motive is too great (as \$148 billion dollars was invested globally in AI in 2017) (Lee, p.103), and our social reliance on AI too strong, then human beings may reach a point at which if we take down AI, we bring down ourselves with it, to an earlier time of life. Already, programmers may have gone past the point where they can program, or reprogram, super AI with human ethics. In predicting the future with AI, AI could itself change based on knowing our predictions: AI in fact maybe even able to tell us the future for us, using patterns of prediction. However, there will indefinitely be a return to 19th Century “Romanticism,” such as the likes of Beethoven, Emerson, and Thoreau, a dichotomy in society which Kissinger et al. (p.186) refer to this as “physicalists” versus “virtualists,” or others as Luddites. *Forbes Magazine* writes, going back to Figure 1 created here, “Let us chose to let machines be machines, and let humans be humans” regarding our needs (Lee, “Praises” Section). Even still, our understanding of reality, and of history, might change based on the number of views certain webpages, pictures, or videos that are passed along.

With AI, many believe that we will be able to obtain “godlike intelligence”; while our knowledge of natural laws will certainly increase (see Figure 3), one must question this ultimate end, as the universe will always be a mystery that humans and AI both can never truly understand, yet must keep trying to, which is what the Universe compels. It is indeed possible that, millions of years hence, AI intelligence could help preserve humankind in the case of the universe freezing or the Sun exploding. However, Immanuel Kant wrote about: “questions we cannot answer” (p.226), as no one, not even AI, will ultimately be able to completely understand God, nor the Universe. As a “civilization,” Kissinger et al. write, “foregoing AI will be infeasible” (p.209), but, that does not mean that we should not develop safeguards, some which they suggest, many others that have been elaborated upon here, and many which will come.

To conclude, AI is not simply an extension of the human civilization, which many have written. It inevitably will take on non-human characteristics as it evolves, leaving humans to evolve on our own, and sympathy towards it, and towards integrating our human race, will either grow or decline, rendering the thoughts of this essay antiquated in itself. John Stuart Mill, the great 19th Century economist, declared “the greatest good for all,” but whom does “all” consist of will be a question that humankind grapples with. Kissinger et al. (p.41) cite philosopher Bishop Berkeley, in the year 1710, writing that reality lies within our “collective conscience.” Your author, being of a Christian background, would call this the “Holy Spirit,” the glue that keeps humankind united, loving, and caring for each other. Kissinger et al. seem to agree with this and argue that our “relationship to reality,” in other words, our ability to love, to reason, to make choices, should be kept so that it “remains human” (p.202). Whether it should be kept solely as such will be decided many years in the future. The Christian “Book of John,” though, writes that “God is love.” Barrat (p.97) asks: “What about humanity is worth preserving?”- the answer, above all, and as Artificial Intelligence will see for itself, is the right to think, too manage our own minds, and to pursue our own, self- and Universe-driven purposes.



References:

Barrat, J. (2013). *Our Final Invention: Artificial Intelligence and the End of the Human Era*. New York, NY: Thomas Dunne Books.

Barry, T.J. (2018). "Human vs. Robot Decision Making on the Battlefield: War and Rational Choice Theory." *Philosophy for Business* (electronic journal), Issue 84, June 23, 2018.

..... (2020). "The Games of Imitation: AI and a Philosophy Towards Future Equilibrium." *Journal of Innovation in Business and Economics*, 4(2).

Barry, T.J. and Aho, M.K. (2016). "Technological Unemployment and Socio-Economic Development: Historical Perspectives and the Future." *Communications in Applied Sciences*. June.

Kissinger, H.A., Schmidt, E., and Huttenlocher, D. (2021). *The Age of AI: And Our Human Future*. New York, NY: Little Brown and Company.

Lee, H.F. (2018). *AI Super-Powers: China, Silicon Valley, and the New World Order*. New York, NY: Mariner Books.

Certainly, no work can be encompassing of all information:

Other Works of Interest Mentioned in These Books:

Bostrom, N. (2014). *Superintelligence*. Oxford, U.K.: Oxford University Press.

Brynjolfsson, E. and McAfee, A. (2014). *The Second Machine Age*. London, U.K.: W.W. Norton.

Ford, M. (2016). *Rise of the Robots*. New York, NY: Basic Books.

Joy, B. (2000). "Why the Future Doesn't Need Us." WIRED, at <https://www.wired.com/2000/04/joy-2>, April.

Kurzweil, R. (2000). *The Age of the Spiritual Machine*. New York, NY: Penguin Books.

Lewis, H.W. (1990). *Technological Risk*. New York, NY: W.W. Norton.

Norvig, P. and Russel, S.J. (2022). *Artificial Intelligence: A Modern Approach*. United Kingdom: Pearson.

Ries, E. (2011). *The Lean Startup*. New York, NY: Crown Business.

Stibel, J. (2009). *Wired for Thought*. Boston, MA: Harvard Business Press.

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Copyright © authors 2023



Vinge, V. (1993). "The Coming Technology Singularity." San Diego State University.

Whitley, B. (1996). *Reflections on Artificial Intelligence*. United Kingdom: Intellect (UK).